



DRAWBOT

POST-DIGITAL DRAWING IN ARCHITECTURE AND ART

In 2017-2018, AREA Institute presents a program that will explore the nature of drawing in the post-digital era. A traditional architectural medium, drawing is being radically redefined by the computational turn, through the use of digital design, visualization and fabrication techniques. **DRAWBOT** will present projects by architects, artists and computation scientists through a series of 4 exhibitions, workshops and talks. It will explore the mutations of contemporary drawing, produced or influenced by robotic technologies, artificial intelligence and genetic algorithms, and its reconnection to abstraction, imagination and materiality.

Architects and Artists

Edouard Cabay (Appareil) Grégory Chatonsky, Anne-Valérie Gasc, Jessica In, Andrew Lucia, Peter Macapia, Vahid Moosavi, Maria Smigielska, Young & Ayata.

Curated by : Emmanuelle Chiappone-Piriou & Leslie Ware

Exhibitions

- **Drawbot #1** : 13/10/2017 - 18/11/2017 (opening 12/10/2017)
- **Drawbot #2** : 02/2018
- **Drawbot #3** : 04/2018
- **Drawbot #4** : 06/2018

Workshops

A series of workshops will allow students and professionals (artists, architects, engineers, etc.) to experiment with the protocols and technologies presented in the exhibitions.

Festival

*In June 2018, the program **DRAWBOT** will close with a week of lectures, round tables and performances with the participants, unfolding the year's thematic and questions.*

DRAWBOT

At a time when the vertical integration of digital design, visualisation and fabrication technologies promises a re-materialisation of architecture, to investigate the notion of drawing may appear paradoxical. This crucial question nevertheless continues to nurture vivid debates in the discipline, some predicting the death of this medium while others announce its resurgence in contact with the digital.

It has been several decades now that digital design tools have altered the traditional understanding of what the architectural drawing is. More importantly, the import of simulation tools, based on the use of genetic algorithms, and of robotic procedures, has profoundly shaken the notions of representation and projection upon which the practice of drawing is funded.

Today's software and exponential computing power of our machines introduce the possibility to work without loss, in an exhaustive and exact manner, reconnecting design with physical, material and constructive reality. This reconciliation with the real, that some thought to have spotted in the literality of early digital representations, has now become effective. The drawing henceforth perfectly coincides with the constructive information; it stops representing – and instead presents the project; and, by being "plugged" directly to the fabrication apparatuses, it introduces a relation of identity with the realized artefact.

This leads to the commonly shared idea that the drawing is reduced to an informational normativity, as if flattened, and crashed onto the real. Against this mutation, we witness a form of obsolete romanticism that promotes the uniqueness of the sketch and freehand drawing as the author's original act, both a recording of the world and a creative fulgurance. But this sharp opposition between drawing and technology carries a double omission.

Firstly, it negates that the architectural drawing has historically been linked to technological evolutions that, over the centuries, have regulated man's relation to the real. From the invention of perspective to that of the printing press, technology has determined the epistemological and cultural transformations, allowing for the diffusion of the drawing as a tool to transmit information and, therefore, to regulate, teach and promote an architectonic culture.

The second omission is that computational drawing, by means of simulation procedures, opens up to complexity; its fundamentally rational nature does not abstract it from, but potentially reconnects it to imagination, via abstraction. As such, drawing remains a fundamentally speculative medium, to address the reality of our computational, hyper-abstract world. That is why it dialogs with, and extends, the experimentations that have marked the 20th Century, from the expressionist power of Bruno Taut's glass architecture and the rigour of De Stijl, to contemporary point clouds and

convolutions of digitally simulated flocks.

The program of exhibitions and workshops **DRAWBOT** will explore how post-digital drawing frees itself from fiction to reaffirm its nature, in close relationship with other disciplines: simultaneously analytical, critical, speculative and expressive. In this perspective, **DRAWBOT** will present the work of architects, artists and computation scientists that experiment with simulation and modelling tools, robotic procedures and artificial intelligence, and alter what it means to draw.

Each elaborate strategies that redefine the figure of the author and the work of the hand, both strongly associated to traditional drawings. Certain embrace digital logics of production and aim at translating the quantitative aspect of computation, while others situate the subjectivity of the author in the qualitative, the accidental, the discontinuous, the volatile and the catastrophic.

Drawing can thus be the by-product of an interface, of a recording of the world via data, the fruit of a collaboration with the robot and of the delegation of a gesture, opening up to human and non-human co-authorship. But it can also, on the contrary, emerge from non-linear causalities at the granular scale, opening itself up to the highest simplicity or the most extreme complexity and thus blurring traditional categories.

