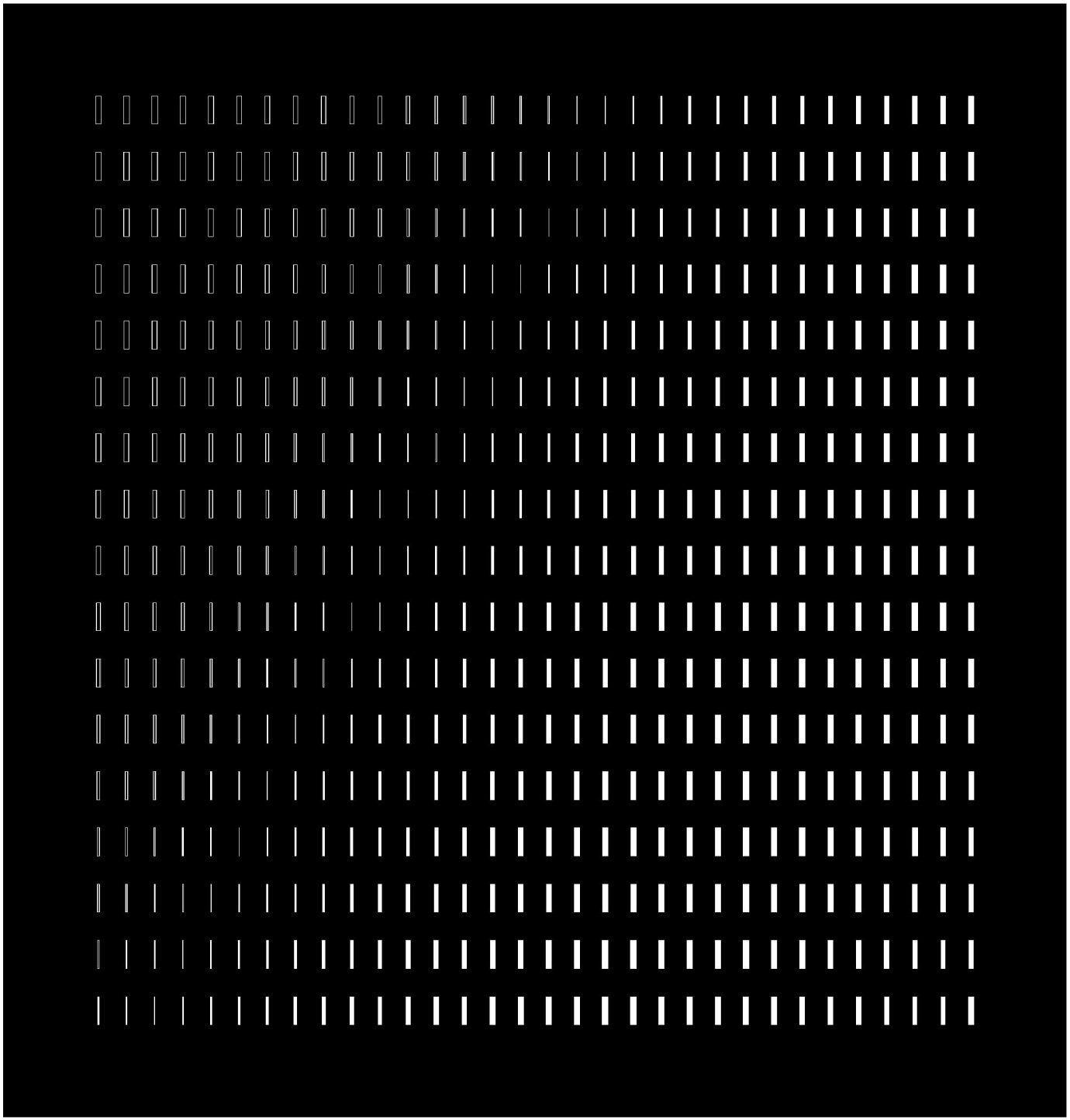
