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## TRANSPARENT MEDIA FACADES

ILLUMESH® + MEDIAMESH®

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# METALLIC MESH INNOVATIVELY STAGED.

For over 20 years we have been systematically developing innovative metallic mesh systems and applications, and we maintain our leading role in pioneering international architecture projects with inspiring and leading technological architecture and design solutions. We already began focussing on multimedia applications for metallic mesh facades at the end of 1990s. Projects such as the Expomedia Light Cube in Saarbrücken, the Spielbudenplatz in Hamburg or Arctura in Östersund were all bathed in light by either projection onto or backlighting of the wire mesh material.



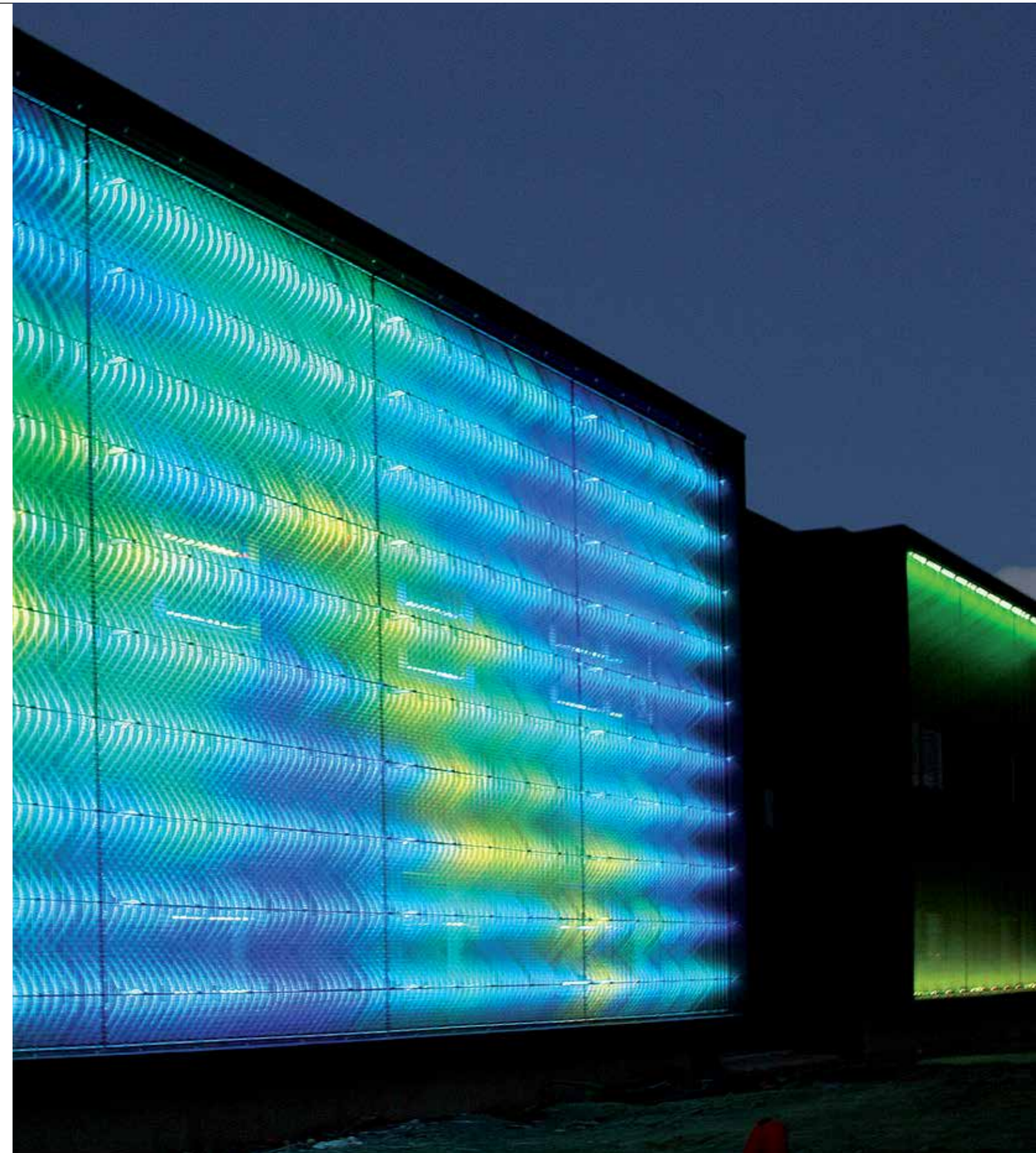
„Alpenland Wohnbaugenossenschaft“ cooperative housing association, St. Pölten/Austria, Mesh type: PC-Omega 1530 (2)

