Zeitschrift: Trans : Publikationsreihe des Fachvereins der Studierenden am Departement Architektur der ETH Zürich

Herausgeber: Departement Architektur der ETH Zürich

Band: - (2015)

Heft: 27

Artikel: Any-fold : on curation, literacy & space

Autor: Bernhard, Mathias / Orozco, Jorge / Marini, Nikola

DOI: https://doi.org/10.5169/seals-918912

ANY-FOLD: ON CURATION, LITERACY & SPACE

Mathias Bernhard
Nikola Marinčić
Jorge Orozco

The Schweizer Kleinmeister

The First Swiss Open Cultural Data Hackathon took place on 27 / 28 February 2015 at the Swiss National Library in Berne. Some 100 software developers, artists, researchers, and members of the heritage sector gathered to explore more than 30 open data sets provided by over 20 different GLAM institutions and to put this cultural data to wider use. One of the provided datasets is the Gugelmann Collection, housed by the Swiss National Library since 1982. The collection consists of over 2300 drawings, prints and paintings by the Schweizer Kleinmeister–Swiss 18th century masters. The collection was not easily accessible to the general public before and was brought to the hackathon with the goal of raising its public awareness. A team consisting of Nikola Marinčić, Jorge Orozco and Mathias Bernhard from the chair of Computer Aided Architectural Design [CAAD] of ETH Zurich was joined by art historian Sonja Gasser with the goal to provide a different form of access to this body of work, other than just a seemingly infinite table of thumbnails. The collection of high-quality scans provided us with an opportunity to create a prototype for the model of curation that could illustrate and challenge our theoretical standpoints. Our idea was to not concentrate on a single piece, but rather to put emphasis on the space of relations between all the items. The user is confronted with a three-dimensional ‹cosmos› of all the items, and not with an individual piece. Each of the 2300 items is characterized by color attributes, painting techniques and metadata in form of descriptive texts. This over 4000-dimensional space is constantly being reconfigured. Whenever the user specifies a certain interest, a custom projection to three-dimensional space arranges itself before the user's eyes. The user can navigate this space and explore its gravitational fields, routes and voids, phenomena corresponding to the similarities and differences the images.

The 19th century saw curators' duties change from collection to selection. Their authority allowed them to institute and promote their evaluation metrics to the public as the objective reference frame. The knowledge about these metrics requires the curator to oversee an entire collection; this is what makes up a curator's mastership. Information technology bears the potential to transform the contemporary conception of this profession. A curator's expertise combined with what we call digital literacy is necessary to set up a model as follows.

The demand for pre-configured audio guides leading a visitor by the hand, prescribing what to see in a work of art, is declining.[1] Instead, visitors want to dig for personal nuggets, interpreting answers to subjectively relevant questions.[2] Information technology empowers us to do exactly that. Items need no longer be stringed together linearly in time or alphabetically. The urge to force everything into pre-labelled drawers has vanished. There is no need for obedience towards hierarchical categorisation. Instead, items can be clustered rather than categorised, which allows for the spontaneous appearance of previously unseen alliances. These clusters are constituted by the attributes of the items they describe. We refer to these attributes as dimensions, where n characteristics per item define an n-dimensional space. Any attribute can become a dimension, from easily acquired numerical values like the year of origin, textual values extracted from descriptive metadata, to high-level features like edges or textures of an image itself, retrieved by means of computer vision. This allows quantifying items under different aspects. Every single item constitutes a data point in a high dimensional point cloud, which provides a look at the entirety of the data—to whatever degree of complexity. As items are not only sorted along a single axis, the set of metrics has to expand, able to compute similarities between those items. Binary decisions whether or not an item is for example colourful are replaced by assigning a certain degree of colourfulness. Sorting becomes a matter of probability. Depending on the query, different sets of dimensions can be taken into account and be weighted according to individual scores. Items are embedded in an ever-changing network of similarity relations. Every question brings up new neighbourhoods. New ties between items can evolve by evaluating what a visitor looks at next after a given item. All these mutually perpendicular embeddings augment the lecture of a single item, always in relation to all the others. We are all very familiar with such marvels from services like search engines or online bookstores recommending us what to read next. They enable us to find the needle in enormous haystacks, impossible to overlook without them.