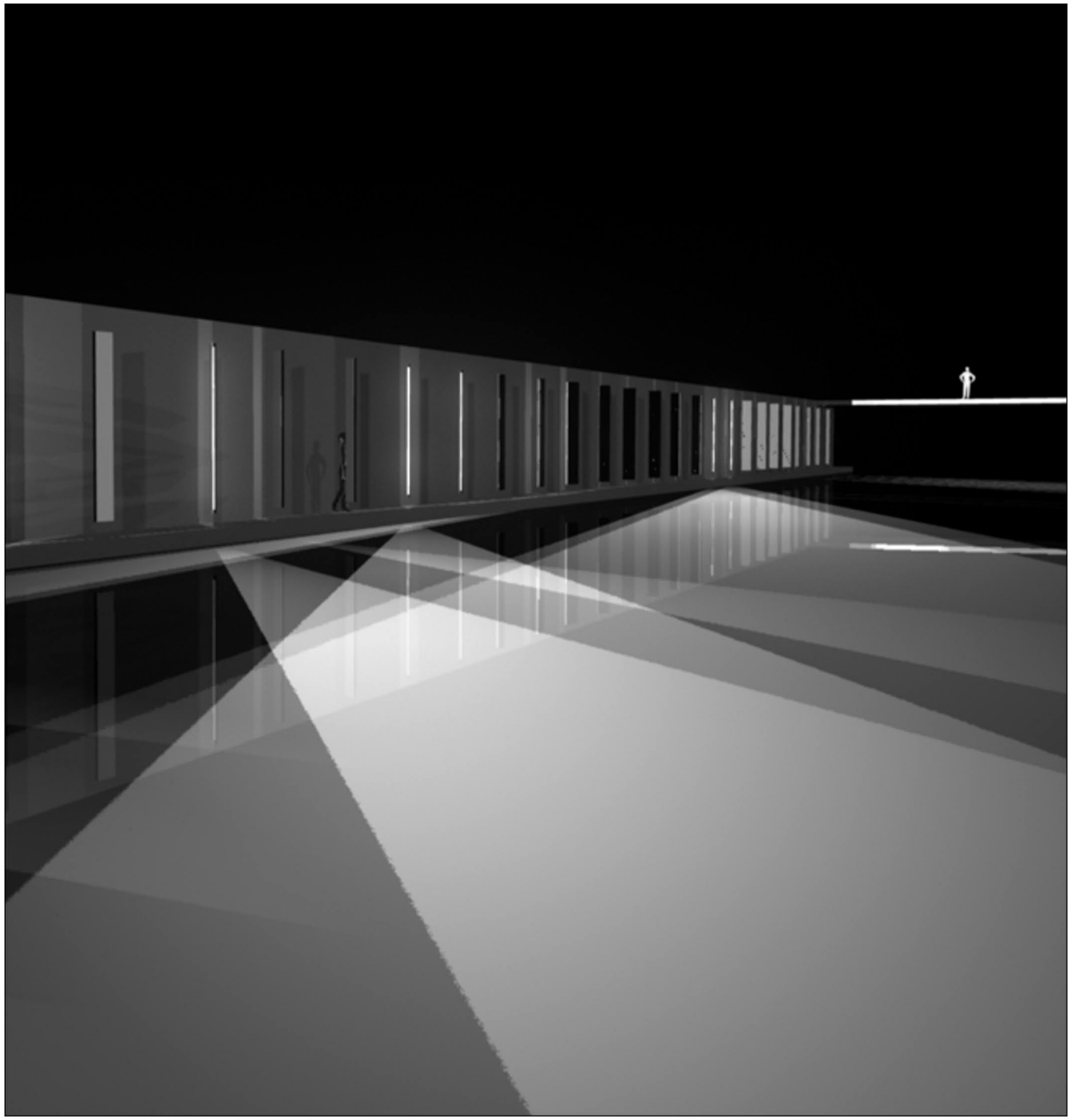
fLUX, Binary Waves