We have been integrating high-performance LED profiles into our mesh since 2006, using special software to create transparent media facades. As an architecturally integrated structure, this system establishes new contexts and interactions between the respective building and its primary function. We have received numerous awards both at home and abroad for design, innovation and the cost-effectiveness of this technology.

Depending on the incidence of light, metallic mesh can either appear transparent or opaque and reflect its environment in many different ways. Alongside its attractive visual appearance, stainless steel mesh also impresses with its efficiency as a solar protection system, climate control membrane and fall guard protection. It is resistant to corrosion, vandalism and weather conditions, as well as being non-combustible and low-maintenance.

Transparent media facade systems supplement these exceptional aesthetics and wide range of functions with an additional aspect. Unlike conventional billboards, the architectural beauty of the design is also maintained when switched off. Projection of framed colour transitions or high-resolution content serve to visually upgrade facades during the day and at night. The rooms and space behind the medialisation can also continue to be used without restriction, as they grant unrestricted views out of the building, make use of natural daylight and are not compromised in any way by the media being displayed.

New LED technologies complement our previous models and also herald the beginning of a new generation of transparent media facades.



Magical effects. Mesh type: Illumesh® (3)



# ARCHITECTURE SENSITIVELY MEDIALISED.

Our transparent systems for medialisation of large facades have been specifically developed for long-term use in the field of architecture. They can be used individually or in combination, thereby opening up virtually limitless display possibilities. The exceptional web width and length of our architectural meshes also make it possible to medialise extremely large facades while achieving transparency levels of between 55% and 65%.

The system is based on our Tigris stainless steel cable mesh. Special profiles are then equipped with LEDs or SMD LEDs to create a watertight system. The image resolution is based on individual requirements in terms of display quality and the

available budget. Data and power is supplied through control units that are integrated into the building structure and networked with a central server located in the building.



Mediamesh®: LEDs integrated into stainless steel mesh. Here: 5 LEDs/Pixel (4)

Two different systems are available here. With Mediamesh®, carrier sleeves are woven into the mesh. Following the weaving process, we then install horizontal LED profiles which shine directly on anyone viewing the facade. For Illumesh®, we weave in special brackets in front of the web mesh and then use these to fit LED profiles which light up the mesh. The LED light, which is diffused as a large-area vertical reflection, is then indirectly visible.

The ability to display 16 bits per colour allows a brilliant image with fascinating colour depth to be produced. The process for uploading graphics, animations and videos is computer-based and can also be performed via the internet. No additional cooling is required, even when operating in warmer climates. Our media facades also demonstrate their energy efficiency with brightness that is automatically adjusted to daylight and weather conditions. Numerous internationally recognised design awards serve to underline the impressive aesthetics, function and performance of the system.



Illumesh®: LED profiles are attached to the mesh using specially integrated brackets (5)

## ADVANTAGES OF TRANSPARENT MEDIA FACADES MADE OF STAINLESS STEEL MESH

- \_ DESIGN SUITABLE FOR DAYLIGHT AND/OR NIGHT-TIME USE
- \_ TRANSPARENT AND TRANSLUCENT FACADES
- \_ UNRESTRICTED INTERNAL ROOM UTILISATION
- \_ AESTHETIC QUALITY
- \_ FUNCTIONAL SOLAR PROTECTION
- \_ LOW POWER CONSUMPTION
- \_ ROBUST WEATHER RESISTANCE
- \_ MINIMUM MAINTENANCE
- \_ LONG SERVICE LIFE
- \_ HIGH DEGREE OF RELIABILITY



Illumesh®: LED light that reflects the mesh material (6)



# MEDIAMESH®: LEDs INTEGRATED INTO MESH.

Mediamesh® medialises large facades during the day and at night without covering up the architecture. The stainless steel mesh carrier material is flexible in terms of dimensioning and LED layouts. Thanks to their total depth of just 25 mm, woven panels of up to 4 m in width and 20 m in length can be sculpted to accommodate any display format.



