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- [Planet](#)

COMMUNITY

Wearables for environment awareness

[Regine Debatty](#)

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[Sonic City](#), developed by a the [Viktoria Institute](#) and [RE:form](#) in Sweden, enables people to compose music in real time by walking through the city.

The system retrieves information about the environment and user action, and maps it to the audio processing of urban sounds, resulting in music heard through headphones.

Wearing a sensor-equipped [jacket](#), the person can create *a personal soundscape co-produced by physical movement, local activity, and urban ambiance. Encounters, events, architecture, (mis)behaviours all become means of interacting with or 'playing the city'*.



Other artists/researchers are working on wearable items that would enable users to have a new (albeit sometimes less playful) perception of the city.

In Miki Yui and Felix Hahn's [Acoustic Survival Kit](#), human stress caused by urban noise exposure is countered by sound-emitting devices embedded in clothes. Their garments emit subtle sounds that fuse with the sounds of the surrounding environment, protecting the wearer from overstimulation, and teasing the city dweller into communicating more actively with their environment.

[HearWear](#), developed by Younghui Kim and Milena Iossifova, is a skirt that reacts to urban noise with moving light patterns, enabling you to express your experience of the noise levels when wandering in the city.

The electronics are seamlessly integrated in the wearable design.

A sound recognition module is being driven by a micro-controller to perceive and qualify varying characteristics of noise patterns. The microcontroller is programmed to activate a number of LEDs and electroluminescent wire.

The system can be applied to any wearable items - be it skirt, bags, T-shirts, jackets, pants and belts.

A couple of years ago, Fionnuala Conway and Katherine Moriwaki created something similar: [Urban Chameleon](#) is comprised of 3 reactive skirts that influence and change perceptions of one's surroundings.

"Touch" changes visual properties upon contact. "Speak" reacts to urban noise, and "Breathe" visualizes pollution and urban exhaust as it travels through the garment.

On the accessory side, the [Reach](#) handbag, by Linda Worbin and Margot Jacobs, is the first prototype for a system which would allow people to monitor and visualize environmental data using different sensors. The bag changes patterns and colour according to its surrounding.

[Inside/Outside](#), a project started in 2002 by [Katherine Moriwaki](#) are bags which reflect environmental data on its surface and store a data diary of environmental exposure, creating a necessarily incomplete mapping of the city. There are currently two bags, one monitors ambient air quality, the other monitors environmental noise.

[Bio Mapping](#), a research project by Christian Nold, combines a custom built Galvanic Skin Response sensor with a GPS unit. The two data sources are logged simultaneously while the device is worn and later uploaded into a piece of custom built mapping software.

This proposed system will allow people to create noise or radiation pollution maps of their environment. People might for example want to take photographs of a polluting industry, geographically locate it and then demonstrate the amount of stress this causes to themselves as well as others in the vicinity.

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