Web search technology presents us with a way to transform the web space by characterising all its contents according to any user's interest. And this process happens almost instantly, between hitting enter on the keyboard and loading a browser's page with results. The Web is a system that allows a loose arrangement of data, unconstrained by categories, hierarchies, ontologieses or semantics; and still—without these concepts that traditionally provide stability and control—when looking for something, a web search service returns a list of pointers where we most very probably find what we are looking for. When searching the Web, a query is compared and measured againt the provider's index of the web. This process results in a one-dimensional render of the web space, transformed according to the query. A web search engine transforms the space as many times as the user presents a query, and further improves the next results through these transformations. The measuring algorithm, that compares the query with the whole index of the web, presently includes around 200 parameters: Is the query in the title of the document or is it in the body? How many times does it appear in the document? Is the query one or more words? Are there any synonyms for the query? How popular is the document? and so on.[3] This piece of engineering is optimized to solve a problem: given a query, return a list of ranked documents that probably contain the answer.

Information technology is introducing a new plateau on which vast amounts of items coexists in a non-intuitive way; where an item has n-dimensional characterizations, and its space is constantly transformed according to any interest. Given this setup we ask: Could we think of architectural space as information technology thinks of its computable space? We do. Our hypotheses are that with the aid of computers, the architectural space can be characterized, measured and transformed in n-dimensions according to any architectural question; that it can be rendered to an intuitive three-dimensional space at any time, while taking into account all the original dimensions. We do not mean a traditional scatter plot showing one dimension against another one, for example, hue against time. There is no need for reductionist assumptions. We think architecture and curation are not about the exclusion of anomalies, but about the orchestration of richness.

While changing the ways we source and characterize information, information technology has expanded conceptions of both curation and space. The notion of architectural space usually refers to three dimen-

fig. b
Image within the context of similar color distribution. Different places, same palette.

fig. c
Image within the context of textual metadata. Similar word frequency in title and description increases proximity. Different Lucerne motifs by various artists.

sional, physical space and its representations. While the 3D-space will always be the outcome of physical spatiality, information technology allows us to operate within an expanded notion of space. This space can be of any finite number of dimensions. On the web, for example, additional dimensions to texts, images, videos and other multimedia content are provided as a metadata: descriptions, tags, likes, backlinks, language, domain, etc. Even though these additional dimensions are virtual and possess no physical intuition, they are exactly the ones allowing us to characterize the world of information around us. This appears to be a paradox, since our pre-digital intuition is rooted in physical space. Our intuition still often seeks refuge in the world of representation. For example, the field of data visualization approaches problems of complexity and information abundance by trying to resolve them through ways of representation. Media are filled with beautifully designed infographics that are almost desperately trying to project the complexity of the phenomena surrounding us into one single image. From a certain perspective this phenomenon does appear to be a deadlock, as information without its ‹natural› representation still appears to be slightly intimidating. However, almost every part of our global technological environment operates and depends on this multitude of non-representative multidimensional spaces. With information technology, new stabilities and intuitions are formed by the confidence in a new kind of symbolic thinking—digital literacy.

Addressing data by its dimensionality allows for consistency in any form of arrangement and self-curation. This however does not diminish the role of the curator, but challenges it in multiple ways. Empowered by new means of characterising information, the process of curating becomes an interplay of selection and projection, from and into different multidimensional universes, unattainable by conventional means. Global accessibility of information and means of extracting knowledge from it disperses some of the power inherent to the skills of a curator. This process of democratisation, however, does not mean that everyone immediately becomes a successful curator. In order to regain his mastership, the curator of the digital age must accept this new technological plateau as a generic ground to pursue the cultivation of his skills and abilities. The capacity to be inventive within unlimited possibilities of characterizations, and to create unforeseen constellations, is the promise of digital literacy. To become a master again, the curator needs to become literate on a new level, literate in the digital.

1 G. Wayne Clough, ‹Best of Both Worlds: Museums, Libraries and Archives in a Digital Age›, Chapter 4: ‹A Changing Role for Museums›, Smithsonian Institute, 2013.
2 Elaine Gurian, ‹The Essential Museum›, 2008.
3 www.youtube.com/watch?v=BNHR6IQJGZs, Retrieved: 30.4.2015.

Mathias Bernhard, born 1980, is an architect and computer scientist. After graduating a Master of Advanced Studies in Computer Aided Architectural Design (MAS CAAD), he worked on several research projects on digital technologies in building construction at the CAAD chair of ETH Zurich, where he is currently working as a PhD researcher and teaching assistant.

