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# PROFESSIONAL **LIGHTING** DESIGN

Magazine for  
professional lighting design

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without luminaires

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in Cheonan/ROK

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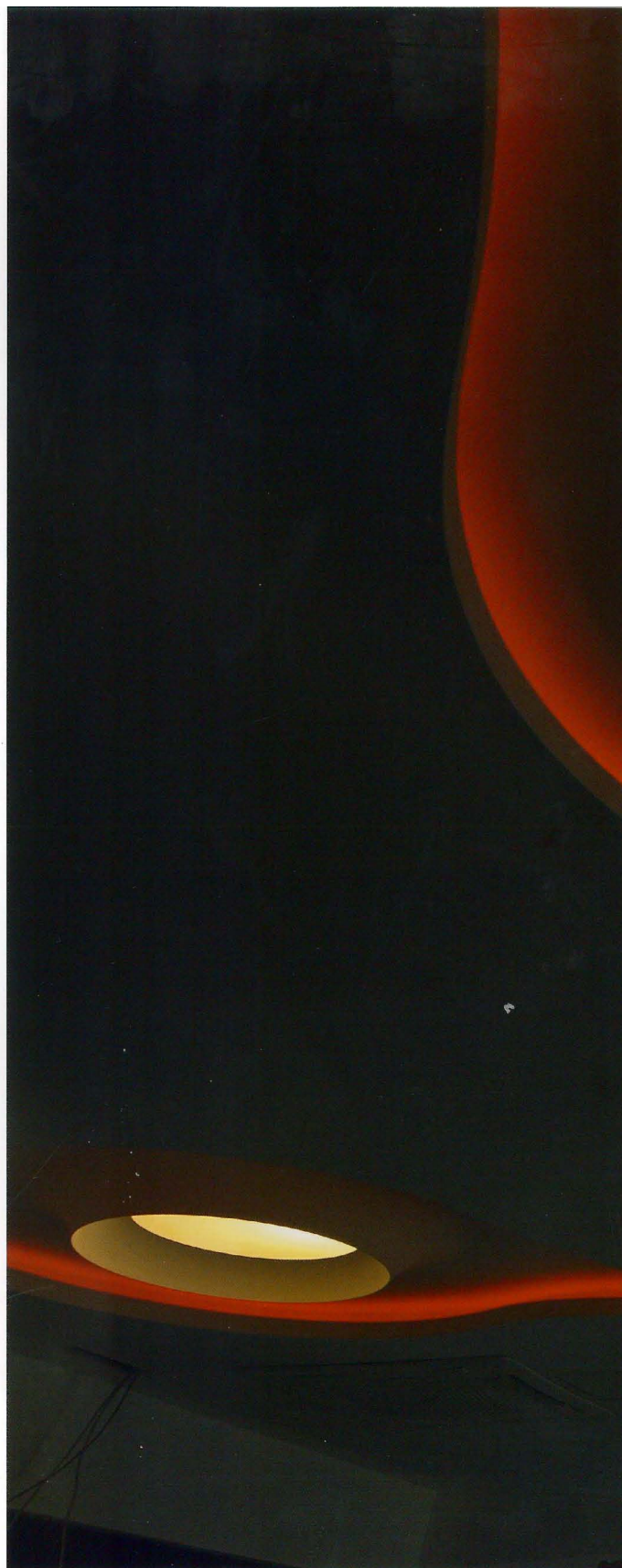
# Organic

**The Novamed Polyclinic in Zagreb/CRO features an extraordinary lighting design scheme – extraordinary for a healthcare facility.**

Text: Dean Skira, Sandra Lindner, Deborah Burnett  
Photos: Vjekoslav Skledar

*Healthcare projects are a great challenge for lighting designers. Nowadays many medical institutions are being built to make the interior spaces look as non-institutional as possible. In addition to its practical functions, such as increasing security, providing visual comfort and enhancing people's activities, lighting also has another important task: creating positive emotions! You might go as far as to say that we would like to see more people in hospitals with a smile on their faces – as a sign they are coping with their physical condition or diagnosed illnesses.*

The lighting design for the polyclinic in Zagreb is not what you would expect to find in a standard hospital environment. And that was exactly what the designers intended.