an urban cybernetic installation



fLUX, Binary Waves is an urban and cybernetic installation based on the measuring of infrastructural (passengers, cars...) and communicational (electro-magnetic fields produced by mobile phones, radio...) flows and their transposition into luminous, sonic and kinetic rules. This relation between the installation and the urban activity happens in real time and sets each person as an element of the installation, as a centre of the public realm.



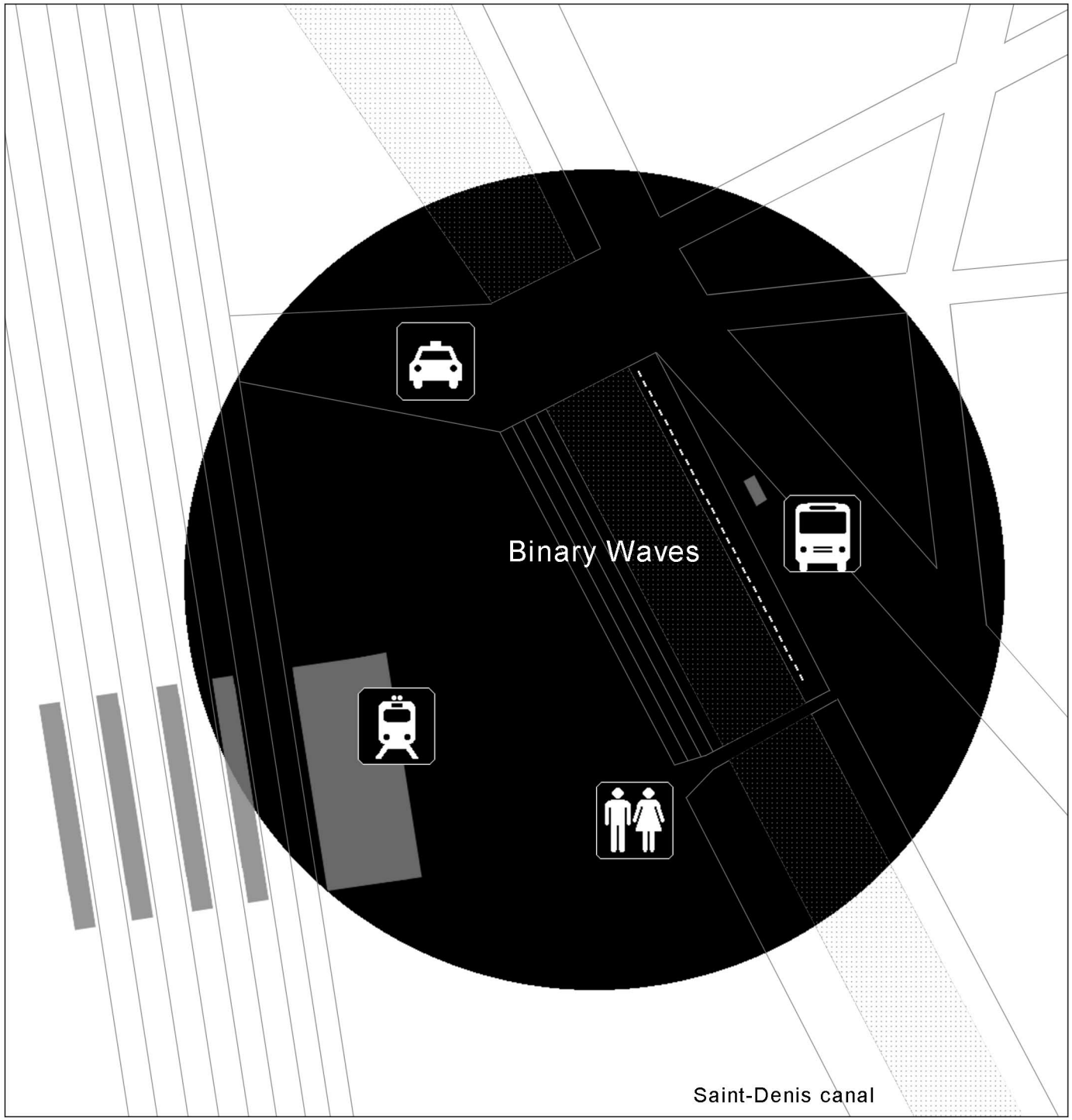
Context:

The installation *fLUX, Binary Waves* is conceived and realised by the Belgian artist group LAb[au] and is produced by the French art organisation Synesthesie, in the context of the Art Grandeur Nature 2008 biennial. The installation invests the area of the Saint-Denis train station (a northern region of Paris), used by an average 60.000 commuters each day.

More specifically, it is located on the banks of the Saint-Denis canal below the train station, framed by two bridges (a pedestrian and a transport bridge) and leaning back on a bus station. The place of the train station opens up to the canal by descending large steps, forming a tribune, an open stage facing the urban scene constituted of the canal, the two bridges and the bus-station.

