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ShowCase: Vectorfields, Pt. 1 - Frank & Kim Residence

Sep 28, 2010

ShowCase is an on-going feature series on Archinect, presenting exciting new work from designers representing all creative fields and all geographies.



This ShowCase, the Frank & Kim Residence in Pasadena, is Part 1 of a two-episode installment dedicated to the exciting work of Los Angeles-based firm [BplusU](#) and their recently published book [Vectorfields](#). To also see Part 2, click [here](#).

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The Frank and Kim residence is located 9 miles north of downtown Los Angeles on a hillside property in Pasadena. The existing two story single family house is placed at the end of an elongated property, on the edge of the hillside with a large terrace and a pool overlooking San Marino.

Besides some major remodeling inside the house, we were asked to redesign the front property so it can be used for larger social gatherings and to create a new spatial continuity between the front yard, the entertainment areas of the house and the terrace, pool and garden in the rear.

Type: Private Residence
Location: Pasadena, California
Client: John Frank & Diann Kim
Program: New canopy and garage, remodel of interiors, implementation of sustainability concept
Size: 4,300 sqft
Completion Date: 2010
Material: garage: concrete and fabric; canopy: fabric & steel; interiors: resin, polycarbonate, limestone, wood, glass
Architect: B+U
Team: Herwig Baumgartner (principal), Scott Uriu (principal), Slavko Vukic, Daniel Saltee, Phillip Ramirez, Sven Neumann

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The translucent fabric of the canopy filters day light at varying amounts depending on the angle (Photo: BplusU)

As a main feature element for the front yard, we designed a large canopy that will be used for receptions and social events, and articulates a new dynamic entrance to the house. The 65 feet long cantilevering steel structure is clad with a white translucent fabric. The canopy is lit from the inside with a combination of white and colored LED light fixtures to illuminate the garden with a soft glow during the evening, articulating a vibrant path to the building and marking a spatial continuity throughout the site.



[↑ Click image to enlarge](#)

The play with gradient transparency is best viewed at nighttime (Photo: [Joshua White](#))



↑ [Click image to enlarge](#)

The canopy seen from below at night (Photo: [Joshua White](#))



↑ [Click image to enlarge](#)

The garage mixes fabric and concrete as primary materials (Photo: [Joshua White](#))

As part of the design process, we developed many iterative models using a continuous folded surface geometry that emerges from a single plane and through techniques of splitting (delaminating) and shifting creates a multi-layered volume with varying translucent qualities. We were interested in the effect this geometry had on the gradation of light. By changing the material property, we were able to produce the desired light quality from the inside utilizing white & colored LEDs as a light source.



↑ [Click image to enlarge](#)

A combination of white and colored LED light fixtures illuminates the garden with a soft

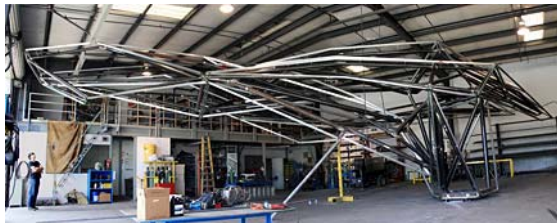
glow during the evening (Photo: [Joshua White](#))



[↑ Click image to enlarge](#)

At night, the illuminated canopy articulates a vibrant path to the building, marking a spatial continuity throughout the site (Photo: BplusU)

The same had to work during daytime as sunlight passes through the surfaces from the outside. As part of this process, we built many prototypes with different fabric materials and revisions to the geometry before finding the right relationship of material property to geometry to achieve the effect we were looking for. Finding the right material was a big part of the challenge.



[↑ Click image to enlarge](#)

The 65 feet long cantilevering steel structure of the canopy under construction (Photo: BplusU)



[↑ Click image to enlarge](#)

The finished steel structure ready for transport (Photo: BplusU)



[↑ Click image to enlarge](#)

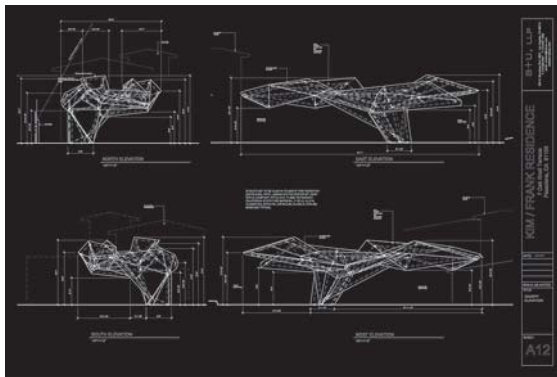
Siesta (Photo: BplusU)



↑ [Click image to enlarge](#)