Mediamesh®: the LED density determines the resolution of the images (7)

When working with high resolution graphics, images, videos or live TV broadcasts, the system can demonstrate its incredible performance even in broad daylight. Mediamesh® covers the entire spectrum of image display. And since the system does not require conventional format standards, such as 4:3 or 16:9, it offers users the flexibility to create customised presentations that are sensitive to the architectural proportions of the respective building.

Mediamesh® systems using five high-performance LEDs per pixel have already proven their effectiveness over many years. Indeed, spectacular projects serve to underline the performance of this system configuration that celebrated its premiere directly next to the Milan Cathedral at the famous Piazza del Duomo. Numerous other installations, such as the Tripoli International Convention Center in Libya, the American Airlines Arena in Miami, USA, or the New York Port Authority Bus Terminal, have since added new chapters to the success story of our Mediamesh® transparent media facade system.

As a further development of this technology, we are now offering a version with six LEDs per pixel for projects with particularly high brightness requirements. Thanks to its light intensity of up to 11,000 Nits, this innovative pixel configuration can even be used in direct sunlight and for large viewing distances. The system is already delivering impressive performance in various projects, such as the WinStar World Casino in Oklahoma, USA.



Piazza del Duomo – Milan / Italy (8)

## TECHNICAL DETAILS

- \_ Individual panel width: up to 4 m max.
- \_ Mesh length: up to 20 m max.
- \_ Depth: 2.5 cm
- \_ Transparency: 55% to 65%
- \_ LED profiles: pixel spacing freely selectable  
Horizontal from 42.5 mm, vertical from 40 mm
- \_ IP 67 protection
- \_ Weather-resistant
- \_ Hurricane-resistant up to wind speeds of 145 mph (235 km/h) with corresponding design

## 5 LEDS PER PIXEL

- \_ Pixel configuration: 2 red, 2 green, 1 blue
- \_ Colour depth: 16 bits per colour
- \_ Projection angle: horizontal 120°, vertical 60°
- \_ Light intensity: up to 6,000 Nits
- \_ Ambient temperature from -20°C to +70°C
- \_ LEDs: 70,000 operating hours
- \_ Average power consumption: e.g. 85 W/m<sup>2</sup> with a resolution of V60 x H42.5 mm

## 6 LEDS PER PIXEL

- \_ Pixel configuration: 2 red, 2 green, 2 blue
- \_ Colour depth: 16 bits per colour
- \_ Projection angle: horizontal 110°, vertical 50°
- \_ Light intensity: up to 11,000 Nits
- \_ Ambient temperature from -40°C to +50°C
- \_ LEDs: 70,000 operating hours
- \_ Average power consumption: e.g. 100 W/m<sup>2</sup> with a resolution of V60 x H42.5 mm

## ADVANTAGES AT A GLANCE: MEDIAMESH® WITH LED LIGHTING

- \_ DISPLAY DURING THE DAY AND AT NIGHT
- \_ EXTREMELY BRIGHT VERSIONS
- \_ DISPLAYS THE ENTIRE RANGE OF MEDIA
- \_ BRILLIANT IMAGE RESOLUTION



# MEDIAMESH®: SMDs OPTIMISED FOR OUTDOOR DEPLOYMENTS.

With the further development of SMD technology, **Mediamesh®** offers the RGB SMD LED version for outdoor deployments. This design, developed specifically for GKD, boasts a particularly compact structure. All three base colours – red, green, blue – are housed in a single SMD chassis. The high packing density provides a tighter pixel grid. This in turn increases the light intensity, thereby optimising the viewing angle and colour brilliance. The new design also offers far greater flexibility in terms of pixel configuration, as up to three RGB SMDs can be combined per pixel.

**Mediamesh®** with RGB SMD LEDs is suitable for daylight applications and can display the entire range of media. The SMD LEDs are waterproof thanks to being fully encapsulated in their profiles.



