

Meteorite in a blue cage

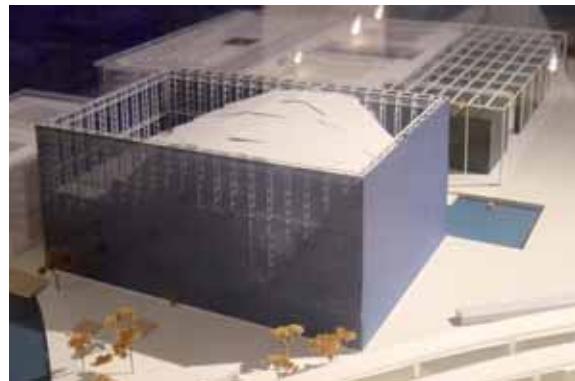
Danish Radio Concert Hall: yet another magnificent cultural project for Copenhagen/DK.

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The design of the Danish Radio Concert Hall in Copenhagen/DK shows us that architect Jean Nouvel – besides all the other things he does – reads novels. The new building was to look like the meteorite that fell out of the sky in Peter Høeg's award-winning book "Miss Smilla's Feeling for Snow". The clients could not have been more stunned if they had witnessed the meteorite landing themselves – the costs for what is now rated as the most expensive concert hall in the world doubled during the construction phase. Whether this huge investment was worth it remains to be seen. One thing is for sure: after the building of the new opera house and the new extension to the Royal Library, Copenhagen has acquired yet another valuable cultural asset – and a further architectural jewel for the world to marvel at. The Danish Radio Concert Hall comprises another exemplary project from light artist Yann Kersalé, which will provide the lighting community with food for thought and perhaps even controversial debate.

The new "Koncerthuset" is situated on Amager Island in a new quarter of the City of Copenhagen called Ørestad, which was formerly a military firing range. The new part of town is linked to the city centre via Denmark's first underground railway, but there are not many people actually living there yet. There are plans to generate 50,000 jobs and 20,000 housing units in the new quarter



in the future, but this is not yet very visible. That said, there is evidence of new development on every corner. A students' hall of residence has just been built next to the IT University and the Faculty of Humanistic Studies at the University of Copenhagen to ensure there is activity in the area round the clock.

The somewhat empty Amager Island actually makes for an excellent location for the concert hall. In the over-

all ensemble that goes by the name of "DR byen", which basically means "Denmark's Radio City", the concert hall is the fourth besides three other buildings designed by different architects. You might say it is the last unit to complete the ensemble that comprises the different functions covered by Danish Radio which had formerly been located in different parts of town. This is now the headquarters of Danish Radio, complete with production centres and studios. Jean Nouvel's cube sits quietly but visibly next to three other large-scale buildings with very different facades, swathed in dark background-blue and revealing its comprehensive inner life to the discerning viewer.

It fits perfectly in this location – but you won't find any concert-goers dressed in black walking the streets in Ørestad. You can feel there is life here – but it is real life mixed with culture and the media. It takes more than conventional means for any building in this location to represent its contents and assert itself in the urban landscape. Jean Nouvel has achieved this with his architecture. His intention was to design a building that would confront the "unsure future of the (still relatively new) environment with the power of uncertainty and mystery" – an apparent contradiction of terms, you might think, which it is difficult to bring together in a piece of architecture. The Danish Radio Concert Hall's prestige, power of expression and mystic quality co-exist behind a blue textile facade and in a series of very different interior spaces. In the daytime the cobalt blue outer skin that



Visualized radio. The concert hall turns music into a visual experience with the aid of light. In the daytime, this is only perceivable in the lobby. After dark it is communicated via the outer skin of the building. Based on the principle of theatre scrim, the outer skin allows varying degrees of insight into the building depending on the lighting conditions inside.





Top left: the cloakroom set-up is designed to look like instrument cases that have been temporarily stacked in the lobby. The lighting creates two new layers that are superimposed on the architecture and fade spatial limits to a blur. Nothing in this space appears to be rigid or concrete.