The area is also known under the name of 'Confluence', a place where the Saint-Denis canal joins the river 'La Seine', where train, car, public transport lines and river traffic entangle and where different cultures intermingle. While the French word 'confluence' reflects these characteristics; it also endorses a specific meaning in computer science, giving an advanced understanding of the proposal. The term of 'confluence' describes a property of an 'interpretation' system employed in fields such as mathematics and linguistics. It implies the transformation of syntax objects (words, terms, graphs…) according to fixed predefined rules. In the case of the project the term 'confluence' refers to the process of rendering the infrastructural and communicational flows of an area in light, sound and kinetic instructions according to a predefined set of rules.

The project thus investigates the urban scenic space to generate out of its flows a cybernetic play, a play of confluence.



Description:

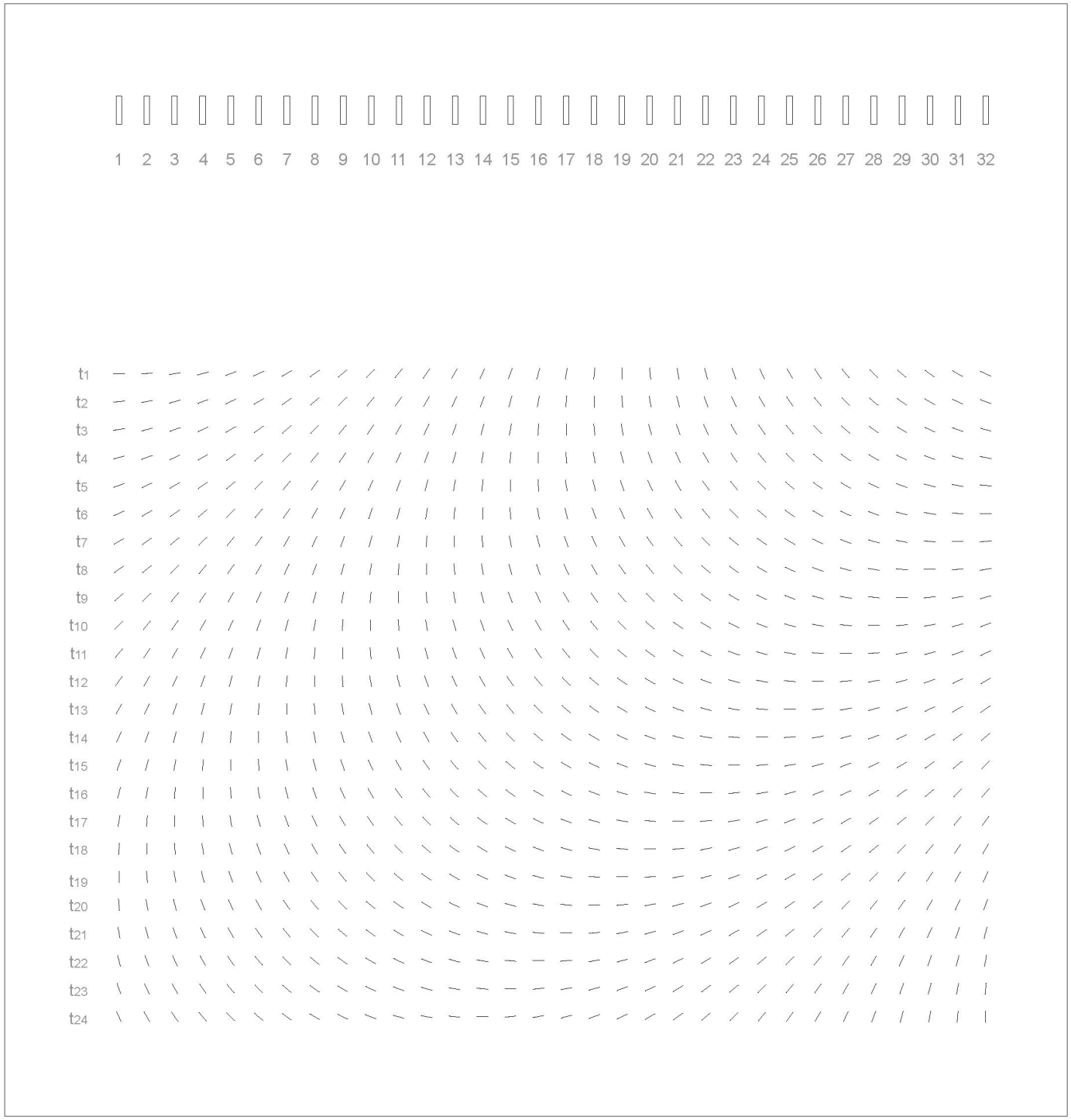
The installation *fLUX, Binary Waves* is constituted by a network of 32 rotating and luminous panels of 3 meter-high and 60 centimetres wide, placed every 3 meters to form a kinetic wall.