Mediamesh® with two RGB-SMDs/Pixel (9)

## TECHNICAL DETAILS

- \_ Individual panel width: up to 4 m max.
- \_ Mesh length: up to 20 m max.
- \_ Depth: 2.5 cm
- \_ Transparency: 55% to 65%
- \_ LED profiles: pixel spacing freely selectable  
Horizontal from 30 mm, vertical from 40 mm
- \_ IP 67 protection
- \_ Weather-resistant
- \_ Hurricane-resistant up to wind speeds of 145 mph  
(235 km/h) with corresponding design

## SMD LED OUTDOOR

- \_ Pixel configuration: up to 3 SMDs = 3 red, 3 green, 3 blue
- \_ Colour depth: 16 bits per colour
- \_ Projection angle: horizontal 120°, vertical 120°
- \_ Light intensity: up to 5,000 Nits
- \_ Ambient temperature from -20°C to +70°C
- \_ LEDs: 100,000 operating hours
- \_ Average power consumption: e.g. 140 W/m<sup>2</sup> with a resolution of V40 x H40 mm

## ADVANTAGES AT A GLANCE: MEDIAMESH® WITH RGB SMD LEDs

- \_ LATEST LED TECHNOLOGY
- \_ COMPACT DESIGN
- \_ SHORT VIEWING DISTANCE
- \_ TIGHTER PIXEL GRID
- \_ GREATER PROJECTION ANGLE
- \_ HIGH DEGREE OF COLOUR ACCURACY
- \_ OPTIMUM VIEWING ANGLE



Mediamesh® SMD system - first prototype of the new SMD system (10)



# MEDIAMESH® INDOOR: A NEW INTERPRETATION OF VERSATILITY.

Whether high-level trade fair stand and store design, parking/traffic structures or commercial construction projects, **Mediamesh® Indoor** caters to a broad range of applications. The medialised front side is used to present graphics, images or videos for product launches, image presentations, navigation or information systems. The textile structure of the back also shines with all decorative and functional advantages of metallic mesh room partitions, while the quick and easy installation serves to underline the efficiency of the system.



*Mediamesh® Indoor as a bifunctional room partition (12)*



*Mediamesh® Indoor: almost opaque or translucent - spectacular display with targeted lighting and media presentation (11)*

## TECHNICAL DETAIL

- \_ Individual panel width: up to 4 m max.
- \_ Mesh length: up to 20 m max.
- \_ Depth: 2.5 cm
- \_ Transparency: 55% to 65%
- \_ LED profiles: pixel spacing freely selectable  
Horizontal from 30 mm, vertical from 40 mm
- \_ IP 20 protection

## SMD-LED INDOOR

- \_ Pixel configuration up to 3 SMD: 3 red, 3 green, 3 blue
- \_ Colour depth: 16 bits per colour
- \_ Projection angle: horizontal 120°, vertical 120°
- \_ Light intensity: up to 2,500 Nits
- \_ LEDs: 100,000 operating hours
- \_ Average power consumption: e.g. 60 W/m<sup>2</sup> with a resolution of V40 x H40 mm

Even when viewed close up, the tight arrangement of the pixels in the RGB SMD LEDs guarantees a high image resolution and excellent viewing angle. A pixel configuration adapted specifically for interior spaces using just one RGB SMD LED chassis per pixel reduces the light intensity without compromising the colour brilliance or natural colour reproduction.

## ADVANTAGES AT A GLANCE:

- \_ HIGH IMAGE RESOLUTION
- \_ SHORT VIEWING DISTANCE
- \_ COLOUR ACCURACY
- \_ GOOD VIEWING ANGLE
- \_ BOTH SIDES CAN BE USED
- \_ LED PROFILES NOT ENCAPSULATED



# ILLUMESH®: THREE-DIMENSIONAL LIGHTING.

Illumesh® makes it easy to medialisate and illuminate large facades. This transparent media facade system can demonstrate its full performance capabilities at night. Special brackets running horizontally carry LED profiles offset some 20 cm from the mesh. The light from these LEDs is then projected onto the mesh. The round stainless steel wires reflect the light asymmetrically. This creates a three-dimensional hologram effect, which makes the lighting appear to float in front of the facade.

The display options available range from alternating colour fields, all the way up to complex animations or text/graphic elements. In contrast with conventional systems, Illumesh®

impresses with its graphic image resolution and low-maintenance operation. Depending on project requirements, we configure Illumesh® either with five or six LEDs per pixel.