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A residential and relaxed atmosphere is beneficial to patients' health, and a subtle, unobtrusive lighting system can help accomplish that goal. A number of medical research studies already point to the connection between light and emotions and the benefits this can bring. It therefore made sense for the Croatian lighting design team from Skira Ltd. to apply this know-how in a medical institution. The resulting designed lighting scheme leads to patients practically forgetting that they are in a clinic in Zagreb.

Realised in 2010, the newly built clinic is located on the outskirts of Zagreb. The private medical centre for outpatients combines different medical departments and services: internal medicine, gynaecology, paediatrics, dentistry and radiology, as well as a pharmacy and a beauty and wellness centre.

People entering a clinic – up to now at least – tend to feel nervous or apprehensive, irrespective of whether they are a patient or a visitor. We are generally 'welcomed' by bare white walls. If there is any colour involved at all, it is usually an indefinable shade of grey-green. The furnishings are serviceable and non-descript; the light provided by ceiling-mounted fluorescent battens bright. The words that spring to mind to describe the ambience are 'sterile' and 'impersonal'. The regular lighting systems applied may well fulfil safety and hygiene standards, but do not go a long way to address human needs – the 'feel good' aspect. The kind of facilities people are sent to or have to find their way to when they are not feeling well, or possibly serious ill or injured should be designed to make them feel they are in good hands and help them to cope with their situation.

Lighting designers Dean Skira and Maja Lipovcic from Skira Ltd. in Pula, Croatia wanted to create an environment where the patient would not feel the pressure and formality of a medical institution, spaces that might be fun sometimes and dynamic, colourful and inviting, where the lighting may change over the day and has nothing to do with the sterile and depressing atmosphere we generally associate medical centres with. The idea was to design a sculptural lighting solution rather than adopting a formal lux per square metre approach. They took the inspiration for their design from what life and activities in a clinic are all about: the human body.

Dean Skira hit upon the initial idea for the lighting design concept during a coffee break. While reading a local newspaper he stumbled across an image of brain cells. The idea was born: why not create a lighting installation based on the basic organic form of neurons? Which started his brain cells working immediately...

Novamed Polyclinic covers three floors. The ground floor comprises the reception area, the Paediatrics' Department, the Internal Medicine Department, a beauty and wellness centre, a pharmacy and a cafeteria. Dental Medicine and the Gynaecology Department are on the first floor, with offices, a small hall for training courses, and suites for patients on the second floor.

The designers used the illuminated ceiling design to demarcate the reception spaces and generate the impression of nerve cells in order to underline the flow of communication between the reception desks and the consulting rooms. The communication lines between the different departments in the clinic are the veins or circu-

