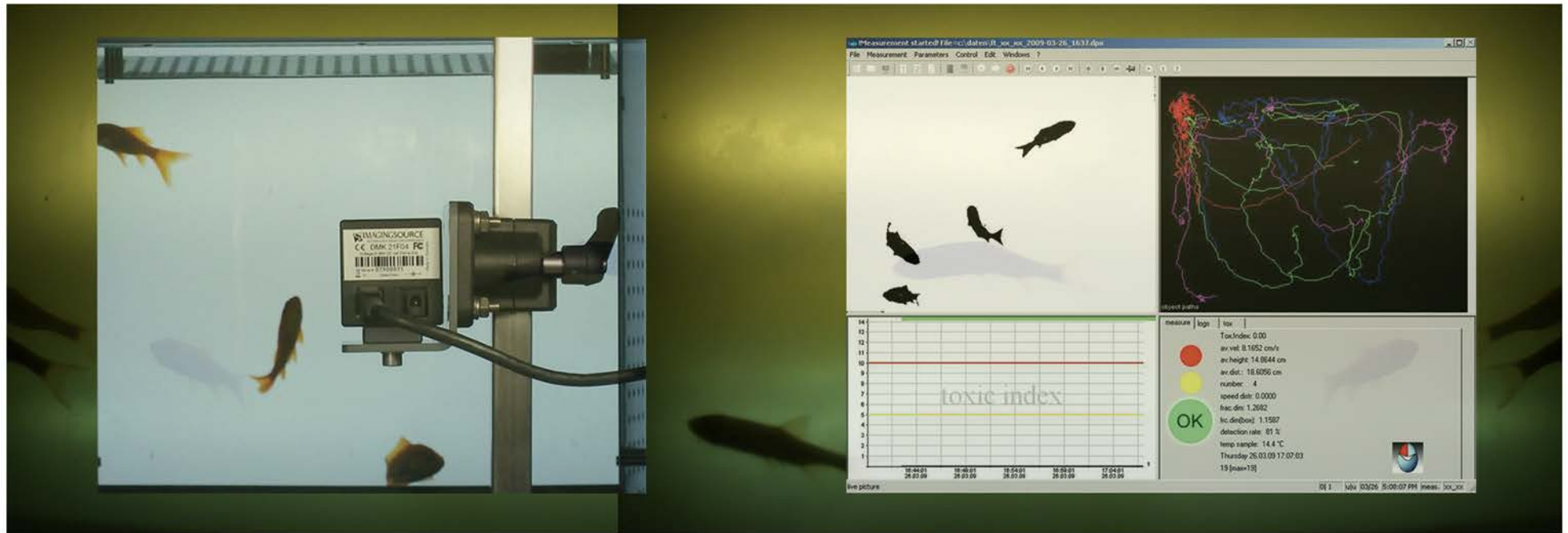# fishbag

## 2012 by Corinne Studer

# Art and Science

## out of the River Belly

'fishbag' uses water quality measuring results from a river, obtained by a biomonitoring system in order to control the course of an artistic visualisation in real time.

# Measuring water quality by using a 'Fish Toximeter'



Fish (e.g. 'Golden Orfen') are able to recognise changes in the water environment through their very sensitive sensory system and react accordingly with a measurable behavioural change. The behavioural patterns of fish can therefore be anaylsed scientifically by using the 'FishToximeter', a biomonitoring system produced by bbe Moldaenke GmbH, deployed to ascertain water quality in real time.

In this biomonitoring system fish are monitored by CCD-cameras in a chamber with constantly running fresh river water, in order to allow a real time computation of the physical behaviour changes. The measurable behaviour of the organism is taken as an indicator for water quality.

The measured reaction of fish
to changes in the water quality
are applied in 'fishbag'
to control the course
of an artistic visualisation of
usually hidden changes in the water.

# The data controls the programmed artistic visualisation



The river becomes a data stream, running into a symbolically shaped water sculpture on the land side and revitalising it.