Illumesh®: hologram-like presentation (13)

## TECHNICAL DETAILS

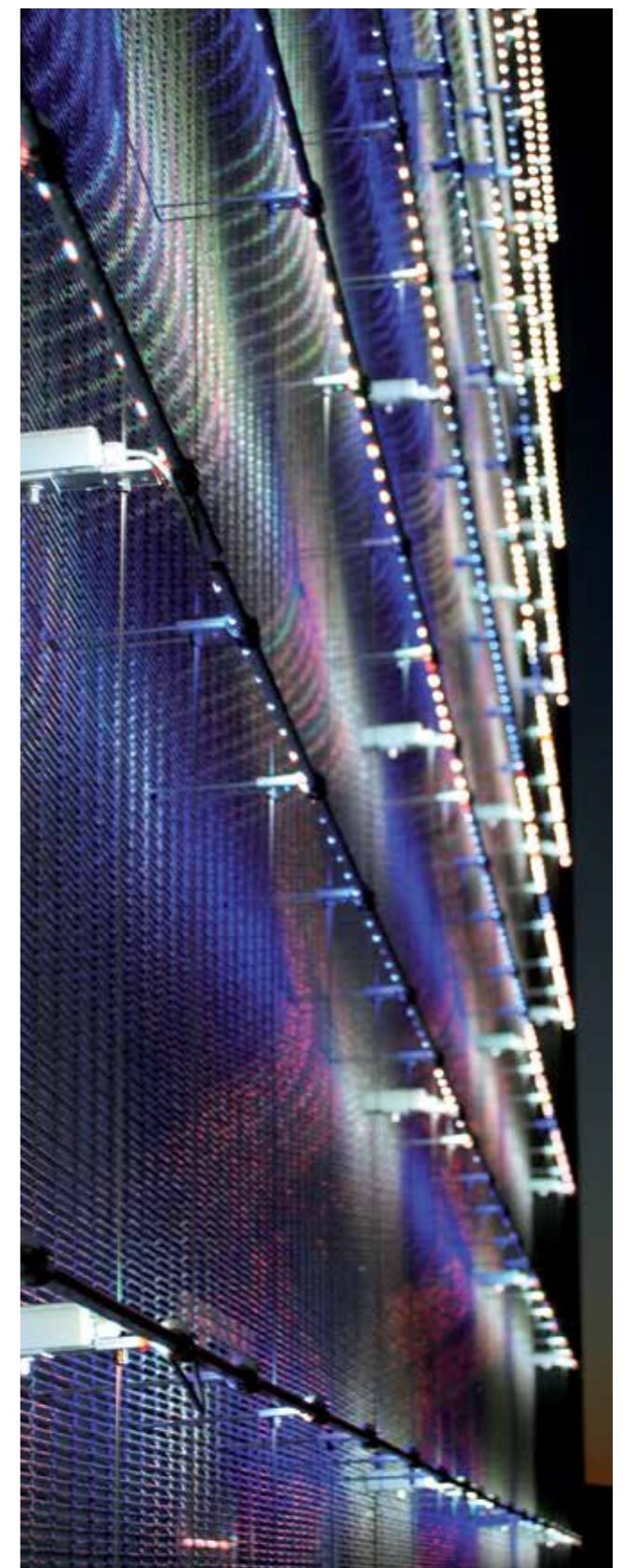
- \_ Individual panel width: up to 4 m max.
- \_ Mesh length: up to 20 m max.
- \_ Total height: 20 cm including brackets
- \_ Transparency: 62 %
- \_ LED profiles: pixel spacing freely selectable  
Horizontal from 5 cm to 50 cm, vertical from 40 cm to 4 m
- \_ IP 67 protection
- \_ Weather-resistant, Hurricane-resistant up to wind speeds of 145 mph (235 km/h) with corresponding design

## ILLUMESH®

- \_ Pixel configuration: 2 red, 2 green, 1 blue /  
2 red, 2 green, 2 blue
- \_ Colour depth: 16 bits per colour
- \_ Light intensity: e.g. 200 Nits with a resolution of  
V500 x H100 mm
- \_ Ambient temperature from -20°C to +70°C
- \_ LEDs: 70,000 operating hours
- \_ Average power consumption: e.g. 9,5 W/m<sup>2</sup> with a  
resolution of V500 x H50 mm

## ADVANTAGES AT A GLANCE: ILLUMESH®

- \_ NIGHT-TIME MEDIALISATION OF LARGE FACADE AREAS
- \_ THREE-DIMENSIONAL HOLOGRAM EFFECT
- \_ GRAPHIC IMAGE RESOLUTION
- \_ LOW-MAINTENANCE
- \_ AFFORDABLE VERSION