Top right/bottom image: the coloured wall luminaires are a symbol of the diversity in the building. Applied throughout the entire lobby, these "luminous cushions" make for ever changing impressions and vistas depending on the position of the viewer. The look as if they are dancing across the rough, elephant-like texture of the wall surfaces.

protectively surrounds the entire structure comes across as a huge, semi-transparent, cubic cage, in which the concert hall seems to be suspended like a meteorite that has cut a crater out of the interior. By night the textile skin converts the building into a glowing, almost opaque blue box, with the life going on inside the building projected outside.

Thus, the whole of Copenhagen shares the goings-on inside the concert hall thanks to the projections on the 21,000 square metre fibre glass skin. The solid, static daytime image of the building, with its massive dimensions (96 metres long, 58 metres wide and 45 metres tall), overshadows all other buildings on the island and at night turns into a flickering screen. Nervous sequences of images and abstract motifs, portrayed mainly in shades of blue, scurry over the outer textile facade surface, inviting the viewer to experience the contents of the building from a distance. The idea of creating a media facade on a structure of this kind is not new, but given Denmark's strict view of light pollution it can be regarded as somewhat daring – a novelty even.

Especially during the long Scandinavian winter nights, when the concert season reaches its climax, the building comes to life. The mysterious, translucent cube, its inner life rendered visible to the outside world, welcomes visitors to come closer and enter. Access to the building is via one corner of the structure, which looks as if a section has been cut out of the building and another inserted.

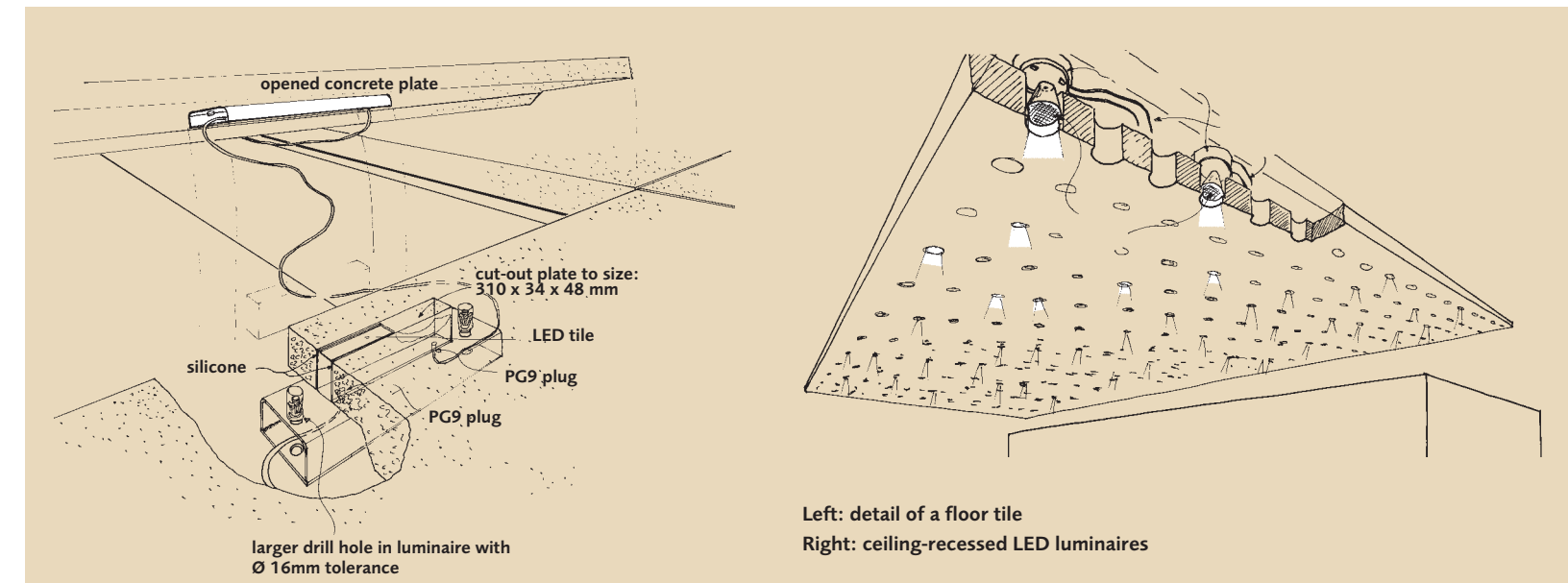
The lively atmosphere generated by the projections on the outer skin is continued inside the building. That is extremely exciting on the one hand, but tends to lend to confusion to orienting oneself inside the building. On entering the foyer, the visitor instinctively looks up at the 300 square metre starry sky installation that consists of 1600 LEDs. The pattern is a replica of the sky over Copenhagen on the night of the opening on 17. January, 2009. Up to this point, spatial correlations and boundaries are clearly recognisable; the way forward through the space is still obvious. The further one goes into the space, however, so the spatial boundaries seem to translate into dynamic, abstract colour projections made of