The parameters analysed and the overall result are transferred as a data sheet to the application of 'fishbag' and become the controlling factors. In a kind of 'game of life', 'fishbag' reflects the water quality of the river:
For the programmed animation, substances in the water become symbolically shaped, floating 'water particles'. Depending on the particular measurements of the water quality, they change their pattern formation, velocity and colour. The fish are also shaped symbolically and react to the different patterns with different swimming behaviour. Their colour depends on the overall measured result. Also the color of the virtual water depends on the overall result.
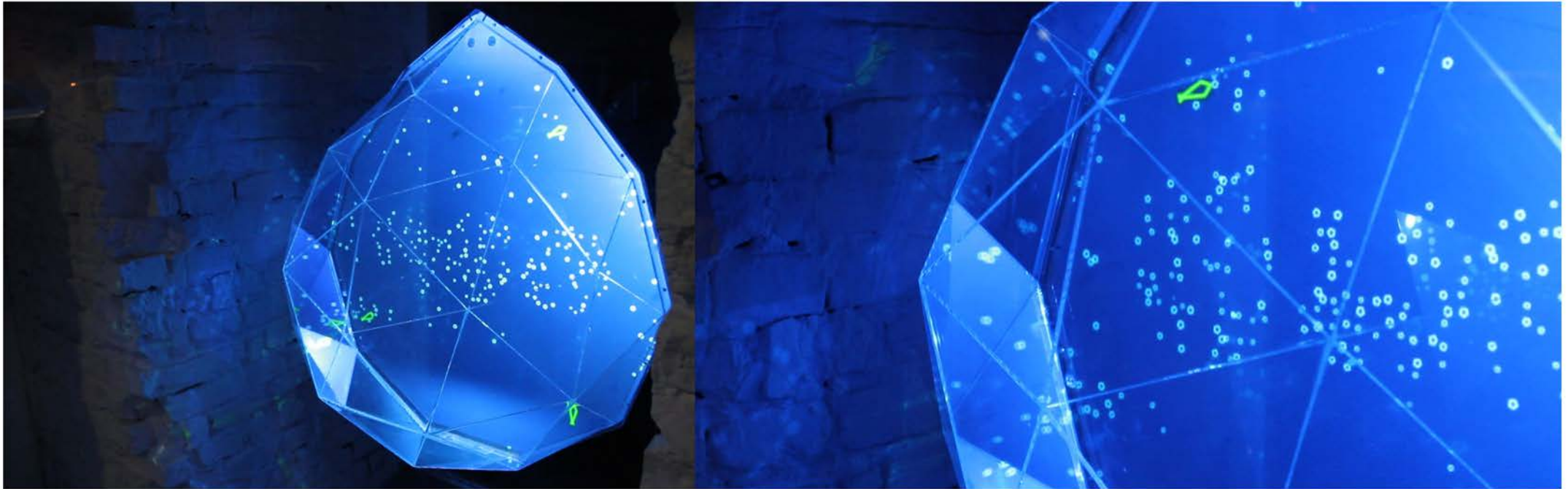
Finally the real-time data animation is projected into the water sculpture.

The City of Vienna analyses
the water quality of the Danube
using a 'Fish Toximeter' and is
providing 'fishbag' with real time
data for the duration of its exhibition.

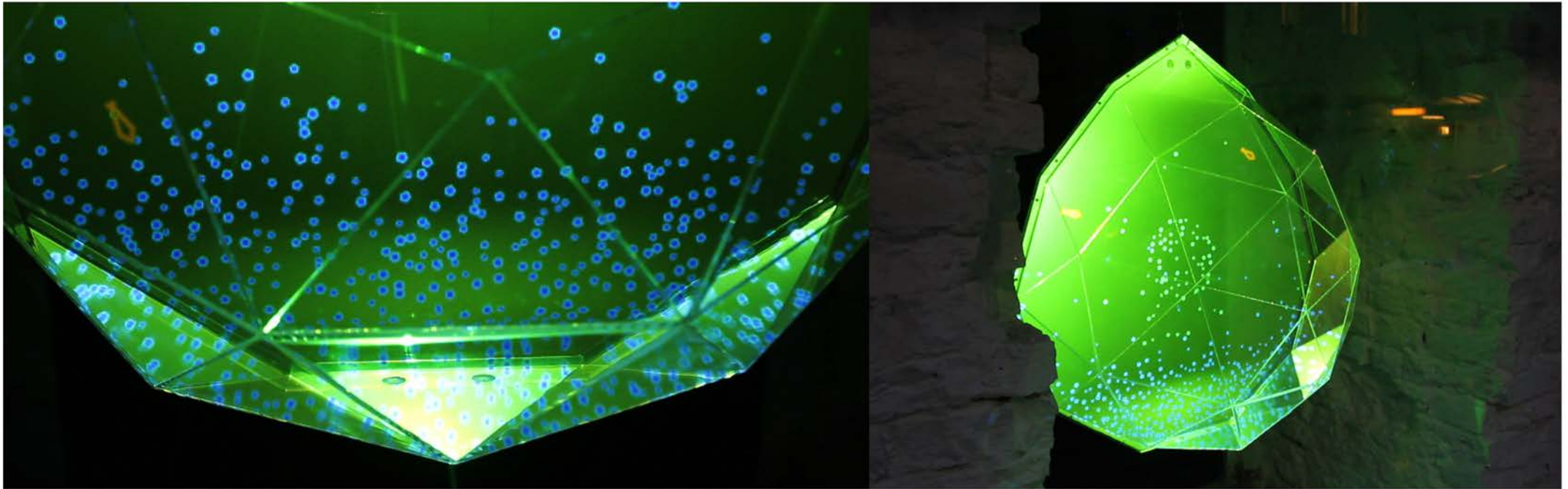Exhibition in Vienna, 11.5. - 29.6.2012
at Gallery Bildetage