## LIGHTING DESIGN

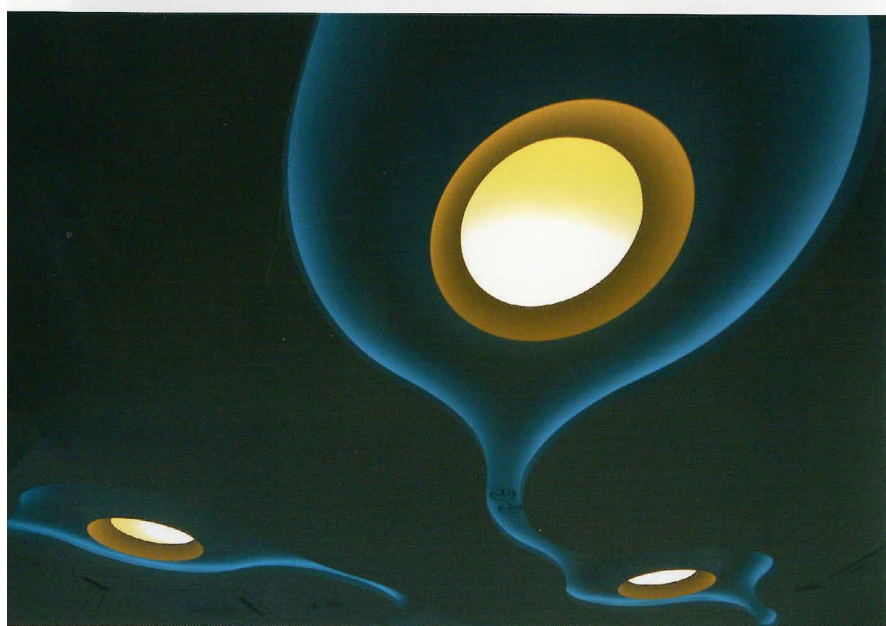
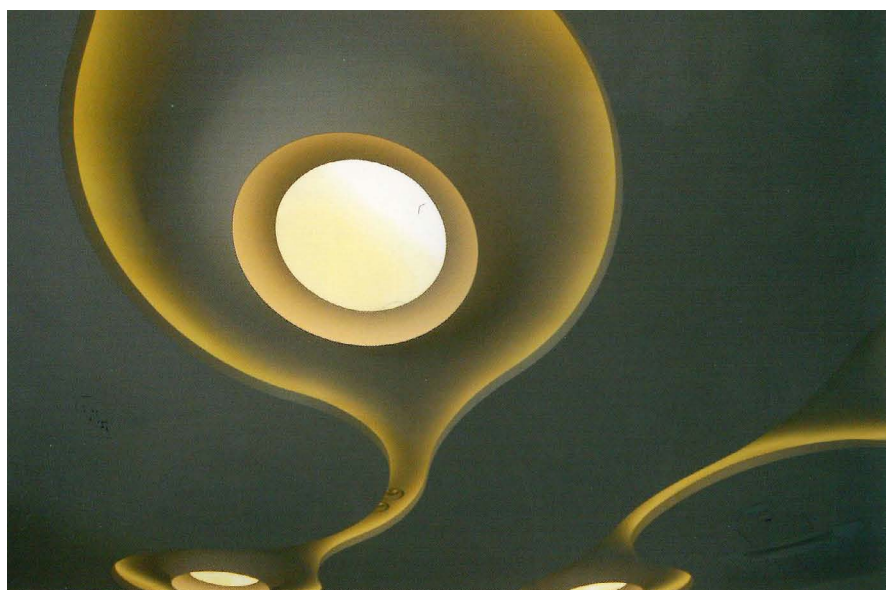
Novamed Polyclinic  
in Zagreb/CRO

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The lighting installation is based on the organic form of neurons. To accentuate the shape of the cells, the synapses and the axons that link them the designers opted for linear lighting fixtures.

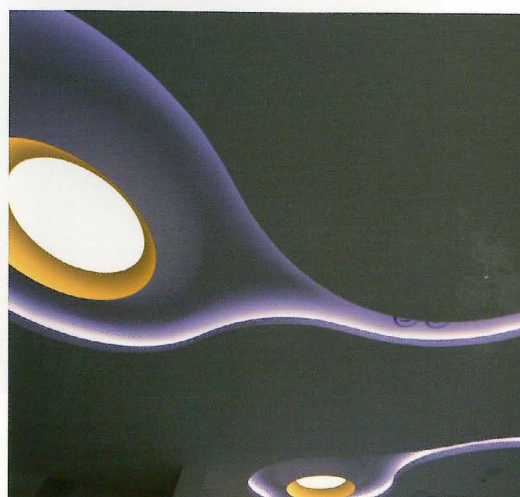




During treatment patients' eyes are generally directed towards the ceiling. The lighting scheme designed for the ceiling therefore incorporates concealed RGB LED strips and a glare-free downlight component to ensure visual comfort.

latory system of the organism. In this project the ceiling is the most important formal element, resulting from the designers' awareness that while we are seated in a dentist's chair or lying down being examined by a doctor, our eyes are directed towards the ceiling. Staring at the ceiling, thoughts race through our heads. Why should ceilings not be designed to please – because a visit to a clinic is not meant to be enjoyable? In this sense, the polyclinic takes over the role of caring in this particular healthcare environment. The unique lighting scheme helps combat the uneasiness associated with being in a sterile, unemotional place, and we briefly forget our qualms.

