

## The Nemesis Machine - From Metropolis to Megalopolis to Ecumenopolis



The Nemesis Machine. This city governs itself and its actions, and the intelligence is completely controlled by the data interactions of the system. The different 'districts' of the artwork act as a frame for the different expressions of data which in effect make up a connected city. It includes facial recognition, local sensors, IOT smart city networks, surveillance cameras, a news feed, Twitter feed, WIFI scanning and machine learning API system tracking change in global pollution data. Utopian or Dystopian? This is the largest and most complex art city the artist has made to date which is custom-built for each location. You see a large spectacular installation made of hundreds of custom electronics parts and computer parts built into a city. This is an audience engaging multi-layered digital experience of the modern world and includes:- overlaying smart city IoT networks which change and affect in real time the lights and motors, so that the whole installation is actually a hugely impactful responsive smart city data visualisation.

There are screens showing the data sets and data feeds from the connected networks of mesh sensors. There are several towers which are customised to show live surveillance and camera feeds of people inside the space as well as another software showing the wider context of networked surveillance from 300 cameras in London. Other layered systems available include a unique phone APP called Velocity that allows the installation to track people walking which then visualises this data and incorporates this into a participatory system while demonstrating the possibilities of shared open and collaborative data in an ethical and responsible way.

# THE NEMESIS MACHINE: DISTRICTS

In this version there are lots of interlocking systems.

The Nemesis Machine - Authenticity - University- Authenticity - Omnicity - Complicity - Velocity



**The Nemesis Machine.** How does it feel to be part of the real time flow of a global system? What happens when we mix data typed across the landscape? Internet of Things (IoT) mesh sensor networks – responds to environmental data activity, which is merged together to represent a world full of data. The sensors located in London include light, temperature, noise, sound and humidity to create what Stanza calls panoptic aesthetics.

**Authenticity.** Another separate local sensor network in the room uses a custom made sensor system to measure air quality and pollution including NO<sub>2</sub>, CO<sub>2</sub>, O<sub>2</sub> and alcohol. These are the types of general air pollution and car pollution used for urban air quality measurement. *(This reacts to local data at your location and also triggers parts of the main installation)*

**Omnicity.** We live in a world of continual surveillance. How are we complicit in this dialogue? A network of wireless cameras show live surveillance feeds of people inside the space onto mini screens. This network of micro cameras captures the visiting audience inside the space and around the installation in real-time, embedding this visual information back into the artwork/installation to involve us all as temporary participants / citizens engaging with the installation. *(A 5g facial tracking system with four cameras and four screens tracking people at your location)*

**Complicity. (Urban Generation)** Screens embedded into the cityscape stream live traffic feeds. Bespoke software re-works this information and adds an additional visual layer, creating a generative data visualisation of real-time city data. *(This is taking surveillance images from London)*

**Capacity.** The participatory experience is explored further in a dedicated skyscraper that integrates eight mini screens, which are gathering and displaying Twitter as scrolling text.

**Publicity.** The news and current affairs from the media shapes our understanding of the wider world yet we are bombarded with images of news and information streams that have created an infobesity as we struggle to remain connected. Images from online news and information sources are constantly fed to a small screen.

**University.** A custom data visualisation showing the collective flow of 80,000 temporary citizens.

**Velocity** <http://velocity.stanza.co.uk/>

Imagine if everyone was tracked in real time as they visited space. Open data from Stanza's brand new phone app is shared in real-time, allowing anyone to contribute and become involved in a huge collective participatory artwork inside the installation.

NB There can also be an extended sound layer of global city sounds which is created into a unique connected city interface merging sounds and maps from over fifty world's cities also built into the installation.

# DIGITAL ART EXPERIENCE.

The Nemesis Machine – From Metropolis to Megalopolis to Ecumenopolis is an ever evolving artwork, always different and always expanding. It has become a multi-layered installation incorporating concepts of data ownership, surveillance, real time space, urban environments as well as systems based metaphors for interactive and generative spaces. The artwork creates a tension that operates critically between utopian optimism and dystopian dysfunction.

The machine is both acting to liberate us through technology with overtures to open processes, while at the same time making us complicit in its restrictive system of control. We have by default become complicit in the global surveillance machine that appropriates us (the users) as units of data to be harvested for some sort of gain (either financial, social).

The artwork has grown as a multi-layered expression of technology based futures with metaphors of big data, privacy, liquid surveillance and control. It now also envelops as part of its evolution a continuous focus on the way we seek to control our space through any new technology.

What are the questions this art asks of the world? Underpinning this digital artwork, are a whole series of potential problems about observation, surveillance, and the ethics of the control space. Imagine walking out the door, and knowing every single action, movement, sound, micro movement, pulse, and thread of information is being tracked, monitored, stored, analysed, interpreted and logged. The Nemesis Machine is like Big Brother parsed through the lens of the Internet of things. It gives visitors a bird's eye view of a cybernetic cityscape, where skyscrapers are constructed of silicon and circuit boards.

The Nemesis Machine asks how new technologies can imagine a world where we are liberated and empowered, where finally all of the technology becomes more than a gimmick and starts to actually work for us. Or will these technologies as the machine suggests control us, separate us, divide us, create more borders as the machine spreads to encompass the whole world. This city governs itself and its actions and intelligence is completely controlled by data based on the interactions and flows of data.