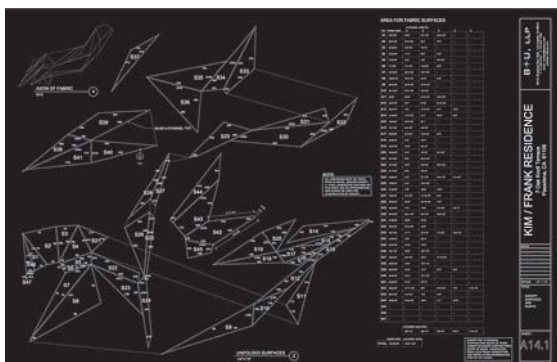
Carefully maneuvering the canopy into place (Photo: BplusU)

Originally we were looking at thin sheets of Corian, a solid surface material with translucent qualities, but the material was too heavy and started sagging over the long spans. So we started researching fabric, which we have been interested in using as a building material for a long time. We were looking for a canvas like fabric with a flat finish that had the right amount of translucency and that fulfilled all the technical and quality requirements, like UV resistency, fire rating, durability, etc to last for the next 20+ years. Sail fabrics had the translucency qualities but were not resistant to UV and fall apart over years, while most architectural fabrics come in a glossy finish and look rather opaque during the daytime.



↑ [Click image to enlarge](#)

Canopy elevations



↑ [Click image to enlarge](#)

Fabric layout plan

It was the start of a design process where material properties and geometry were closely linked together. Issues of a gradient transparency and the use of fabric as a building material continue to play an important role in our work.

BplusU is a full service architecture firm headquartered in Los Angeles, California, established in 2000 by architects Herwig Baumgartner and Scott Uriu who have over 15 years of professional experience each. BplusU's mission is to push the boundaries of architecture and urban design. Using technology and research in combination with hands-on design, their projects are often informed by the mapping and transforming of imperceptible forces using sonograms. BplusU has



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BplusU's work was recently exhibited at: the 12th Architecture Biennale in Venice, The A+D museum in Los Angeles, the Milan Stadtkrone show, in Milan, Italy; at the University of Applied Arts in Vienna; and at the CCRD in Hollywood, California. Their work has been widely published in magazines and books such as Architectural record, Angeleno magazine, Azure magazine, The Architect's Newspaper, FORM magazine, Future Arquitecturas, Architecture live 6, Elemente magazine, Interior and Design, Dialog, 360 Modern Architecture, ArcCA, Mark magazine, The 1000 x Architecture of the Americas, Capital magazine, Arte magazine, Archinect, as well as on television and radio interviews.



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ShowCase: Vectorfields, Pt. 2 - City Futura

Sep 29, 2010

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"City Futura" is a visionary urban design proposal for an expansion of the City of Milan set in the year 2210. The project is part of a development plan for fifteen different sites located on the outer ring connected by the Milan Metro line. An eclectic international group of architects including Mad Office from Beijing, R&sie(n) from Paris, Rojkind Arquitectos from Ciudad de México and B+U from Los Angeles among others were invited to each choose one of the available sites and envision an "arch-urban object". Our site is located in the North-West part of the city close to Piazzale Giovanni dalle Bande Nere adjacent to the Bande Nere metro train station. City Futura is superimposed over the existing city leaving most of its buildings untouched and tapping into existing infrastructure and expand it.



[↑ Click image to enlarge](#)

BplusU's visionary urban design proposal "City Futura" for an expansion of the City of Milan set in the year 2210

Urban design concept - Tissue and Void

The 600m tall structure hovers over the city covering about a million square meter area and is divided into nine districts that are organized around three programmatic topics including: A- Civic; B- Entertainment and Recreation; and C-Art, Fashion and Manufacturing. Initially the nine districts were represented as spherical void spaces and randomly placed across the site, floating above the ground and varying in size and height they became placeholders for enormous civic arenas which expand up to 250

Type: Urban Design Concept
 Location: Milan, Italy
 Client: City of Milan
 Program: City for 70,000 inhabitants
 Size: 6.5 million square meters
 Architect: B+U
 Team: Herwig Baumgartner (principal), Scott Uriu (principal), Dan Hutchins, Stephan Sobl

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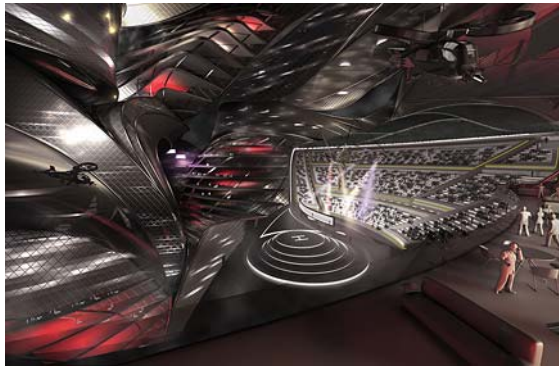
meters in diameter.