light. The film sequences and images are accompanied acoustically by motifs from the world of music. Structures related to the architecture and to static and moving light are layered. Even the fixed, zig-zag ceiling-recessed lighting fixtures installed in the underside of the concert hall appear to be in motion because of their dynamic shape. Fixed building components merge with the moving images. Reality blends with virtual worlds. This spatial experience mirrors the pulsating, innovative, and by no means static events that take place inside the building, which is designed to be a creative forum for music of all genres. Both established and experimental musicians and music lovers are welcome here.

Light, and especially dynamic light, is the main protagonist of the scenery and atmosphere in the foyer as well as on the outside of the building. Apart from the moving lighting effects, fixed lighting components also contribute to the overall stimulating ambience. The different coloured diffuse rectangular luminaires dance across the elephant hide concrete walls in the foyer. Reflected in the glass façade, they come across as synaesthetic. This image of coloured rectangles, or Concrete Lights as they are called, which were custom designed for this project, is continued throughout the entire foyer area. The same luminaires are applied in the office building. The dancing rectangles are an example of the dynamic design and the numerous surprising and unconventional details one encounters all over the building. Many of these are ideas that stem from Yann Kersalé and his team.

To access the different studios you have to cross different parts of the foyer which taper into corridors only to widen out into vestibule-like entrance areas that serve other spaces.

Each of the spaces contained in the building has received its own design. This is especially true of the core of the building, the concert hall itself, which seats 1800, but also applies to three other smaller studios. Each of the spaces is a world of its own, in which light plays a key role. The four halls, or studios, differ enormously from the point of view of décor and consequently also of the atmosphere they radiate. They contrast strongly with



Left: detail of a floor tile
Right: ceiling-recessed LED luminaires

the atmosphere in the foyer. Each of the halls visually echoes the music genre it primarily represents. The respective moods are significantly supported by the lighting, which is designed to follow the architect's intention.

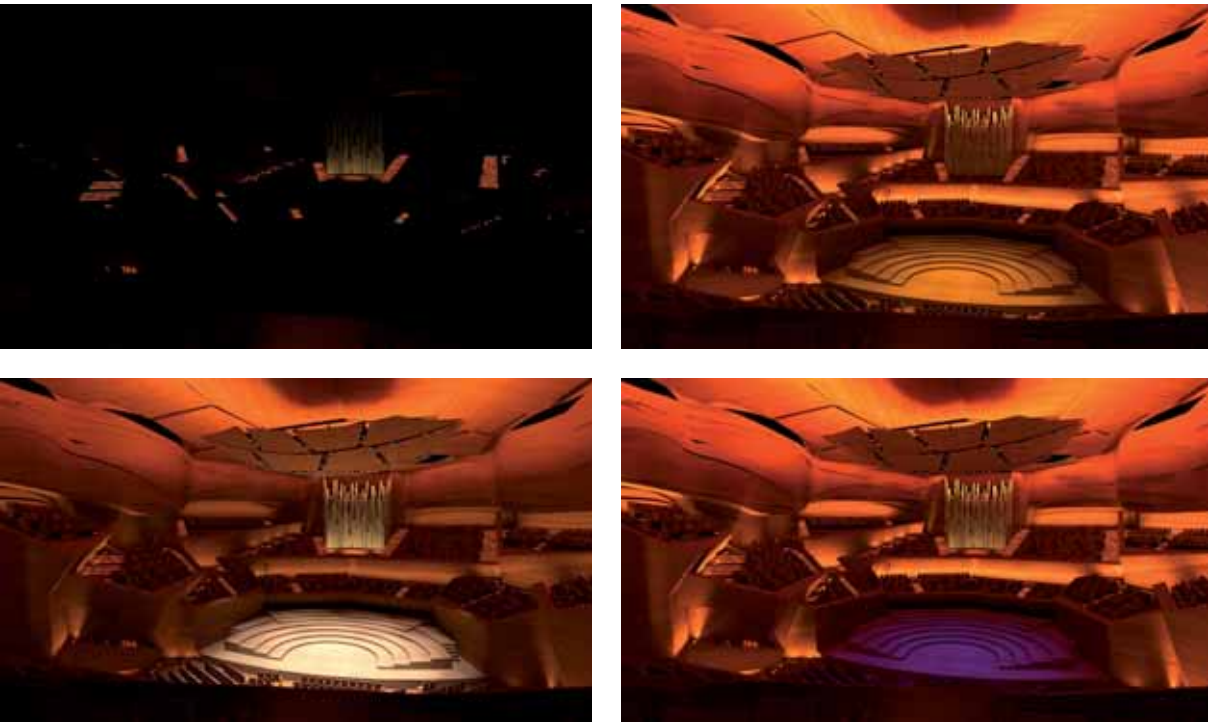
Viewed from the inside or out, the grand concert hall, which is fully independent of the building wrapped around it, is the real heart of the project. Its outer shell consists of a scaled wooden surface, which seems to be protecting the space inside. In the 2000 square metre foyer or lobby, the concert hall is viewed practically from below, like a huge foreign body that has decided to park itself in that very space. To access the concert hall, the visitor has to undergo a metamorphosis, beginning with the stimulating atmosphere in the foyer. From there he can take one of the tapering staircases that become increasingly narrower as they rise up through the building until he finds himself in small interim space lined with orange felt. This airlock-like space swallows him up with all the sounds from the world he has just left and releases him – decelerated and calm – into the organic world of the concert hall.

