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Synthesis Design + Architecture Wins Competition to Design Pavilion for Volvo’s New Hybrid Electric

July 1, 2013, Los Angeles—Synthesis Design + Architecture (SDA), the forward-thinking Los Angeles-based architecture firm led by architect and USC professor, Alvin Huang, has recently won an international competition to design a rapidly deployable pavilion to showcase Volvo’s new plug-in electric hybrid, the V60.

Volvo’s “Switch to Pure Volvo” competition, organized by international architecture magazine THE PLAN, called for an innovative and original design for a temporary pavilion that expressed a “strong and creative identity” to showcase the car at fairs and open air presentations in Italian squares. SDA

SDA’s approach was to use the car’s design as a flexible and sustainable vehicle as the basis to reimagine the typical trade show pavilion.

Toward this end, SDA emphasized the qualities of dynamic form, interactivity, visual impact, functionality, and efficiency to create a novel temporary structure that while iconic also offers high-performance. The design integrates structure, form, and performance by utilizing a continuous organic form composed of HDPE mesh fabric with integrated photovoltaic panels tensioned over carbon fiber rods. In fact, the digitally designed contours of the mesh fabric are what bend the rods into their curvy forms. The result calls to mind the image of an elegantly diaphanous orchid.
The jury felt SDA’s solution was the strongest and most original out of over 150 submissions from around the world. From jury statements, the pavilion embodied “visual impact”, “high quality”, and “the advancement of technology through form, materials, and functionality.” They appreciated that the pavilion also functioned as a “photovoltaic shelter”.

“This competition presented us with a unique challenge as architects,” says SDA principal and founder, Alvin Huang. “It addressed issues we are constantly working on and offered the potential to address sustainability as something much broader that can also encompass issues of identity, contemporary culture, materiality, permanence, and personal mobility.”

The pavilion itself is highly mobile. In SDA’s proposal, it is shown arriving on site in the back of a V60, completely collapsed into a small tent bag. “It was important that it be easy deploy, break down, and move around,” says Huang. What is truly remarkable about the design is that once assembled it looks like one continuous smooth surface without the usual expression of components.

For SDA it was important that the design be imbued with the same vision of energy efficiency and sustainability as the V60. With its embedded photovoltaics the pavilion functions as “charger” for the V60 on display, with the charging cable concealed within and peeling away from the tubing.

The use of light weight high-tech materials and photovoltaic power generation makes the pavilion extremely cost-effective for fabrication, transportation, and set up. This is another factor that went into the jury’s decision. It does not require a large crew or the use of a truck or other additional equipment for installation.

In the broader sense, the pavilion expresses SDA’s on-going exploration of integrating performance with dynamic forms and pushing the boundaries of materials and geometries to create compelling and moving spatial experiences.

Engineering firm Buro Happold is providing structural engineering. As Greg Otto, principal of Buro Happold Los Angeles says, “Membrane structures present numerous challenges in converging architectural intentions with engineering first principles. Our engineering team will refine the geometries prepared by SDA using proprietary software based upon dynamic relaxation to optimize the form, design the structural boundary conditions, and ultimately pattern the fabric.”

In preparation for the official launch on September 15th in Italy—location to be disclosed at a later date—SDA’s team is currently developing the design as the pavilion heads into fabrication. The team will also be working in collaboration with the Volvo Design Center in Camarillo, California.
About Synthesis Design + Architecture

Synthesis is an emerging contemporary design practice with over 20 years of collective professional experience in the fields of architecture, infrastructure, interiors, exhibitions, furniture, and product design. Founded in 2011, our work has already begun to achieve international recognition for its design excellence. Our diverse team of multidisciplinary design professionals includes registered architects, architectural designers and computational specialists educated, trained, and raised in the USA, UK, Denmark, Portugal, and Taiwan. This diverse cultural and disciplinary background has supported our expanding portfolio of international projects in the USA, UK, Russia, Thailand, and China.

Originally founded in London January 2011 by Alvin Huang, Synthesis Design + Architecture is a forward thinking international design firm exploring design at the intersection of Performance, Technology and Craft. Following an appointment as Assistant Professor of Architecture at the University of Southern California, Alvin subsequently relocated the office to Los Angeles. The design trajectory and ethos of the office is rooted in balancing both the experimental and the visionary with the practical and the pragmatic to achieve the extraordinary.

Alvin Huang Profile

Alvin Huang is the Founder and Design Principal of Synthesis. He is an award-winning architect, designer, and educator specializing in the integrated application of material performance, emergent design technologies and digital fabrication in contemporary architectural practice. His wide ranging international experience includes significant projects of all scales ranging from hi-rise towers and mixed-use developments to bespoke furnishings.

Prior to forming SYNTHESIS, he gained significant professional experience working with Amanda Levete Architects, Future Systems, Zaha Hadid Architects, and AECOM.

Alvin received a Master of Architecture and Urbanism from the Architectural Association Design Research Laboratory (2004) in London and a Bachelor of Architecture from the University of Southern California (1998) in Los Angeles. His work has been widely published and exhibited and has gained international recognition, including being selected to represent the UK at the Beijing Biennale in 2008. In 2009 he was awarded a D&AD Award for Environmental Design.

Alvin is currently a Tenure-track Professor at the USC School of Architecture in Los Angeles. He has also taught design studios at the Architectural Association (London), Tsinghua University (Beijing) and Chelsea College of Art (London). He has been an invited critic and guest lecturer at various institutions in the UK, US, Germany, Spain, Israel, Switzerland and China.

For high-quality images please use the following link:
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