

A glass “blue sail” adorned with the Olympic rings sits in front of a wood façade. The space for fitting luminaires between the sail and the façade varied from a manageable 4 ft to a confined 18 in.

# OVAL EVERLASTING



Photos: Bob Matheson

Thanks, in part, to a memorable lighting scheme, the Richmond Olympic Oval will live on long after the 2010 Winter Games come to a close

**BY PAUL TARRICONE**

Gold, Silver, Bronze—pretty ho-hum stuff. Hundreds of those medals were handed out during the 2010 Winter Olympics in Vancouver, Canada. But “sexiest” Olympic venue? That’s one for the trophy case. The Richmond Olympic Oval in British Columbia, Canada, earned that honor from *Lifetime* magazine (published by watch manufacturer Omega) in late 2009—one of several medals hauled in by the 400-meter, long-track speed-skating venue. It also received a commendation for its structural design in the 2009 World Architectural Festival Awards program; a 2009 Award of Excellence from the Royal Architectural Institute of Canada; and the 2009 Award for Sports or Leisure Structures from the Institution of Structural Engineers.

Move over, Apolo Ohno, the design team for the Richmond Oval, led by architect Cannon Design, may also end up on the front of a Wheaties box.

Alongside the architect on that prospective cereal box would be Galina Zbrizher, principal Total Lighting Solutions, Vancouver, who was responsible for lighting the exterior (excluding landscape lighting) and the main lobby. The three most critical design criteria for the Oval, she says, were to “create an iconic building, build the best Olympic venue possible and leave a heritage building to be used after the Olympics.”

Located minutes from Vancouver International Airport along the banks of the Fraser River, the 8,000-seat Richmond Olympic Oval is widely considered to be the

most architecturally compelling of the 15 venues used during the Winter Games. Its most prominent elements are a “blue sail” façade element adorned with the Olympic rings; intricately carved, A-shaped concrete buttresses that line the exterior; and wood canopies and soaring wood arches—made of recycled lumber—that comprise the massive 6.5-acre roof.

Zbrizher relied on a combination of uplighting, downlighting and grazing techniques to illuminate all sides of the building and perimeter walkways. Luminaires were cleverly hidden within the architecture, recessed in-ground and mounted to the buttresses and canopies to create the effect.

Not surprisingly, luminaires were not to be visible on the side of the building that incorporates the so-called “blue sail.” The glass sail sits in front of a curved wood façade element that rises above it. The façade was to be illuminated; however, the space between the façade and the sail varied from a manageable 4 ft to a confined 18 in., creating a tight squeeze for the 100-W ceramic metal halide fixtures which were to be mounted within this space. Moreover, different aiming angles were required, not only due the various setbacks but because of the changing heights of the curved wood surface.

## RAIN WATER AS ART

The wave-shaped roof is highlighted by arched wood glulam trusses supported on the north and south façades by 15 pairs of massive concrete buttresses that also act as a rain water manage-



To light the art in the concrete buttresses, two in-ground uplights were recessed in the gutter. Two concealed CMH spotlights mounted on both sides of the downspout also graze the carvings. Photo below, CMH floodlights are mounted on ledges above the buttresses to uplight the underside of the wood canopies.





Outside the main lobby—where the buttresses do not have carvings and the canopies are higher and their extensions longer—recessed in-ground 100-W PAR38 CMH luminaires with internal louvers uplight the wood.

ment system. Each buttress incorporates a runnel that carries rain from the roof into channels within the plaza paving and then into the Fraser River, diverting the water from the sewer system.

The design of these runnels, however, is hardly utilitarian. Artist Susan Point, of the Musqueam Indian Band, designed different artwork for each runnel featuring sculptures of salmon, herons and

the Fraser River. To light the art in the buttresses, Zbrizher specified two in-ground, asymmetric uplights (39-W T4 CMH), which are recessed in the gutter under each respective carving. The illuminated three-dimensional carvings have essentially turned ordinary rain run-off into a work of art. “The lighting effect is best when the water is running down the channel and ‘catches’ the 3-D surfaces,” she



Downlights/adjustable landscape fixtures were mounted in pairs at the edges of the canopies to light the walkways outside of the Oval, eliminating the need for pole-mounted luminaires that would clutter the perimeter.

says. “It creates whirls, swirls and movement that can be transparent or translucent.” The technical challenge, Zbrizher adds, was ensuring that the luminaires were submersible and wet/dry rated. These in-ground luminaires are supplemented on each buttress by two concealed 20-W CMH spotlights mounted on both sides of the downspout to graze the carvings.

#### TIED TOGETHER

The Oval’s much-heralded roof, canopies and interior ceiling are comprised of 1 million board-ft of salvaged British Columbia wood previously damaged by pine-beetle infestation. The roof is believed to

be the largest surface ever covered in the once-discarded wood. Zbrizher’s mandate was to use lighting to “tie together” the exterior (in particular, the underside of the wood canopies) and the interior (the ceiling of both the main lobby and the arena, itself). “The transition from outside to inside had to be almost seamless,” she says.

CMH floodlights (100-W) were mounted on ledges above the carved buttresses to uplight the underside of the wood canopies to a level similar to the brightness of the ceilings inside. Supplementary 39-W T6 CMH downlights/adjustable landscape fixtures were mounted in pairs at the edges of the canopies to light the

walkways outside of the Oval, eliminating the need for pole-mounted luminaires that would clutter the perimeter. On the side of arena featuring the blue sail, low-wattage recessed CFL downlights with good glare control were used to illuminate the walkway under the sail.

A different design scheme was adopted outside the main lobby, where the buttresses do not have carvings/rain water leaders and where the canopies are higher and their extensions longer. Here, Zbrizher used recessed in-ground 100-W PAR38 CMH luminaires with internal louvers to uplight the wood.

Finally, to help carry the exterior lighting concept to the interior, small

profile T5 asymmetric uplights were mounted on the mullions in the main lobby in combination with asymmetric semi-decorative/industrial character, HID scoops cantilevered from the edge of the balcony. Downlighting is provided by surface-mounted 39-W T6 cylinders. All of these techniques used to light the façade, perimeter and lobby ultimately tie in to the arena lighting, itself—400-W metal halide downlights which had been specified much earlier.

The 33,750-sq meter Oval is the venue for 12 medal events. After the Olympics, the \$178 million building will become an international center for high-performance athletes, a training and competition facility for many Paralympic sports, including wheelchair rugby, wheelchair basketball and adaptive rowing, and most importantly a multi-use facility open to the local community. “An oval for all,” as Zbrizher describes it. 🏏

#### METRICS THAT MATTER

##### The Richmond Olympic Oval

Fixture Types: (exterior-façade and perimeter): 7

LEED: Silver certification being considered by the city of Richmond



**About the Designer:** Galina Zbrizher, LC, IALD, Member IES (1986) is the founder and principal of Total Lighting Solutions Inc., a Vancouver based lighting design

firm. Over the last 25 years, she has designed interior and exterior lighting for a wide variety of projects in both the private and public sectors. Noteworthy projects include the lighting design for all 16 stations of Canada Line LRT, the airport in Santiago de Chile and the domestic terminal of the Vancouver International Airport. She has served on IALD’s Board of Directors and as a president of IES Toronto Section in 1994.