In the entrance and reception area an organically shaped channel winds its way through the plasterboard ceiling towards the cafeteria where it feeds into the semicircular glazed facade. Linear RGB LED lighting is concealed within this channel, and downlights representing neurons are recessed into the upper ceiling level. The scheme is glare-free and ensures visual comfort. The challenge for the two lighting designers was formulating this idea and developing a concept that, in the end, could be realized. The neurons, the synapses and the axons (the long projections that in the human body conduct electrical impulses away from the neuron's cell body) needed to be adequately and sensitively lit to bring out their contours and allow the onlooker to understand the metaphor. To achieve the softly illuminated organic forms using linear equipment required brain power: "It was necessary to find the exact possible location for the long continuous curves since the ceiling is packed with building services installations. The lit curves needed to reveal the very idea of continuity and the depiction of the connection of cells I had in mind," Dean Skira explains. To reduce the number of visible elements a recessed solution was sought that incorporated different light sources within one housing. Thanks to the generous ceiling cavity height for the HVAC it was possible to install a light dome that required a recess depth of 350 millimetres. The dome luminaire is wired for fluorescent lamps and RGB LED technology and can provide the controlled desired amount of diffuse and soft light – in different luminous colours or colour temperatures. The effect is both stunning and fascinating – and guaranteed to raise a smile.