The panels rotate around their vertical axis, and have a black reflective surface on one side, the other being plain mat white.

Their rotation is controlled by microprocessors, allowing to determine precisely the rotation speed and angle, while their networking allows to synchronise the movement of the 32 panels. The microprocessors are connected to infrared sensors, capturing the surrounding infrastructural flows, defining the frequency and amplitude of the rotation.

According to this set up, each impulse is transmitted from one panel to the other, describing visual waves running from one side of the installation to the other, and then bouncing back while progressively loosing oscillation. Several captured signals can lead to the superposition of waves forming more complex patterns, resulting rather in textures than clearly identifiable motives that mainly reflect the rhythm of activity in the area at this very moment.

The kinetic principle driving the installation is derived from wave propagation in water, which, because of the proximity with the canal, is one of the project's major contextual parameters. This analogy between wave propagation and the programming of the panel's rotation behaviour, is founded in the characterisation of the urban context as a fluid state constituted of micro events. As such the installation is based on the concept of rhythm inscribing single urban events into a collective pattern addressing the principle of flows.



From flux to f.LUX

In order to underline the two major principles driving the installation - the measuring and propagation of urban flows - the panels are illuminated by two different colours, depending on the type of input received; the red lights, illuminating one side of the panel by 8 horizontal lines, display the electromagnetic fields of the area whereas the white light, illuminating the edges of the panels, reflects the frequency of people, cars… passing by.

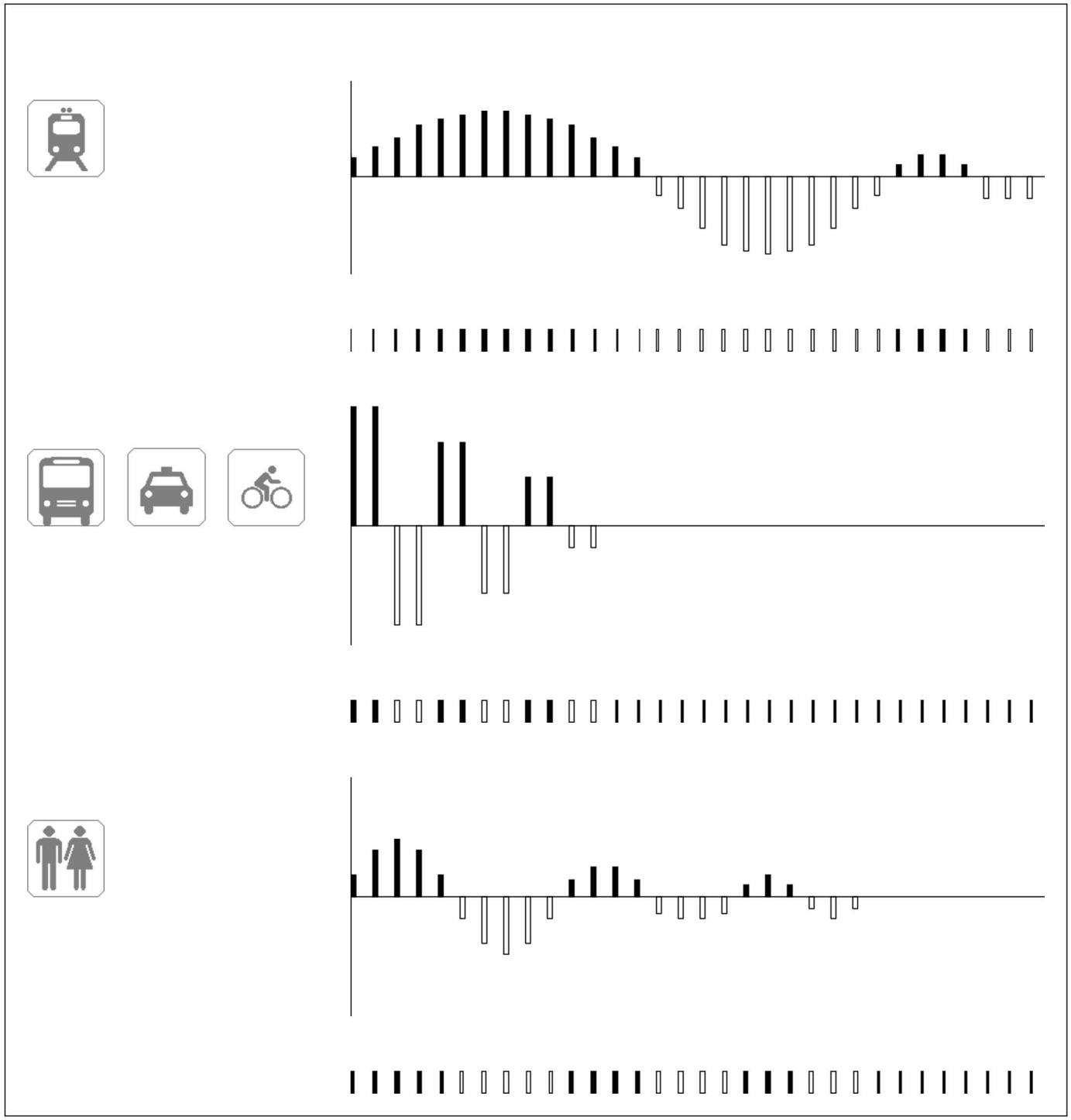
The intensity and frequency of light signals is varying according to the amount of traffic and the wave strength of the surrounding electromagnetic fields.