Illumesh®: Torcé – France (14)



# ILLUMESH® + MEDIAMESH® : COMBINED STRENGTHS FOR EVEN GREATER INSPIRATION.

The combination of **Mediamesh®** and **Illumesh®** takes full advantage of the key features offered by both systems – also taking into account cost aspects. For medialisation of particularly large facades or complete building shells, it is a good idea to create zones with different image resolutions. Low-resolution fonts, characters or colour areas are displayed with **Illumesh®** here, while **Mediamesh®** sections are used for complex graphics or direct video uploads.

The interaction of the two mesh systems massively increases the scope of content that can be displayed on a media facade. The areas with different resolutions allow video images to be merged with dynamic colour areas. Large facades are brought

to life with images and sustainably emotionalised on the basis of a project-specific presentation concept. Unlike conventional systems, the combination of the two mesh systems forms a platform for 24-hour content with dramaturgical accentuation.



*Mediamesh®: Port Authority, New York (15)*



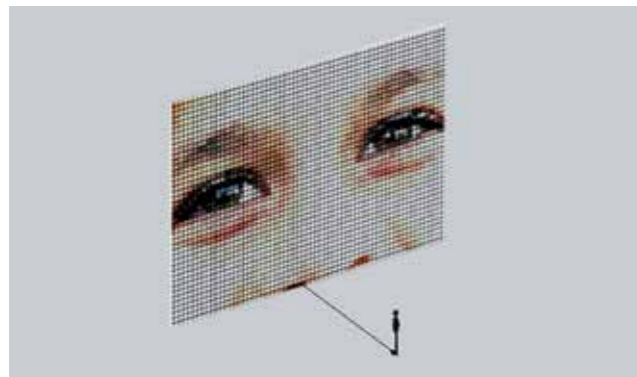
*Colours lend emotion to facades (16)*



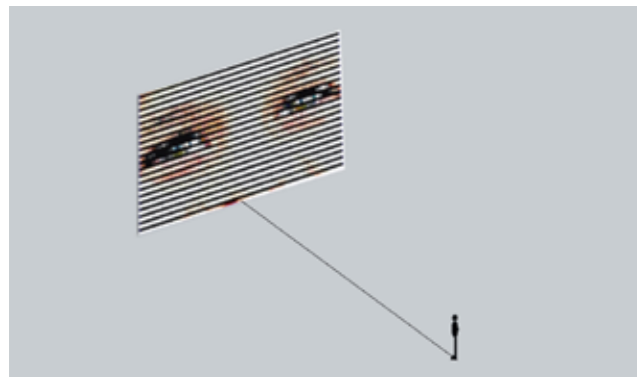
*Illumesh®: fascinating interplay of colours for large areas (17)*



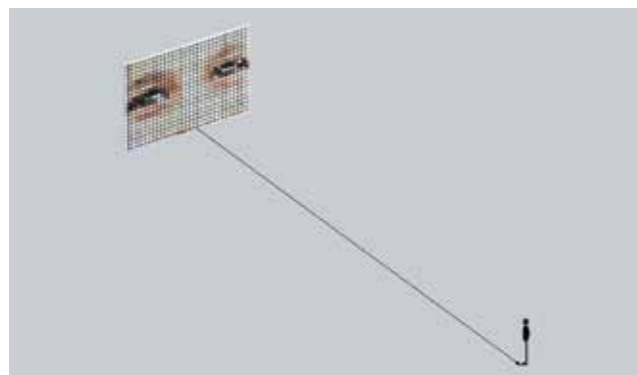
# IDEAS SYSTEMATICALLY IMPLEMENTED.



