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Synaesthetic architecture



Report

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- **Villa Linari, Hamburg**

- Architect: Thomas Dibelius, Dibelius Architekten, Hamburg
- Lighting and electrical design: Manfred Necker, Ralph Kolbinger, Sineplan, Hamburg
- Lighting control: Dirk Beyer, Ingenieurbüro Beyer, Neumünster
- Photos: Frieder Blickle, Hamburg

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- Place: Hamburg
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When we look at modern marketing approaches, stimulating preferably all five of the human senses, and with this, enabling perception on an emotional level, is an important goal. Architecture is also open to frequent and intelligent use of multi-sensory media in order to create an integrated spatial - experience. This is seen in the case of "Villa Linari" in Hamburg, where architecture, light and smell form a virtually symbiotic unit.

Sight, smell, taste, touch, hearing: Humans are entities gifted with five distinct and highly sensitive senses, yet the attention today - from architecture and design through to new media - is focussed primarily on visual appearance. Increasingly, however, architects are adopting principles from marketing specialists, that the world can be so much bigger and far more interesting if all our senses are indulged. Space, after all, can be perceived not by sight alone. Smell along with touch and sound determine our perception of space in equal measure. In actual fact, it is the non-visible factors first and foremost that influence us significantly on both an unconscious and an emotional level, maintains Rainer Diersche. In 2001, the designer and industrial engineer founded the company "Linari", which specialises in exclusively created, superior quality room fragrances.

Whilst designing his own home in Hamburg, not only did Diersche have very



He specifically installed a system that enables him to allocate a scent to each room, which, when combined with light and architecture, creates a multi-sensory room impression.

specific ideas as to the building's architecture, but also on how to gratify the senses inside the home through light and scent. "The fragrances which my company designs are highly purist in nature. I wanted this aspect reflected in my own home," says Diersche. "With this in mind, I looked for an architect who had the technical know-how, but also wished to contribute his own ideas." Rainer Diersche soon found the right person in Thomas Dibelius, owner of the Dibelius firm of architects in Hamburg. The partnership set about designing a two-floor cubic structure with a closed aspect to the street but opening up to the garden at the back through large glass façades. The interior is finished in white, with the ground floor devised as an open area where different zones converge seamlessly. "I wanted the rooms to be reduced formally to a minimum," explains Rainer Diersche. "Light and accessories were to be the main protagonists." Variable lighting, therefore, is provided by ERCO's Quintessence varychrome downlight and wallwasher solutions. The LED luminaires with RGBW colour mixing technology produce a wide spectrum of highly saturated coloured light ranging from pastel shades through to white light with excellent colour rendition.

We mustn't see the world only with open eyes; we must also keep our noses open

The primary function of the wallwashers is to deliver the impression of a self-illuminating open interior through vertical illuminance on the walls. A DALI-based lighting control system can play back pre-programmed light scenarios at the press of a button, but equally allows manual light adjustments as required. "Each room has the option of defining the light colour individually, by using a light switch or via smartphone and WLAN," says Diersche. Along with individual lighting solutions, he also had a system installed to dispense different scents in each room.

A Christmas scent in winter, for instance, or fruity, floral fragrances in the summer months. "Our perception of a room varies greatly, depending on the





“Light and accessories were to be the main protagonists here,” said Rainer Diersche. Reduced to a minimum, the interior is dynamically enhanced with lighting of variable colour.

scent,” explains Diersche. “There are so many ingredients that can change the impression. Scents can have a calming effect or can stimulate. At the end of the day, it is a question of whether the scent is right for the room or the room impression. Often, you don’t realise how important scent really is until there is an unpleasant smell in the room.”

Unconscious effect

The principle of multi-sensory stimulation is still rather uncommon in the home. Synaesthetic architecture is found primarily in hotels and shops or for temporary room installations. Often deployed in marketing

activities and events, the sector relies increasingly on psychological and neurological findings.

Consumer buying behaviour is not only influenced by the interior design, but also by mood lighting, scents and music. Neuroscientists use methods such as magnetic resonance therapy to find out what goes on in the brain during a buying decision. The results are clear: The decision only appears to be based on rational criteria – the actual impulse to buy is deliberated and triggered by emotions and moods. Whereas everything we perceive with our eyes is processed in a relatively conscious area of our brain, smell, taste and even our impression of mood lighting affect us on an emotional, often unconscious, level. In a bakery, for instance, we may well be aware that the smell of fresh bread is a deliberate marketing trick; nonetheless, it strikes us as pleasant and stimulates our appetite. Whether we like it or not, we are not in total control and such stimuli work. Because the nose is always active, even during sleep, it constantly sends information about different smells directly to specific centres in the brain where emotions and moods are processed.

“We mustn’t see the world only with open eyes; we must also keep our noses open,” says Professor Hanns Hatt. The holder of the chair of cell physiology at the Ruhr University of Bochum is considered a leading expert in smell research having discovered human olfactory receptors and unearthed the effects of smell on people. “I would advise anyone not only to look around when they enter a room, but also to ‘smell around’. It will open up to them an entirely new and unknown world, one which may not be visible, but which surrounds, and indeed influences, us nonetheless.” Prof. Hatt believes that the olfactory experience determines quite significantly the way in which we perceive a room, possibly more so than the room’s visual appearance. It is common knowledge nowadays that scents are closely associated with memories from our childhood. Vanilla or lavender can evoke in us that very first feeling of security, love and care, and of trust; these are then linked to the current situation – and so to the room or the product. The result is a positive emotional association which in most cases we are not even aware of. The use of scent, however, is quite a difficult affair. “It is a popular belief that ‘more is more’,” explains Prof. Hatt. “Quite the contrary, actually. Too high a concentration can sting the eyes and nose.”