In this manner, light reinforces the kinetic principle of the panels, while qualifying the different inputs in slow flows, such as passengers provoking a decelerating rotation but with long amplitude and many panels enlightened, or fast flows such as cars leading to accelerate rotation but with small amplitude and fewer panels enlightened.

This kinetic and illumination vocabulary is based on the parameter of time (duration = repercussion of a signal over the 32 panels), speed (force of impulse) and the sense of rotation. These parametric settings of light in correspondence to the urban flows lead to the following formulation: from flux to fLUX, lux designating the intensity of light.

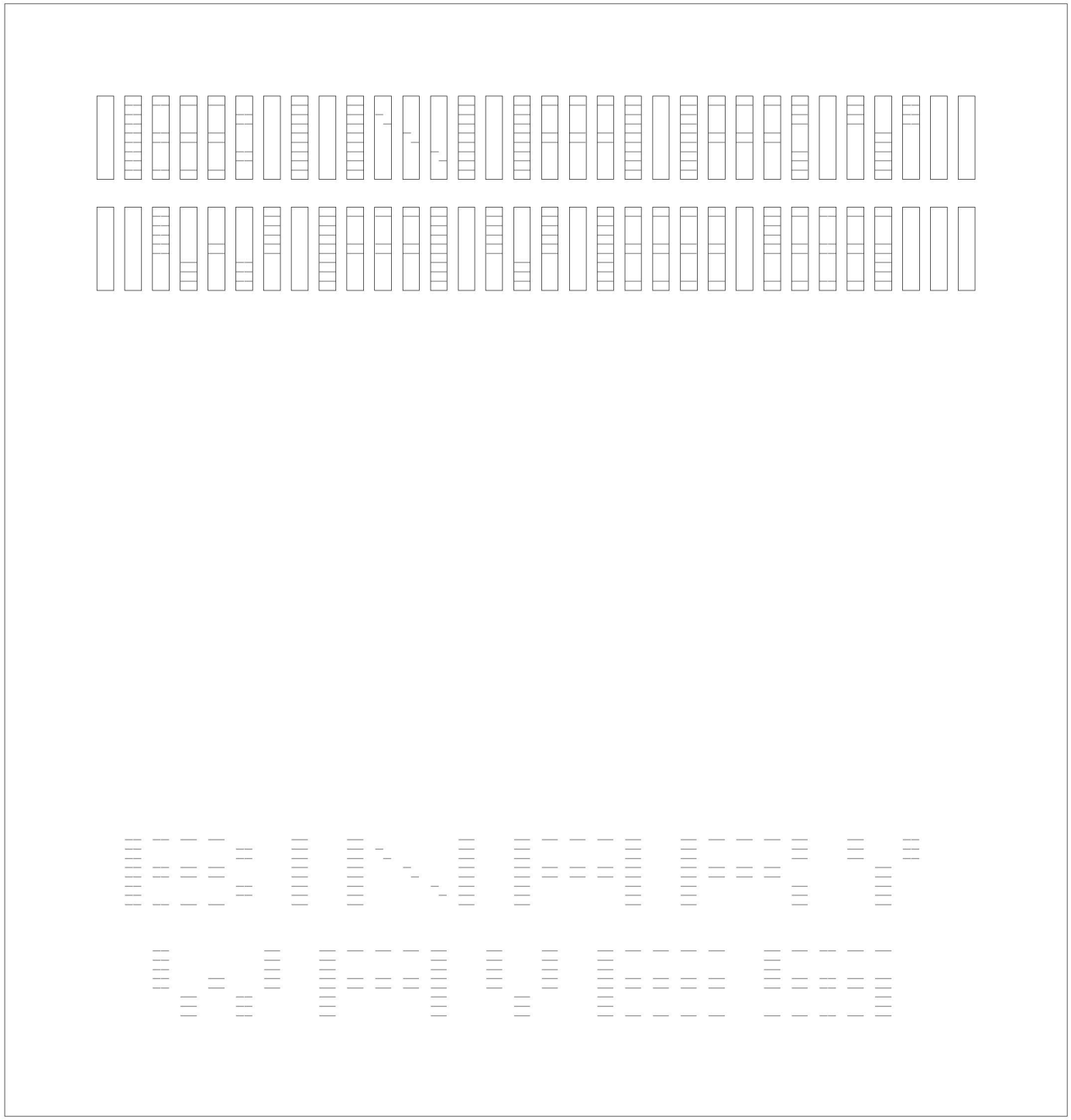
Given the individual control of the horizontal red lights, the reactive setting of the installation can be exploited as a display with a resolution of 32 (number of panels) by 8 (number of horizontal lines by panel) allowing to introduce graphical light sequences to amplify the rhythmic principle of the installation.