Nikola Marinčić, born 1982, is an architect and computer programmer. He graduated from the Faculty of Architecture in Belgrade, Serbia, and received his MAS diploma at the Chair for Computer Aided Architectural Design at ETH Zurich. Currently he researches and teaches at the ETHZ on the topics of pre-specific modeling and sound design for architects.

Jorge Orozco, born 1983, is currently working on his PhD research project supervised by Prof. Dr. Ludger Hovestadt at the Chair for CAAD in ETH Zurich. After obtaining his architectural diploma from UMSNH in Mexico, he joined architectural praxis developing various housing projects.

Κατά νοῦν
labOratorium

The preliminary process of architecture can be compared to the process of curation, in
Historically, the natural environment was the one and only source of inspiration. How forms
harmonious coexistence distinguis
Sounds, light and shadow, weather phenomena and ma
The combination of different stimuli found in the natural envir
They observe, they distinguish, they filter and they select. They
which memory challeng
Observing everything from this
images, odours, soun
This procedure, conscious and un
The genesis, the cataclysm of thoughts an
a
In this back and forth process, not only
from the environment, but impulses gu
intriguing role, in which it triggers the surro
existing echo or even to

It is evident that this process is subjective and occurs differently in every one of us. Every stimuli acts and reacts in an unpreventable way, with personal memories and thoughts which leads to unique conclusions. Subsequently we cannot refer to a specific process, to homogeneity. What is taking place is more comparable to a network of heterogeneous situations than to a situation of parallel networks.

The field of inspiration that already exists in nature beckons for human theoretical involvement so as to lead to possible pragmatic interventions or even to latent ideas that will stimulate succeeding intentions.

This enriching state of one's mind is a never-ending process. Memory traces, experiences, images, technical knowledge, critical spirit and stimuli received from the environment at a particular point in time create our subjective ‹mind collages›.

These consist of an inventory of information (categorising the groups of all the mentioned elements that interact with each other) selected and slightly processed during the preliminary process of architectural practice, corresponding to the fragments of unclassified information a curator collects.

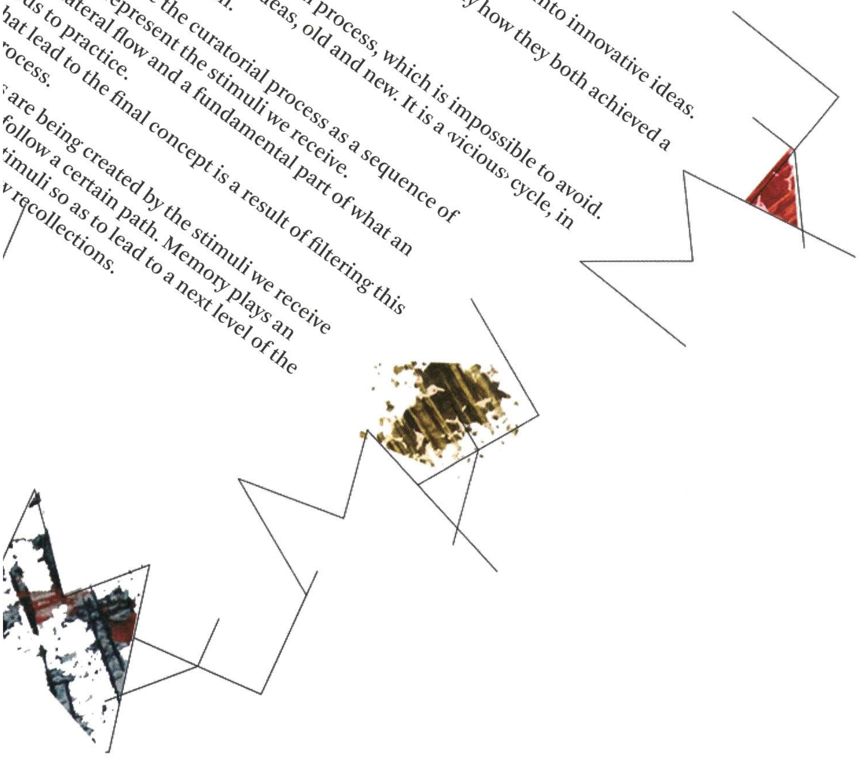
A=memory, E=stimulus, Σ=thought!