Highest resolution – minimum viewing distance



Average resolution – average viewing distance



Lowest resolution – maximum viewing distance

Each media facade is a unique, customer-specific showcase. Its optimum efficiency and acceptance is based on four factors:

- \_ The type and objective of the application
- \_ The location and viewing distance
- \_ The design and size
- \_ The brightness of the media facade

The technical design takes these factors into account when defining the

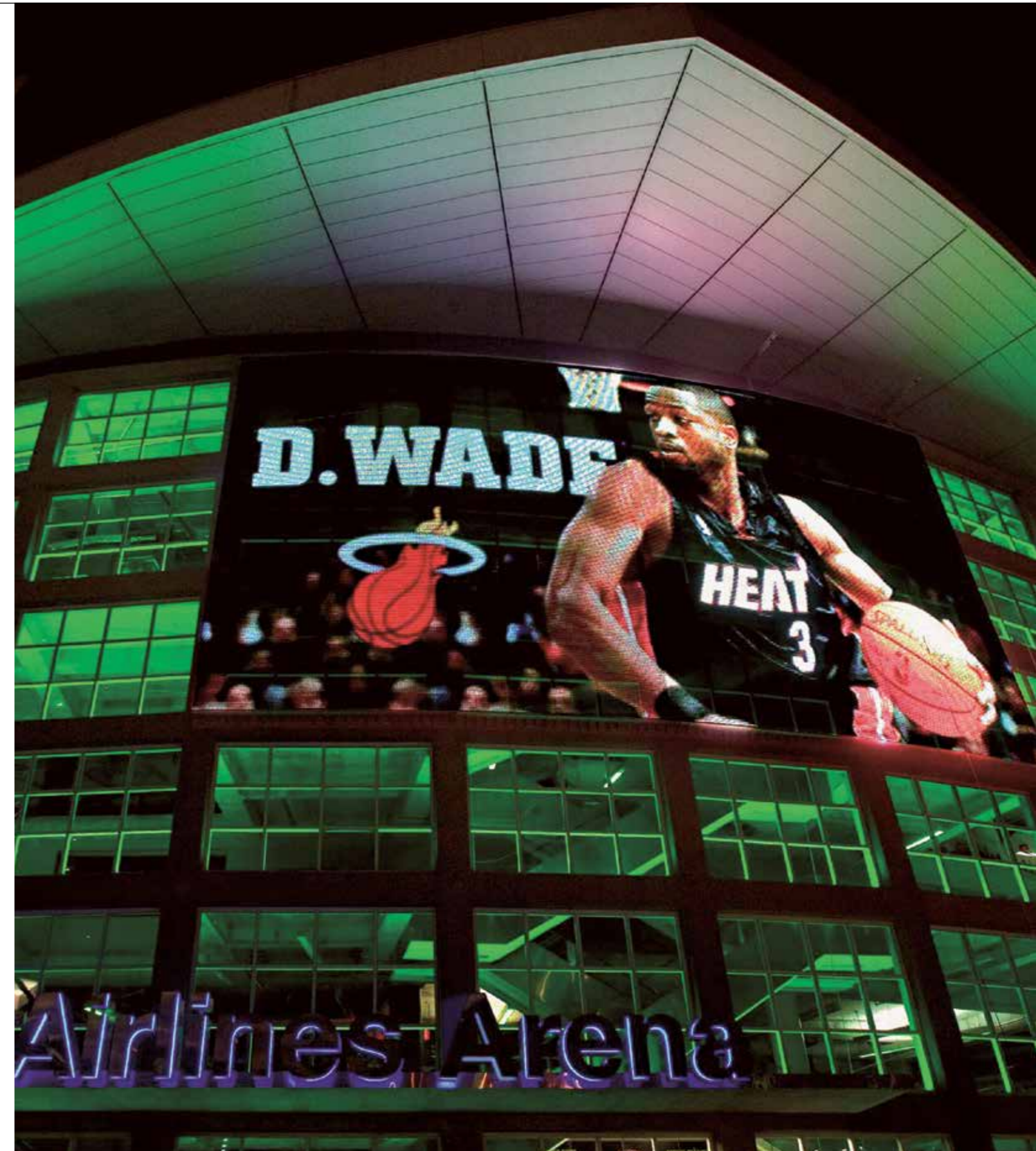
- \_ Media facade system
- \_ LED technology
- \_ Image resolution
- \_ Pixel grid
- \_ Type of image content

Based on these factors, our experts – architects and engineers of various disciplines – then draw up the foundations for planning a specific media facade. These include

- \_ Engineering and system design
- \_ Workshop drawings
- \_ Calculation of statics and wind loads
- \_ Selecting the type of mounting

The shorter the distance between the viewer and the media facade, the closer the pixels need to be arranged to one another for a coherent and recognisable image. The pixel grid is defined by the horizontal and vertical spacing between the LEDs.