Furthermore, each captured signal is related to a sound reinforcing the perception of the circulation frequency and leading to a soundscape. All these principles relate the ‘micro-events’ happening in the area to a unified play of light, colours and sounds directly derived from the rhythm of the city flows.



The city as information, the binary language

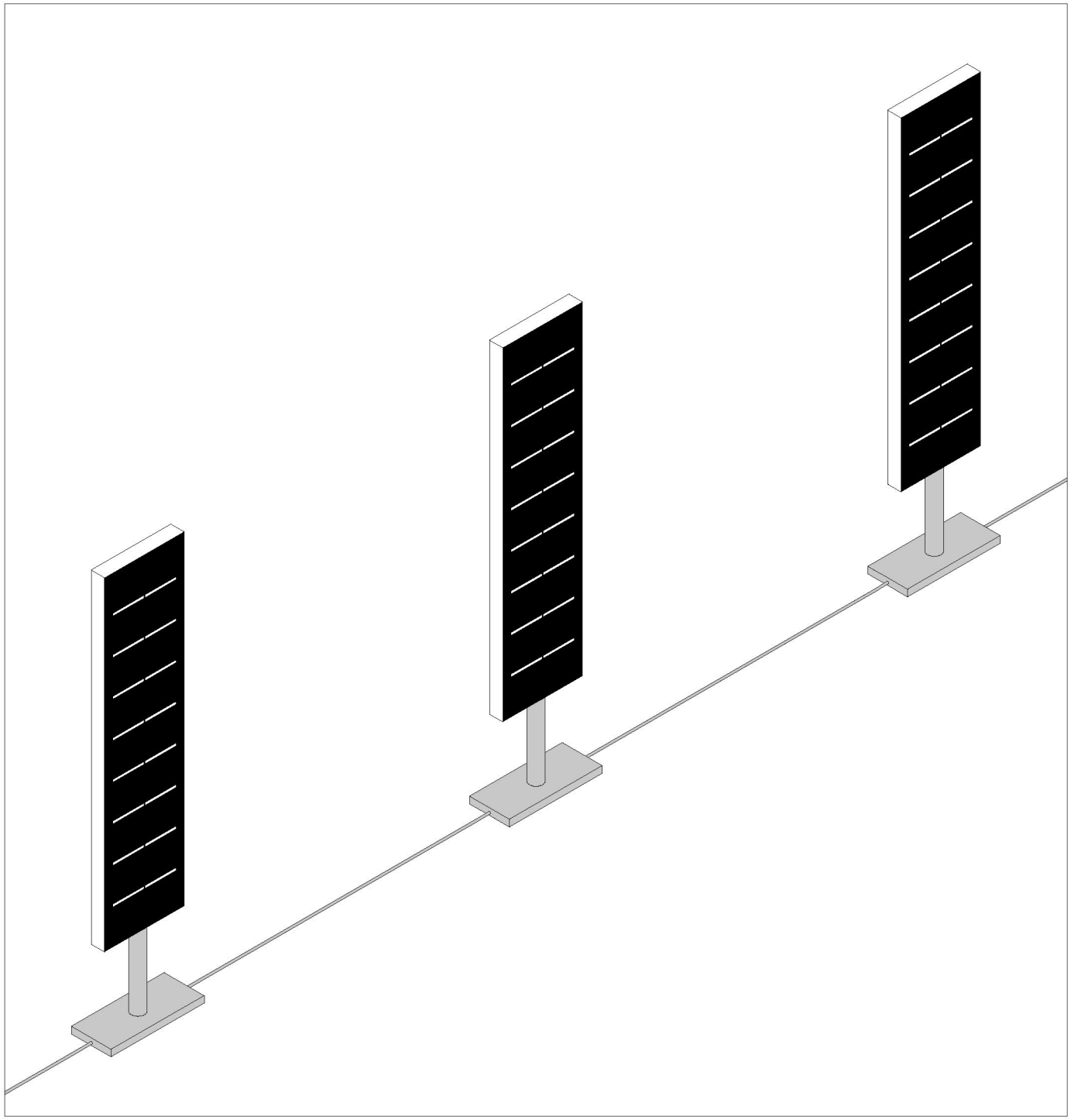
The conception of the *fLUX, Binary Waves* installation is the programming of a system determined by its inputs and outputs and the manner in which these data flows are rendered into luminous, sonic and kinetic information. This interpretation, ‘rewriting’ implies an active manipulation of data: coding as artistic and architectural practice. From this point of view the reactive design of the system is based on an exchange with its context, a communication. But every communication relies on a minimum set of rules to take place. Therefore when conceiving the *‘fLUX, binary waves’* installation it was crucial that the translation of data into luminous, sonic and kinetic information form an intelligible language. The binary code has been chosen for this reason, as it is a convention to many communication and information transmission systems such as the Morse code, the telegraph or any information processing device such as a computer.



The conception of the *fLUX, Binary Waves* installation takes these conventions into account, be it on the level of the reactivity programming or on its overall realisation. The 32 panels have a white and a black side reinforcing the visibility of the kinetic principle creating alternating optical effects during the day, displaying the reception and transmission of signals in a barcode-like form. Following the same logic, the panels are finished with reflective and light absorbent