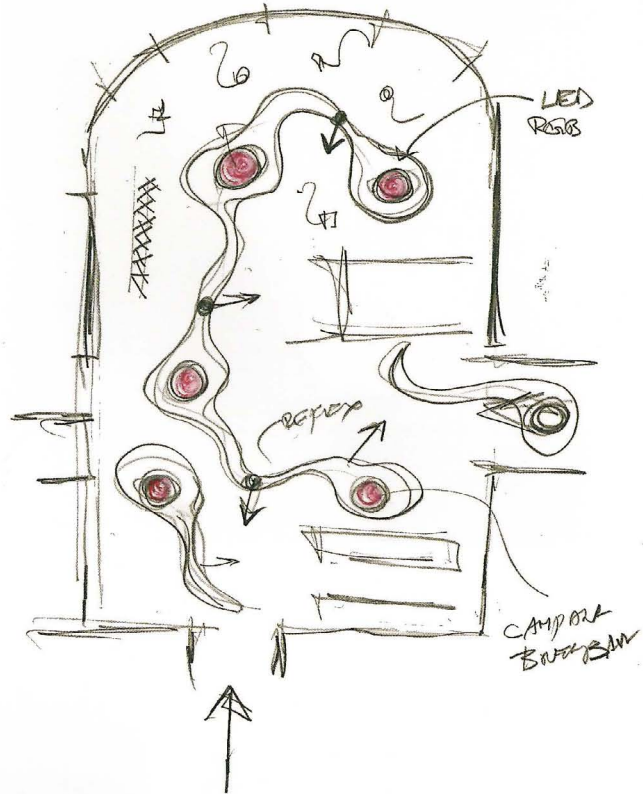
## LIGHTING DESIGN

Novamed Polyclinic  
in Zagreb/CRO

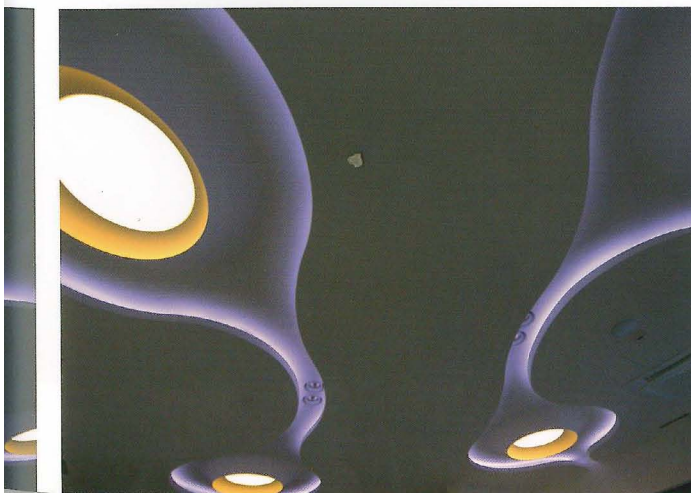
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"Visitors may not understand at first glance what the ceiling forms represent, but it will certainly make them think and perhaps forget for a moment where they are and for what reason," Dean Skira explains. The fact is that the curvilinear shape is important in that it is the brain's preferred shape for optimal wayfinding and location identification. The design concept for the polyclinic is based around a natural phenomenon. To be more exact, it has its roots in neurological science. Featuring a simplified rendering of a series of interconnected neurons is not only suitable for the type of building and appealing to the eye. It also appeals to the brain. The brain, and specifically that portion of the brain called the hippocampus, is selectively responsive to curvilinear shapes for helping us to figure out where we are and how to find our way back. The brain is always on the lookout to keep us safe. This is the reason why we feel more comfortable walking along a meandering path into the woods rather than a straight narrow path. The brain is always on the lookout for unusual shapes and out of the ordinary objects in our environment so that it can compare it to a series of pre-programmed evolutionary preferences. This is referred to as retinotopic mapping. The curvilinear shape on the ceiling is rather unique in that we do not usually find this shape in nature – up on the ceiling. This is important to the brain because it is unexpected, and possibly dangerous, so the brain pays more attention to something that could prove harmful thus the reason why we find this space interesting and 'eye catching' when we walk in.

The lighting concept for Novamed Polyclinic would appear to be the complete opposite of what we are used to seeing in the healthcare environment. And that is what is so exciting about it. Nobody can claim that hospitals in the past have been truly exemplary as far as the architectural lighting was concerned. Dean Skira is extremely pleased with the end result, and still a little surprised at how well the concept has gone down with his clients: "I must say that I did not expect the reaction of the investor or architect to be so positive, but when I presented the 3D simulation it was obvious it had touched something emotional and adventurous inside of them and they quickly made the decision to go for it," Dean Skira added. In many of his recent lectures the Croatian lighting designer has shown this project to

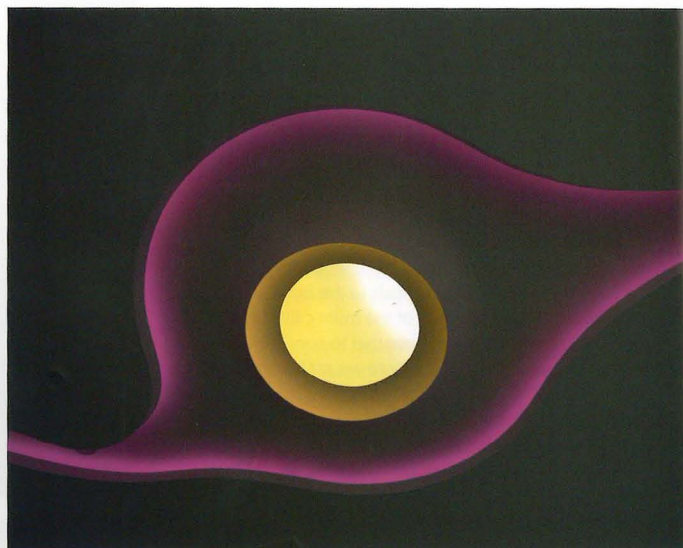


The lighting installation winds its way through the ground floor spaces like a river. The illuminated ceiling was designed to facilitate wayfinding from the respective front desks to the consulting rooms.