# Good water quality



The 'good water particles' constantly float and form new patterns as in a 'game of life', symbolising the constant change of good substances in the water. The fish are green and move in a relaxed way through and around this pattern.

## Bad water quality



With increasingly poor water quality, some 'bad water particles' fall from the top and hit 'good water particles', which become 'infected' by them and break away form the 'game of life' pattern until this itself dies out. The fallen 'bad water particles' collect on the bottom of the drop, slowly filling it up and giving an impression of the increasing weight of the 'bad' substances. The fish, now orange, try to escape from the 'bad' substances and virbrate when they come too close to them.

# Alarming water quality
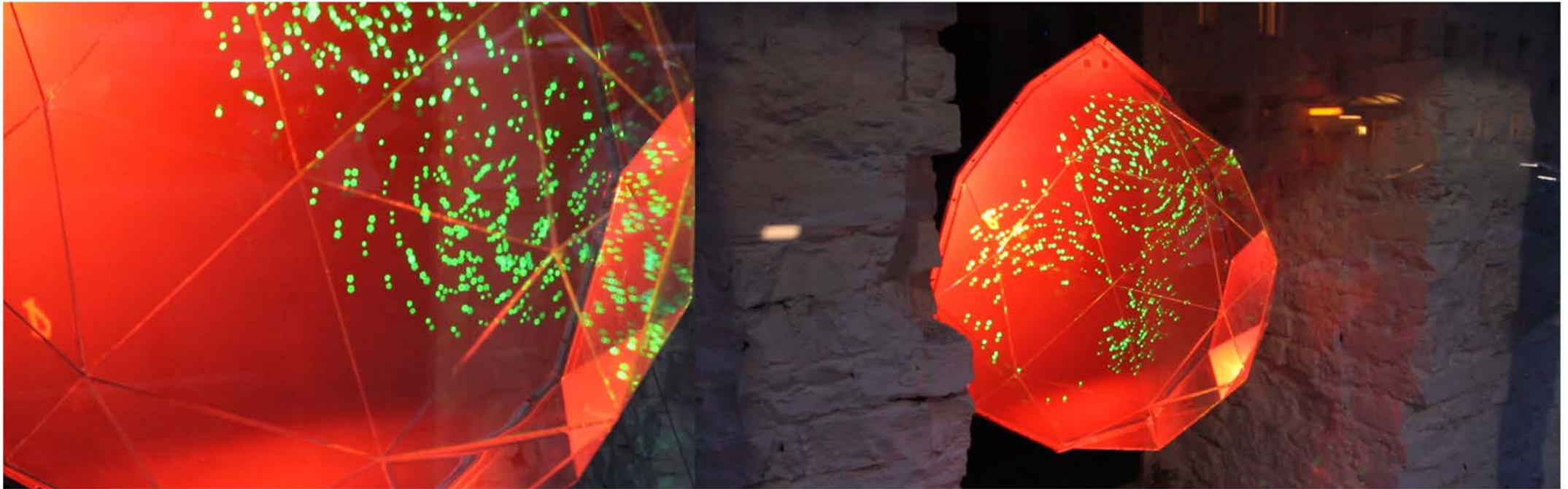


All the 'water particles' move in different swarms at high velocity through the whole drop – like a 'storm in a teacup'. The fish, now red, try to escape from these particle storms and most of them disappear.

Idea & Realisation: Corinne Studer (CH,AT)
Visualisation Programming: Peter Melchart (AT)
Additional Programming: Mario Wessely (AT)
Scientific Analysis Method: bbe Moldaenke GmbH (DE)
Danube Measurement: City of Vienna (AT)