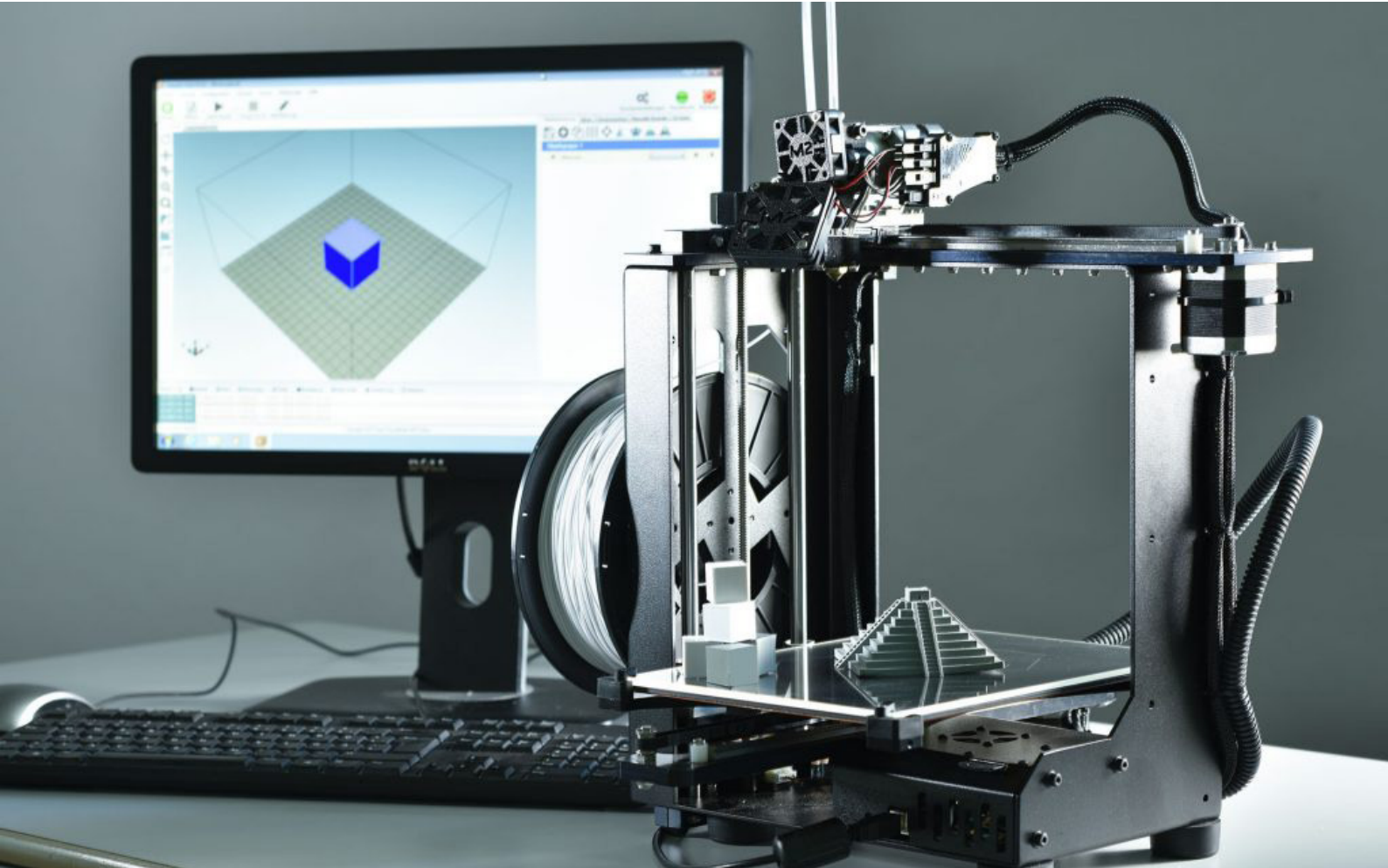


Now 3D Print with PVC Too!



There are new developments, almost every half hour as is reported, in the 3D printing industry and yet a recent invention has left the industry unexpectedly surprised with its sudden onset and unusual choice of material: PVC.

PVC had been hitherto overlooked as a material suitable for 3D printing. But now there is an industry-first: the development, testing and proof of a PVC-based filament.

3D Vinyl, as this new wonder material has been branded, is a pioneering invention to suit the polymer-based 3D printing market segment in order to introduce a more durable and sustainable alternative to the incumbent 3D-printing polymers now being commercialised. The product is meant to be completely unique with a lot to offer the industry and opens the way for PVC into the burgeoning world of advanced manufacture.