The concert hall is dedicated predominantly to classical concerts, although the Danish Radio Big Band, the Danish Radio Vocal Ensemble and the Danish National Symphony Orchestra are also known to perform here. On the one hand, the concert hall itself features a number of typical details, but on the other hand the design is in parts extremely unconventional. Inspired by the 'Berliner Philharmonie' and the golden vineyards around Lake Geneva in autumn, the architects have developed an unusual and truly remarkable space. The alignment of the balconies is reminiscent of the terraced landscapes that accommodate the vines, all surrounding the central stage area. The different red and brown tones used for the seats are inspired by the colour of autumn leaves. The sweeping convex and concave upper walls and ceiling surfaces show clear references to undulating hills.

The lighting follows these metaphors, enhancing the colour and structure of the warm wooden cladding used for all surfaces. Custom designed asymmetrical recessed floor lights put warm light to the fifteen balconies and



The 300 square metre starry sky in the lobby consists of 1600 LEDs set in the blue acoustic ceiling. The use of 1.2 watt Power LEDs that emit 60 lumens per watt will guarantee an illuminance of 100 lux in 30 years' time, in spite of ageing. The colour temperature of 6500 Kelvin is designed to contrast with the warm atmosphere in the rest of the space. Lines of light flush-mounted in the flooring slow people down, which does not seem to make sense because the star-studded 'sky' draws the visitors on into the space.



Different light scenes have been designed for the different parts of a concert event. At the start, the auditorium is bathed in soft candlelight-quality light. As the concert-goers take their seats, the lighting transforms into a Scandinavian sunset. During the concert, the lighting focusses discreetly on the stage, behind which the organ pipes stand proud like a block of frozen icicles. In the interval, the stage turns blue and fades into the background. When the concert is over darkness returns.

The small concert halls or studios are as different in their design and furnishings as the concerts that take place in them.



the wood cladding from below. In the sections where the wooden surfaces are structured, the luminaires are mounted close to the walls to bring out the texture of the wood and design through the formation of soft shadows. Indirect halogen wash lights mounted on the acoustic sail in the centre of the space put a warm, even layer of light to the ceiling. They further accentuate the gently curved upper wall sections. Above these sections a series of backlit slits of light give the impression of daylight penetrating the huge space. Stage projectors are mounted out of sight between the individual segments of the acoustic sail.

All the lighting components in the concert hall space can be controlled individually or in groups. When people are entering the auditorium to take their seats, the hall is swathed in relatively uniform light to facilitate orientation. Once the concert begins the light is naturally focussed on the orchestra and the rest of space is gently plunged into candlelight mode. The different scenes for the wide variety of occasions inherent to the concert hall were coordinated in advance with the user and the architect, and pre-programmed ready to be called up as required.