Stanza is creating new metaphors relevant to the experience of the city and the environment. The patterns we make, the visual and imaginative interpretations we give to real world events, are already being networked into retrievable data structures that can be re-imagined and sourced for information. These patterns disclose new ways of seeing the world. The value of gathering and re-presenting this data in artistic form, and then analysing its impact and influence, lies in making meaning accessible to a wider audience.

**Conclusion. A Mini, Mechanical Metropolis Runs On Real-Time Urban Data.**

**The Nemesis Machine is now between 50 metres square and 100 metres square.** The artwork operates within the themes of the urban landscape, surveillance culture, privacy and the connected cities.

- Poses the question of who owns the data while speculating that virtual borders will soon create more systems of control.
- The artworks represent the crossroads and ethical dilemmas as machines and systems take over the world.
- The wireless sensor network is set up to "visualise" the space all around us as 'worlds' full of data across the internet.
- The artwork is an intelligent city, a hybrid internet of things (IoT) installation..
- It gives visitors a bird's eye view of a cybernetic cityscape, where skyscrapers are constructed of silicon and circuit boards.
- The avatar city is not only controlled by the real city in terms of its function and operation, but also utterly dependent upon it for its existence.
- The artwork is a mini, mechanical metropolis that monitors the behaviours, activities, and changing information of the world around us using networked devices and electronically transmitted information across the internet.

**Technology.** The installation makes use of wireless sensors, wireless scanning technologies, surveillance networks, facial tracking and big data. All this combines to create all the agency and action in the artwork. In other words the lights, motors, and sounds only happen because of events occurring in real space.

- A custom made multi mesh network of environmental sensors that send data in real time to the artwork.
- A camera-based surveillance with several hidden cameras inside the artwork.
- There is also another local layer of sensors; which includes systems for measuring by pollution gases no2, co2, o2, and alcohol.
- There are also several screens showing other types of city data.

## VIDEOS AND INFO

VIDEO 1 <https://vimeo.com/689673050> (with voice over explanation In France.)

VIDEO 2 <https://vimeo.com/339299723> (with voice over in Wales.)

VIDEO 3 <https://vimeo.com/160264876> (In Belgium)

VIDEO 4 <https://vimeo.com/237884023> (In Poland)

Website for project <http://stanza.co.uk/nemesis-machineweb/index.html>

STANZA

# ABOUT STANZA

Dr Stanza is an internationally recognised British artist, who has been exhibiting worldwide since 1984. His artworks have won twenty international art prizes and art awards including:- Vidalife 6.0 First Prize Spain. SeNef Grand Prix Korea. Videobrasil First Prize Brazil. Cynet Art First Prize Germany. Video Brazil First Prize. Share First Prize Winner Italy: His art has also been rewarded with a prestigious Nesta Dreamtime Award, an Arts Humanities Creative Fellowship and a Clarks bursary. Numerous commissions include work for Wolverhampton Art Gallery, Watermans Art Centre, FACT, and the Open Data Institute

His artworks have been exhibited with over one hundred exhibitions globally. Participating venues have included :- Venice Biennale: Victoria Albert Museum: Tate Britain: Mundo Urbano Madrid: Bruges Museum: TSSK Norway: State Museum, Novosibirsk: Biennale of Sydney: Museo Tamayo Arte Contemporáneo México: Plymouth Arts Centre: ICA London: Sao Paulo Biennale: De Markten Brussels: Transport Museum London: Ars Nova museum.

Stanza's artworks since the mid eighties have focused on the participatory system, the 'city' that frames questions within his work, opening up conversations about the politics of space. He creates investigations about the construction of space, the environment, and landscapes you cannot see. Selected artwork monitors the behaviours, activities, and changing information of the world around us, often using networked devices and information across the internet. This can include observation by means of custom made sensors, networked cameras and computers. Stanza reforms this information and data creating what he calls parallel realities.

Recurring themes throughout his career include the urban landscape, surveillance culture, privacy and alienation in the city. Stanza is interested in the patterns we leave behind as well as real time networked events that can be re-imagined and sourced for information. He uses multiple new technologies to create distances between real time multi-point perspectives that emphasise a new visual space. The purpose of this is to communicate feelings and emotions that we encounter daily which impact on our lives and which are outside our control. The results can be aesthetically beautiful maps of data or information such as personal interests, beliefs, and large scale installations representing weather, environmental, pollution and traffic data.

Online projects by Stanza include:- His main Netart archive ([www.stanza.co.uk/projects\\_netart.html](http://www.stanza.co.uk/projects_netart.html)) as well as [www.soundcities.com](http://www.soundcities.com) (The global soundmap project) . Other net art projects include [www.genomixer.com](http://www.genomixer.com) (DNA system artworks) [www.thecentralcity.co.uk](http://www.thecentralcity.co.uk) (urban and city systems) [www.amorphoscapes.co.uk](http://www.amorphoscapes.co.uk) (generative paintings) and [www.soundtoys.net](http://www.soundtoys.net) (online generative art portal).

Educated in art at Goldsmiths College in the early eighties he later went on to study at Greenwich University and Central Saint Martins Art College London. Stanza returned to Goldsmiths College as a AHRC arts research fellow. His mediums include; netart, paintings, videos, installations, software systems and public artworks.

[www.stanza.co.uk](http://www.stanza.co.uk)



Artist Name: Stanza ----- [[stanza@sublime.net](mailto:stanza@sublime.net)]