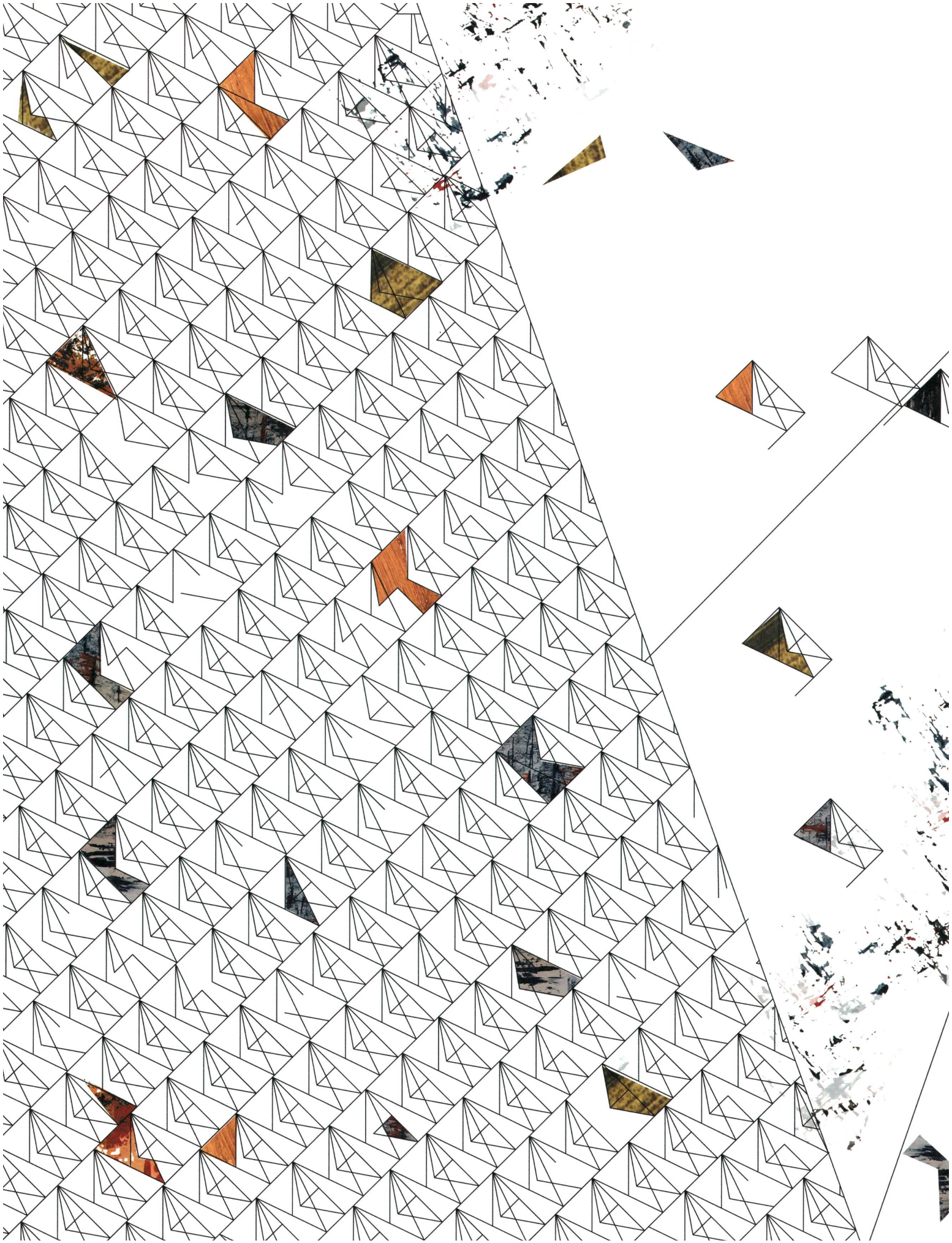
f selecting information and images and thereupon transforming them into innovative ideas.
d observation, how textures interacted with colours and finally how they both achieved a
nain field of examination.
all form part of a wider inspirational field.