The program will explore the following aspects:

1. **Algorithmic generation**, an important tool of modelling and simulation, which frees drawing from existing, traditional categories. The author's intentions are not constrained by the tool or the technique anymore: a common digital matter, a continuous informational substratum allows to produce the most diverse effects and drawing can thus embrace, in a unique movement, a pictorial materiality, the illusory realism of photography or the precision of the technical stroke. The drawing is extracted simultaneously from its bi-dimensionality and its fixity and, by means of data visualisation tools, reconnects with materiality and three-dimensionality.
2. **Robotical procedures** used in the elaboration of the drawing. The gesture is here displaced from the hand to the robotic arm, makes abstraction of the body. Opening a form of co-authorship, robotics open drawing both to the possibility of an extreme precision and to a loss of control, to the point of loosing the preliminary design. Through robotics, the drawing adopts other forms of materiality, abandons planeness to be deployed into space.
3. Finally, the exhibitions will present drawings that stem from the **application of digital logics to analogue processes**, such as the use of discrete systems and of unmodified iteration; they will also feature artefacts produced through **data-processing** techniques, that display singular graphic qualities.

DRAWBOT #1

13/10/2017 - 18/11/2017

Opening 12/10/2017

The first in four exhibitions will explore different aspects, all connected to the introduction of imprecision, material contingencies and irregularities into the digital process.

Anne-Valérie Gasc, an artist and research, will present her ongoing research on the modalities of materialisation and disappearance of computationally generated architecture. Her series *Tectorium* and *Tracks* explore the materialisation of movement and push the principle of iteration to the point of impracticability of the model.

Peter Macapia, an architect, artist, and scholar, explores the grammar of mathematical operations: the local, failing and a priori spontaneous logic of the writing of the code. His series *Multiverse* manifests this negotiation between geometry and the logic of functions.

Maria Smigielska, an architect and researcher, unveils *Drawⁿ*, a drawing protocol that explores the robotic gesture: the width of the stroke, the pressure, the finesse, all these characteristics of the hand drawing are transferred to the robotic arm. The process will be active during the entire exhibition, thanks to the presence of the robot *ABBuddy*.



Maria Smigielska, *Drawⁿ*, 2017
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Anne-Valérie Gasc

Anne-Valérie Gasc (1975, Marseille) lives and works in Marseille. She is a resident of the Friche Belle de Mai, where her workshop is located. Her work is regularly exhibited in France as well as internationally: among other places, in Paris (Pavillon de l'Arsenal, Maison Rouge, Galerie Nationale du Jeu de Paume), Tours (CCC), Lyon (IAC) and Marseille (FRAC PACA, Panorama de la Friche Belle de Mai); in Amsterdam (FOAM), New York (Gagosian gallery), in Slovenia (Maribor Museum of Contemporary Art) and in Sydney (Biennale de Media Architecture). She holds a PhD in Arts and Arts sciences, and is a teacher/researcher in contemporary art at ENSA-M (École Nationale Supérieure d'Architecture de Marseille).

Peter Macapia

Peter Macapia (1966) lives and works in New York. His work, which he developed in his studio LABDORA (Design Office for Research and Architecture, NY), is situated at the crossroad between art, architecture and computational and mathematical research. He has exhibited widely (*L'architecture au-delà des formes*, Marseille, 2007; Pavillon Seroussi, AA School, London, 2007; Maison Rouge, Paris; *Scripted by purpose*, Philadelphia, 2007; *Swarm*, New York and Chicago, 2009; *Ship of Theseus*, Londres, 2009; *Birth of Physics*, New York, 2010; *Search:___*, New York, 2011; *Geddes International, Past Futures*, Storefront for Art and Architecture, New York, 2012; *The Small Where*, Opus Projects Space, New York, 2013; *Allies I*, Priveekollektie, London, 2017) and published numerous articles and essays investigating the philosophical and epistemological conditions of the project.

Maria Smigieslka

Maria Smigieslka (1983, Pila) lives and works in Zürich. An architect, designer and independent researcher, working at the crossroad of architecture, art and technology, she explores varied computational design and develops robotic processes for fabrication, and in relation with machine learning. She currently runs the research at Creative Robotics Lab at the University for Arts and Design, Linz (Austria) and has previously collaborated with design studios (Baierbischofberger Architects), academic laboratories (ETH) and independent structures (The Object). Her work has recently been exhibited in Tallinn (Tallinn Architecture Biennale, 2017) and presented in Paris (Design Modelling Symposium, 2017).

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Du mercredi au samedi : 12h-19h
Nocturne jusqu'à 20h
chaque 1^{er} jeudi du mois