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LAB[au] The generative art of metadesign

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Installations which fulfill the evolutionary identity of cybernetics are not simply interactive, but defined by multiple parameters that produce random combinatory rules from their interactivity, and achieve a particular kind of dynamic symbiosis with their environment. With complex fields of patterning arising from this causal relationship between work and context, each project is a system with goals. It participates in circular, causal chains moving from action to sensing, to comparison with desired goal, to action and a changed state of being, both on the part of the participant and the work, since all information systems are linked to each other.

Founded in Brussels in 1997 by architects Manuel Abendroth, Jerome Decock, Alexandre Pennevaux and Els Vermang, the Belgian studio Lab[au] is a leading proponent of cybernetic projects in public places. This Flemish, French and German team has also been running its own digital design gallery, MediaRuimte, in the city since 2003, and shown works all over the world. At home, they captured the headlines locally for their bold interactive graphics of the 145 metre high Dexia Tower, and the impact of this 'urban sign' has since been matched by more complex work including a series of kinetic walls in different locations.

'Who's Afraid of Red, Green and Blue' (RGB), a generative art series (2007-8), rendering the Tower as a collective sign animated by a geometric expression of the progression of time from sunset to sunrise. From noon to midnight, colour was added; after midnight, a white pulse signalled the new day, and colour was progressively subtracted. Its 4200 windows were individually lit by RGB-led bars, referring to the additive RGB colour model in which red, green and blue are combined in various ways to reproduce other colours. Touch, one of the programmes, used a touch screen and a projection screen for the public input of touch and gesture, triggering the language of points, lines and surfaces. Crono was an extrapolated series of 24 prints each representing an hour set up in the [DAM] Gallery in Berlin, together with nine Nintendos each representing a different time zone in the world.



LAB[au]: flux, binary waves, 2008, St Denis, Paris

The title also refers to the 1950s series of artworks by American artist Barnett Newman, 'Who's Afraid of Red, Yellow and Blue'. The concept of relating light to time introduces the notion of circadian distortion, the 24 hour cycle in the physiological processes of living beings. Artist Philippe Rahm has described this cycle as now speeded up by the internet and mobility, rendering permanent day. LAB[au] work counters that blurring impulse towards homogeneity. Els Vermang, partner in Lab[au], calls what they do 'a traditional transcription of a parametric approach, while trying to skip a technological determinism'.



LAB[au]: flux, binary waves, 2008, St Denis, Paris

FLUX, binary waves was commissioned by the art organisation Synesthésie an outdoor site in St. Denis, one of Paris' roughest areas for three months from September 2008. The site, on the banks of the canal is aptly named Confluence: here the canal joins the Seine, and train and bus stations meet, and the project is driven by its contextual parameters of infrastructure and water and its behaviour. A kinetic wall made up of 32 rotating, luminous panels placed every 3 metres which rotate around their vertical axis, controlled by microprocessors. These are connected to infrared sensors which capture the ambient flows of passengers and cars, and electromagnetic fields produced by mobile phones and radios. These are measured and transposed into luminous, sonic and kinetic rules.



LAB[au]: flux, binary waves, 2008, St Denis, Paris

Each impulse is transmitted from one panel to another, in line with the kinetic principle of waves rolling from one side to another, bounces back again, progressively losing the force of their oscillation. One side of panels is black mirror; the other matt aluminium, with bright LED lights on each side, making the kinetic nature of the work unmistakable, and creating the reception and transmission of signals in a barcode-like form. Their reflective, light absorbent finish extends the visual play to a dance with the water. At night the work is animated by the use of the red and white LED lights, adding a bi-chromatic dimension. 'Several captured signals can lead to the superimposition of waves forming more complex patterns', explains Vermang. These create textures not directly reflecting the rhythm of activity in the area at that moment.

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Lab[au]'s rewriting of data flows promotes coding as an artistic and architectural project. They chose the binary code, a conventional part of many communication and information transmission systems such as the Morse code or any information processing device such as a computer. The creative use of binary states which gives installations of this kind such a strong resonance of complex patterning refers to the aesthetics and logics of digital technologies. In their advocacy of metadesign, merging of a digital language with a spatial construct, Lab[au]'s work echoes that of earlier cybernetic art and specifically the work of the French interactive architect Nicolas Schöffer who created speculative installations for a number of prominent sites along the River Seine during the 1950s.



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The term 'confluence' is doubly significant in relation to fLUX, for it denotes the transformation of syntax objects (for example, words, terms, graphs) according to fixed, predefined rules. LAB[au] characterise the urban context as a fluid state made up of micro events - an information and exchange system with its sender, receiver and channel. This is manifested via the analogy the work makes between wave propagation and the programming of the rotation. As such, it powerfully promotes the concept of rhythmic waves inscribing single urban events into a collective pattern, one that addresses the principle of flows in the city with distinct echoes of Toyo Ito's earlier (1986) Tower of Winds in Yokohama.



Who's afraid of Red, Green and Blue, Dexia Tower, Brussels, 2008

Another kinetic wall, f53, is also an homage to Schöffer's work and continuation of his groundbreaking approach. First shown at Superflux in Lyon in 2007 and in 'What a Wonderful World', the glass pavilion designed by Bernard Tschumi in Groningen, it was put on show at the Palace of Fine Arts in Brussels in June 2009 as part of a prestigious Belgian art award Lab[au] have been nominated for. Like fLUX, it is also a programmed 'lumino-kinetic' device, this time in the form of a 2 metre high screen of 40 x 40 cm aluminium modules with servo motors. These adjust the position of the screen and enable an infra-red sensing of its surroundings. It has different operating modes: using its vocabulary of light, colour, sound and kinetic elements, its 'binary' states are configurable between a display, a generative and an interactive operative mode.



Who's afraid of Red, Green and Blue, Dexia Tower, Brussels, 2008

LAB[au] have also developed a second phase of the project in which scripts of a variety of independent behaviours can be implemented. Moreover, Vermang emphasises that, like all their works, Frameworks, has the potential for an architectural as well as an art output. It could be implemented as a sculpture, modular scenographic structure or as a prototype of an integrated architectural element, for instance, as a second skin for a façade. It operates as a light filter during the day based on the kinetic principle of alternating black and white, open and closed elements, while at night it is animated by its changing light.

The architects also favour wholly pre-fabricated solutions, regarding the notion of the 'gesamtkunstwerk' as only fulfilled if elements are not outsourced. Their digital craft - for that is what it is - representing a hands-on mastery of code and process, is consciously inscribed in a historical tradition.



Who's afraid of Red, Green and Blue, Dexia Tower, Brussels, 2008

Lab[au]'s dual architecture and programming strategies define f53 as an open file structure containing various sets of behaviours but also a spatial modular, configurable structure. Vermang regards its random mode as the most beautiful to experience. This is perhaps because it is the programme that is most truly cybernetic. 'People will try to understand patterns but with random patterns, they are more directly confronted with the reality of the world'.

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