The quality of the scent is also vital. “There are scents that are almost



Warm/cold contrast: Synaesthesia between lighting, materials and sense of temperature is used in the wellness area. Despite its transparent walls, the sauna is set off from the wet area on several sensory levels.

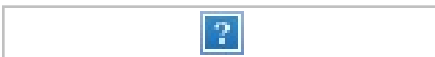
exclusively made of cheap solvents, mixed with small amounts of synthetic fragrances. Besides our olfactory system, these also stimulate the trigeminal nerve, which carries sensations from the face to the brain, causing headaches and nausea.” For a positive effect, the scientist advises using predominantly high-quality scents made from pure essential oils, in a low concentration just above our threshold of perception.

Multi-sensory interior design - skill and art united

In the field of interior design, multi-sensory media can be used specifically as harmonised elements of synaesthetic architecture, thereby generating a consciously intensive room experience which helps to achieve a sense of all-round wellbeing. The term “synaesthesia” actually comes from the realm of

psychology and refers to an alteration of perception in which sensory stimuli are combined in uncommon ways, making one believe, for instance, that we can taste colour or see music and smells. This same perception can also be triggered through intelligent combination of multi-sensory media in synaesthetic room concepts – here, however, as a conscious, sensuous experience. Not all senses are stimulated to the same degree, of course. It is the mixture and intensity that matters. In the ideal scenario, colour, shape, light, touch, material, sound and smell blend in optimum combination. This is a great skill that is hard to master. Various factors can influence the result of playing with the senses in the exact opposite direction. Each person, for example, has their very own “smell history” shaped individually by their experiences. We associate some smells with pleasant situations, but even supposedly nice smells can appear unpleasant to some people, depending on what they associate them with.

Equally counterproductive are contradictory perceptions of two senses. Upon seeing PVC flooring with a realistic oak look, for example, our visual nerves suggest “wooden floor”. We can feel the difference, however, once we step on it: it yields without producing the anticipated sound of walking on wood and therefore the user unconsciously feels “betrayed”. This has also been confirmed in studies at the Max Planck Institute of Biological Cybernetics in Tübingen. Researchers here found that the brain forms a sensory “image” based on a number of sensations. If this is inconsistent across the different senses, these “incorrect” images are excluded, in other words, they are identified as untrue. A democratic decision of the senses, in a manner of speaking, in which the visual nerve often loses out to our more unconscious senses.



Intensive experiences are remembered

What these insights mean for architecture is best illustrated by temporary structures such as trade fair stands. Multi-sensory media here have, until now, been used primarily as an element of interior design. An example of a successful synaesthetic concept is the stand which the Interior Design Department at the University of Applied Sciences in Coburg set up for the “Designale” at the “Heim & Handwerk” consumer trade fair in Munich. “Light Worlds” here transported visitors to different colour zones that could also be felt, heard and smelled. Green light, for example, was combined with the smell of freshly mowed grass. Another multi-sensory experience was provided for the audience of the play “Die Gesellschaft der Düfte” (The Society of Scents) at the “Casamax Theater” in Cologne. The play based on themes by Patrick Süskind and performed by the “teAtmo” ensemble was underlined by an intensive light display with simultaneous activation of pre-programmed smells dispensed during specific scenes. With a basic smell of flowers and fruit, for instance, a clinical episode was punctuated with the typical smell of disinfectant to add emotional enhancement to the effect of the scene on stage. The smells for both projects were “directed by” the Neuss-based agency “Magicbox”, which creates perception concepts for use in live communication. “People in rooms with multi-sensory stimulation definitely react more intensely,” says agency owner Elke Kies, relating her experiences.

“It creates a more intense experience, one which is also more easily remembered.”

Already common practice in marketing, art and temporary architecture, this phenomenon now also finds its way tentatively into modern architecture. Away from purely “seeing” to a comprehensive perception of space could be the motto here. Even if sensations such as sound or smell are not deliberately produced, they are nonetheless present. And perceived. “There is no such thing as smell-free rooms, every room has its own, distinct smell,” says Prof. Hatt. “Through the furniture, the carpets, especially the people in the room and their clothing.” Against this backdrop, it seems to make sense, therefore, to place the focus of interior design not on visual aspects alone, but specifically include in equal measure multi-sensory media such as smell, sound and light in order to ensure a comprehensive perception of the room. “I can imagine that we will soon see a greater symbiosis between these disciplines,” concludes Rainer Diersche. “The LED technology has opened up entirely new possibilities for us in lighting, but I believe we are also seeing changes in the deployment of fragrance technology in rooms. I expect that both will be combined in the future to produce synaesthetic architecture. We are on the right track here, but we need to give it more time.”

Katja Neumann, May 2013



About the author Katja Neumann is a freelance design journalist with focus on light and lighting. She is co-founder of the international editorial network of specialised journalists “Designjournalists” and has received numerous design awards for her online magazine “Spoonfork”, which she published from 2005 to 2012. As an author and journalist, Katja Neumann writes for various print and online magazines about design, architecture, light and lighting. She lives and works in the Ruhr area.
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