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show that once in a while lighting designers must dare to design something out of the ordinary, and that lighting design should always be unique for an individual space or client. "I have learnt that the final decision always lies in the hands of the investor. The architect or lighting designer may be convinced that he has come up with a creative idea, but presenting this idea to the client is a crucial part of the process and is not always met with an open mind, let alone enthusiasm. The concept is often rejected because the approach is too radical or unusual, or for fear of busting the budget," the lighting designer explains.

It is the emotional context of the lighting concept and being open for a truly new approach that make the lighting design for Novamed Polyclinic so outstandingly different – proof indeed that innovative lighting design knows no limits, neither from the spatial nor from the technical point of view.

#### Project team:

Client: Novamed Polyclinic, Zagreb/CRO

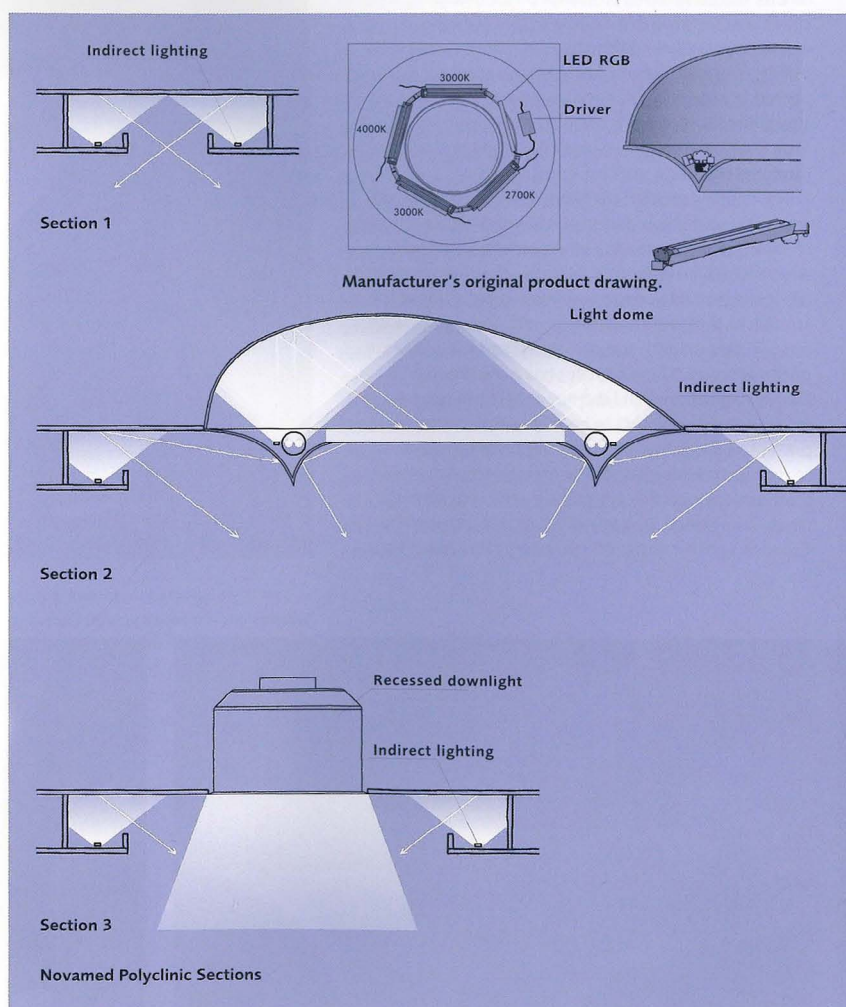
Architects: Ante Nikša Bilic, Vanja Biscanic, Suncica Mastelic-Ivic

Lighting design:

Skira Ltd. / Dean Skira, Maja Lipovcic, Zagreb/CRO; [www.skira.hr](http://www.skira.hr)

Interior design:

Ante Nikša Bilic, Vanja Biscanic, Suncica Mastelic-Ivic





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