Employing the latest RGB SMD LED technology, **Mediamesh®** significantly reduces this spacing. Thanks to the high packing density of the individual SMD LEDs, significantly more LEDs can now be arranged in the same area, which offers a tighter pixel grid.



Mediamesh®: American Airlines Arena in Miami (18)

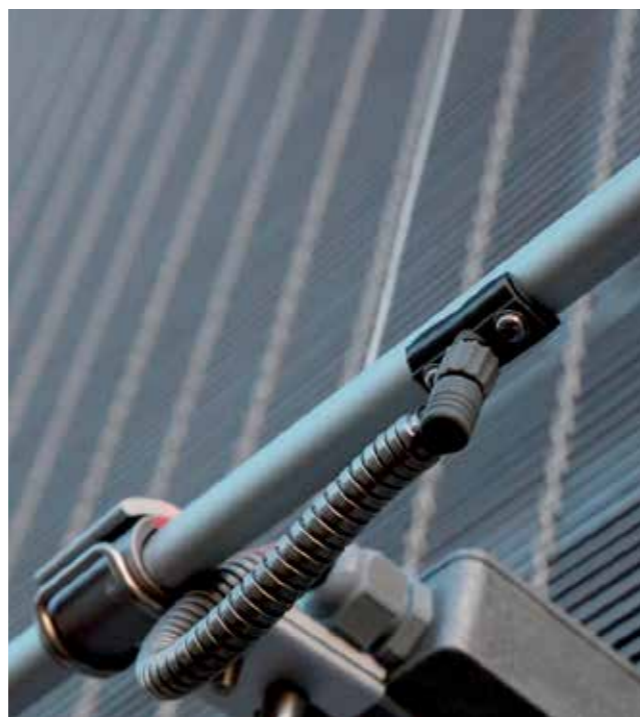
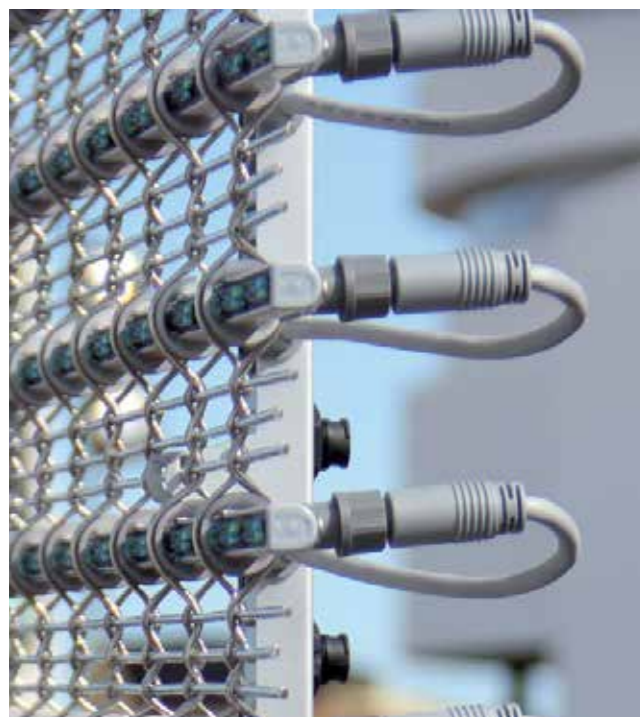


# A TRULY HOLISTIC PARTNERSHIP.

As an experienced system supplier, we support you throughout the entire project, providing you with consulting, planning, mesh production, assembly and training services. With a concrete requirements analysis, feasibility study and specification of the suitable construction and media components, we then make sure that you have all the information you need to make the right decision. Once a contract has been awarded, our architects start work on a concrete implementation plan. We use ultra-modern looms to produce the mesh and then equip it with the project-specific LED profiles.

Fully pre-assembled with LED profiles and all cabling, we then roll up and deliver your **Mediamesh®** or **Illumesh®** media facade to its intended installation location. Here, the mesh is hung in position and tensioned using the tried and tested method with

round profiles and eyebolts. By offering installation of the technology, as well as handling of the initial upload, commissioning, project documentation and training, we ensure that your media facade is successfully launched.



The virtually invisible cabling is integrated into the **Mediamesh®** (left) and **Illumesh®** (right) system



**Mediamesh®**: International Convention Center, Tripoli/Libya (21)