↑ [Click image to enlarge](#)

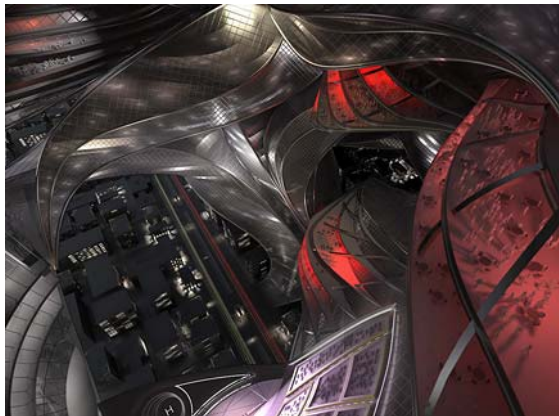
City Futura is superimposed over the existing city and tapping into existing infrastructure

These public super centers act as a scaffold for developing a new kind of urban tissue that is not defined by conventional massing and zoning rules within a two dimensional city grid but are based on emergent growth models and developed by linking together families of massing elements that form larger subsystems in-between and around these public hubs, which then in turn are linked again to give rise to a grander systems vastly expanding across the city. Elevating this system off the ground exposes the underside of the city, a quasi sixth façade. It allowed us to rethink the city quite literally from the ground up envisioning how one might move through it and how infrastructure might develop, how our spatial perception and experience might change, how our organizational models can be expanded and new interrelations can be made.



↑ [Click image to enlarge](#)

Civic arenas inside the structure can expand up to 250 meters in diameter



↑ [Click image to enlarge](#)

The 600m tall structure hovers over the city covering about a million square meter area

City Futura touches ground and connects with the "old" city at several strategically important locations, which are related to existing or newly proposed infrastructure, including train stations, metro lines and sky trains that connect the 70,000 plus inhabitants of this new part of town with the rest of Milan and the world. The Districts that can be best described as enormous public outdoor spaces, which expand vertically

and horizontally approximating the spherical void, which based on its geometry is mostly covered, but has large openings bringing in daylight and expanding views to the city all around.



↑ Click image to enlarge
Physical model



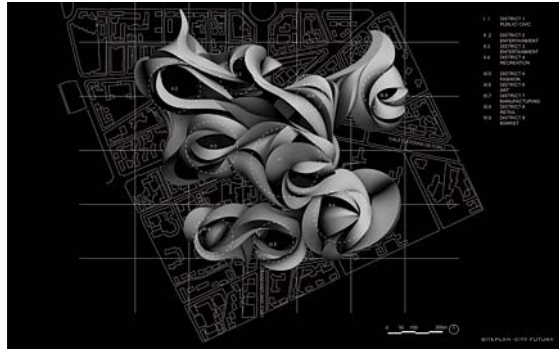
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Physical model



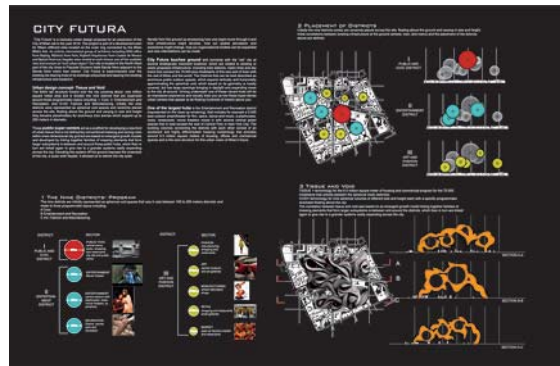
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Physical model

Driving underneath one of these vibrant hubs will be an impressive experience and visually draw you up into these hyper-dense urban centers that appear to be floating hundreds of meters above you. One of the largest hubs is the Entertainment and

Recreation district (represented on the close up rendering), that includes for example a 5,000 seat outdoor amphitheater for film, opera, dance and music; a playhouses, clubs, restaurants, movie theaters mixed in several vertical green spaces that in total exceed the size of Central Park in New York City.



↑ Click image to enlarge
City Futura site plan



↑ Click image to enlarge
City Futura diagram

The building volumes connecting the districts with each other consist of an exuberant and highly differentiated massing morphology that provides around 6.5 million square meters of housing, offices and commercial spaces and is the core structure for this urban vision of Milan's future.

City Futura is currently featured at the 12th Architecture Biennale in Venice, Italy from August 29 – November 21, 2010: Venezia, Giardini and Arsenale, opening times: 10 a.m. – 6 p.m.

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