materials, adding to the black/white kinetic principle a visual play of an alternative perception of the panels as reflected in the water and the water reflected in the panels. In the night this play is achieved by the use of red and white LED adding a bi-chromatic state in the switching on/off the lights.

In this manner each captured signal has a specific interpretation in the setting of the installation by following a binary logic. This code derived from communication further influences the sound treatment, where each type of captured signal leads to a corresponding sound forming an acoustic scape close to the one of Morse. By following this binary logic the installation eventually describes the urban context as an information and exchange system, a communication system having its sender, receiver and channel.

This parametric setting, based on the binary logic, is the main construct of the installation. It proposes a new vision of the relation between the citizen and the public space, thus respecting a cybernetic rule according to which each person plays a constituting part in the public realm. Following this conviction, the installation proposes an urban sign having as subject the ‘urban’ and as message to be a catalyst of urbanity via the transcription of urban flows in a contemporary play of kinetics, lights and sound.



Credits:

Artists:
LAb[au]
laboratory for **a**rchitecture and **u**rbanism
http://www.lab-au.com

Producers:
Synesthesie
http://www.synesthesie.com

Context:
Biennale Art Grandeur Nature 2008
http://www.art-grandeur-nature.com

Place:
Saint Denis, Paris _ RER D station

Timing:
19th of September 2008 - 19th of October 2008

Press conference:
Thursday the 18th of September

Exhibition-opening:
Tuesday the 23th of September

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