The overall atmosphere in the space is primarily determined by light and the materials applied, since the lighting is practically only indirect – the wood reflecting the light into the space. This lends the auditorium a very festive quality. Visible light or sparkling light sources, which are otherwise frequently used to generate a festive atmosphere, are not used here at all, with the result that the auditorium relies on its forms and materials – which works perfectly. In spite of its size, it manages to welcome concert-goers warmly. The lighting is fully integrated into the architecture, and is only applied to support the architectural design – a stark contrast to the foyer, where the light puts itself in the front row.

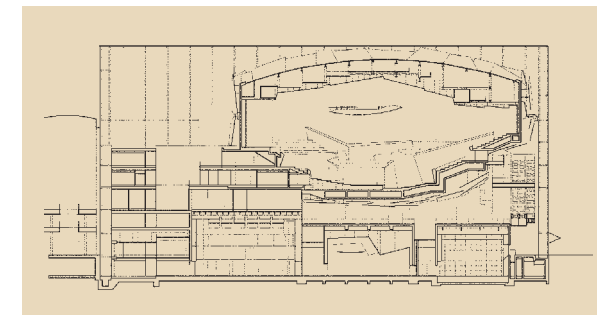
The lighting design concept for the three smaller studios also differs from that in the foyer. The light is static and part of the design idea. In Studio 3, which is designed using practically only glossy black surfaces, the diffuse, long rectangular light panels are set into the walls – reminiscent of piano keys. In this case, the lighting has an immediate symbolic quality. The ceiling also contains a visible light component in the form of small halogen downlights. It comes as no surprise that this room is dedicated mainly to piano concerts. The atmosphere is intimate yet festive – an audience of 200 are seated relatively close to the musicians and the concert becomes a truly shared moment.

The same applies to Studio 4, which is similar in size, but totally different from the point of view of furnishing and atmosphere. This red room is dedicated to choral concerts and chamber music. The lighting is functional and integrated into the architecture in an unobtrusive fashion.

Studio 2, the largest of the three smaller studios, seats up to 500 visitors. Portraits of Danish musicians and composers adorn the wood-panelled walls. The lighting

consists of stage projectors mounted discreetly in ceiling slots. Ambient lighting is provided by diffuse pendant luminaires, suspended from the ceiling complete with rolls of cable, as if they are only provisionally there. This detail lends the space a rehearsal room atmosphere – although the professional jazz and choral concerts that take place here are far from rehearsal quality.

The "Koncerthuset" in Copenhagen is an unconventional building that from the outside looks more like a multi-screen cinema complex than the home of a series of dignified concert halls. Nobody yet knows whether the general public will really accept it. Opened on 17. January, 2009, the concert hall offers a programme of 120 concerts a year – classical concerts in the main – and now has the task of filling its auditoria in these critical economic times. Copenhagen citizens may well be too fond of their old concert hall, which is located in the middle of the Frederiksberg residential area and easy to reach for people living in the centre of town. The political issues that arose around the building of the new concert hall, which nobody wanted at first, will hopefully soon be forgotten. One can only hope that the building will be judged exclusively for its very nature, its beauty and its purpose. To discover the diverse qualities of the concert hall in its context with the city and the new urban



quarter, the best thing you can do is take the Metro at the old Royal Danish Theatre in the historical centre of the city and ride the five minutes to the glowing concert hall cube. The new Radio City Concert Hall has something for everyone: an exciting, vibrant lobby; plus striking, modern or elegantly festive concert halls and studios. But ... you have to get through the foyer first. Maybe a bit too much event character for Miss Smilla!

Project team:

Client: Danish Radio, Copenhagen/DK
Architects: Ateliers Jean Nouvel, Paris/F
Light art / projections: Atelier Yann Kersalé, Paris/F
Architectural lighting design: Light Makers AS / Zumtobel Group

Products applied:

Lighting solution for the foyer:
"Concreteights": Zumtobel, custom design
Light lines: Zumtobel, "Zig-Zag", custom design
Gobo projectors: ALW
Starry sky installation: LEDs, Ledon