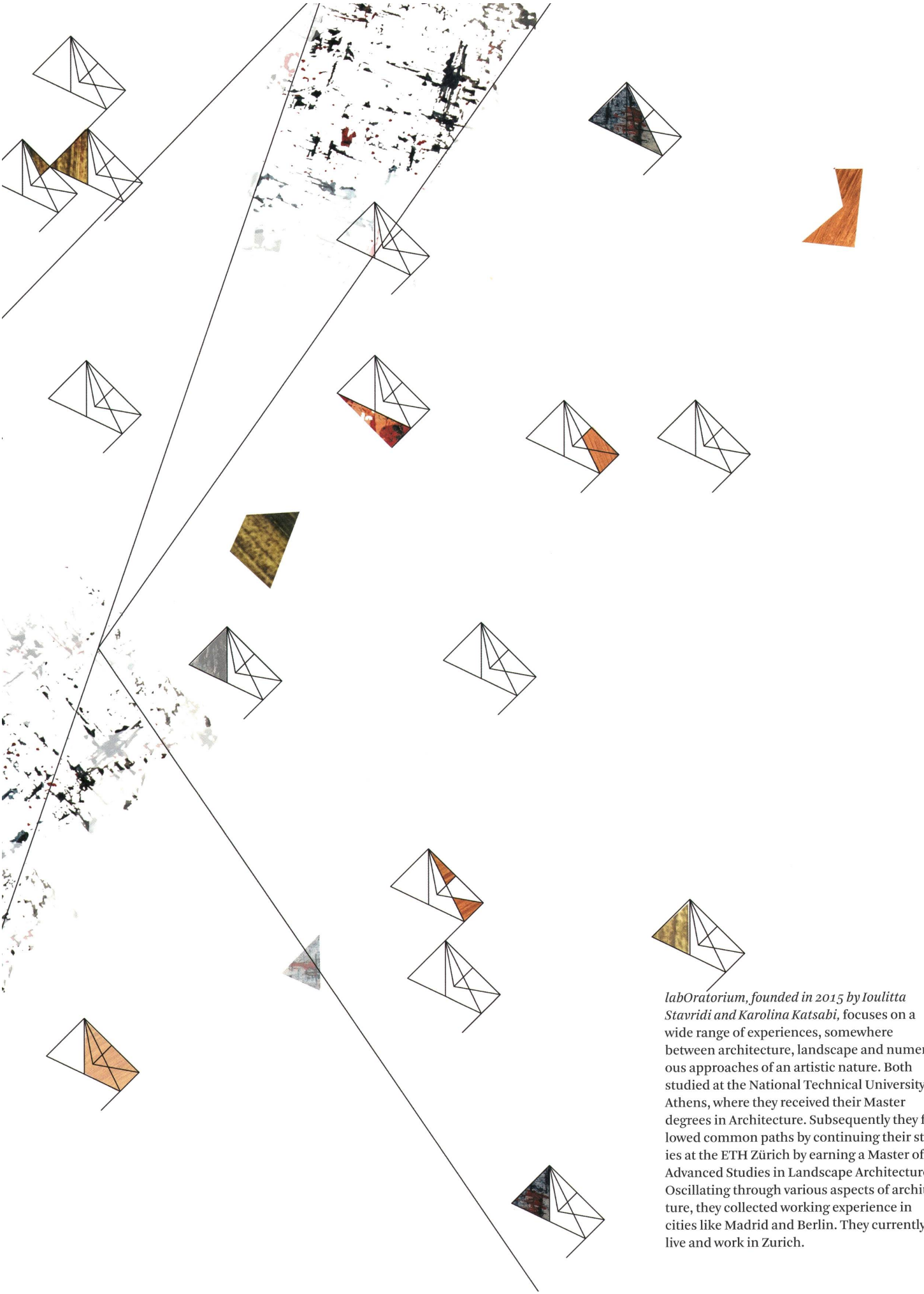
trigger architects to engage in a curatorial process, which is impossible to avoid.
they perceive with memories and ideas, old and new. It is a ‹vicious› cycle, in
vation and inspiration is born.

view, we could define the curatorial process as a sequence of
xtures, which represent the stimuli we receive.
s, is a bilateral flow and a fundamental part of what an
needs to practice.
hat lead to the final concept is a result of filtering this
rocess.

s are being created by the stimuli we receive
follow a certain path. Memory plays an
timuli so as to lead to a next level of the
v recollections.







labOratorium, founded in 2015 by Ioulitta Stavridi and Karolina Katsabi, focuses on a wide range of experiences, somewhere between architecture, landscape and numerous approaches of an artistic nature. Both studied at the National Technical University of Athens, where they received their Master degrees in Architecture. Subsequently they followed common paths by continuing their studies at the ETH Zürich by earning a Master of Advanced Studies in Landscape Architecture. Oscillating through various aspects of architecture, they collected working experience in cities like Madrid and Berlin. They currently live and work in Zurich.