This new PVC material has the thermoplastic qualities required for 3D printing, and allows everyone, from hobbyists to pros, to dive into more advanced manufacturing and helps move past previous limitations imposed by the traditional materials used in prototyping and low-volume production. This will also most likely garner a great deal of attention from all sectors of the 3D printing industry seeking a high quality and versatile new material.

Some of the unique features of 3D Vinyl are UV resistance, weatherproof qualities, solvent resistance, fire retardance, improved rigidity, low embodied energy content and most importantly, a sustainable footprint – requiring only 50 percent fewer fossil fuel inputs, as it uses abundant natural gas.

There's a great deal of excitement surrounding this new material, and Chemson Pacific, the inventors, have already lined up several sales partnerships.

The Floor

One of the most exciting contemporary artists of our time, Korean Do Ho Suh, created a large sculptural installation that doesn't look like much...until you get close.

Best known for his intricate sculptures that defy conventional notions of scale and site-specificity, Suh draws attention to the ways viewers occupy and inhabit public spaces. In several of the artist's floor sculptures, viewers are encouraged to walk on surfaces composed of thousands of miniature human figures.

Whether addressing the dynamics of personal space versus public space, or exploring the fine line between strength in numbers and homogeneity, Suh's sculptures continually question the identity of the individual in today's increasingly transnational, global society.

Glass plates rest on thousands of multi-coloured, miniature, PVC figures who are crowded together with their heads and arms turned skyward. Together,



they are holding the weight of the individual visitor who steps onto the floor. The figures represent the diverse and anonymous masses of people who support and/or resist the symbolic floor.

Artist | [Do Ho Suh](#), Seoul, South Korea

Place | [Lehmann Maupin Gallery](#), New York, USA

Technical info | PVC Figures, Glass Plates, Phenolic Sheets, Polyurethane Resin

Picture credits | [Lehmann Maupin Gallery](#), [Do Ho Suh](#)





Blue Planet

The Olympic Live Site is beautifully arranged at the most prominent location of the Barra da Tijuca Olympics site. It hosted major Olympic Events for the Rio Olympics 2016: ceremonies, cultural shows, or to just provide shade and a resting place for the fans of the Games.

Designed, detailed and guided, during fabrication and erection phases, by German studio Schlaich Bergermann Partner, it was completed as a self-sustained, semi-circular PVC mesh membrane roof that certainly stands out as one of the landmarks of the Olympic Site. Triangular mesh membrane panels, featuring extreme transparency, are stabilised by catenary cables which are spread apart by the cantilevering struts.

The triangular panels are arranged along the semi-circular layout in two levels, while upper and lower triangles are always offset by half a bay, resulting in a beautiful lotus-like layout in plain view.

Architects | [Schlaich Bergermann Partner](#), Stuttgart, Germany

Location | Rio de Janeiro, Brazil

Technical info | PVC mesh membrane

Picture credits | [Dhani Borges](#)



The Houston Penetrable

The Museum of Fine Arts in Houston has hosted “The Houston Penetrable,” an exhibition dedicated to the Venezuelan artist Jesús Rafael Soto (1923-2005).

Recognised in his lifetime as a pioneer in the landscape of modern art, curators and scholars are now beginning to revisit Soto’s posthumous impact on the history of art — an international trend that is illustrated by the artist’s prominent feature in solo and group shows throughout Europe and North America.

Born in Venezuela in 1923 and based, after 1950, in Paris, where he exhibited alongside Alexander Calder and Jean Tinguely, Soto made over 25 Penetrables in his career; he died in 2005, at 81.

A blend of geometric abstraction, Minimalist sculpture and playground, these simple grids of colourful PVC tubing were usually suspended from free-standing frames and often placed outside. Soto always considered them ephemeral, and only a handful have survived the inevitable wear and tear.

With a simple abstract-geometrical vocabulary, Soto developed an innovative artistic language with which he articulated immaterial elements and sensible states. Time, space, movement, and energy become perceptible values through dynamic, pulsating compositions that engage viewers in an interactive exchange.

Ethereal and pristine, “The Houston Penetrable,” is an art

installation where sixty visitors at a time are allowed into its sea of 24,000 glistening clear PVC tubular strands hanging nine metres from ceiling to floor and spanning the open mezzanine. Floating within is an orb of radiant yellow created by strands painted to compose a perfect ellipse. Viewers can activate the perceptual maze of vibrating light and colour by playing among the tubes, as the work’s artist intended.

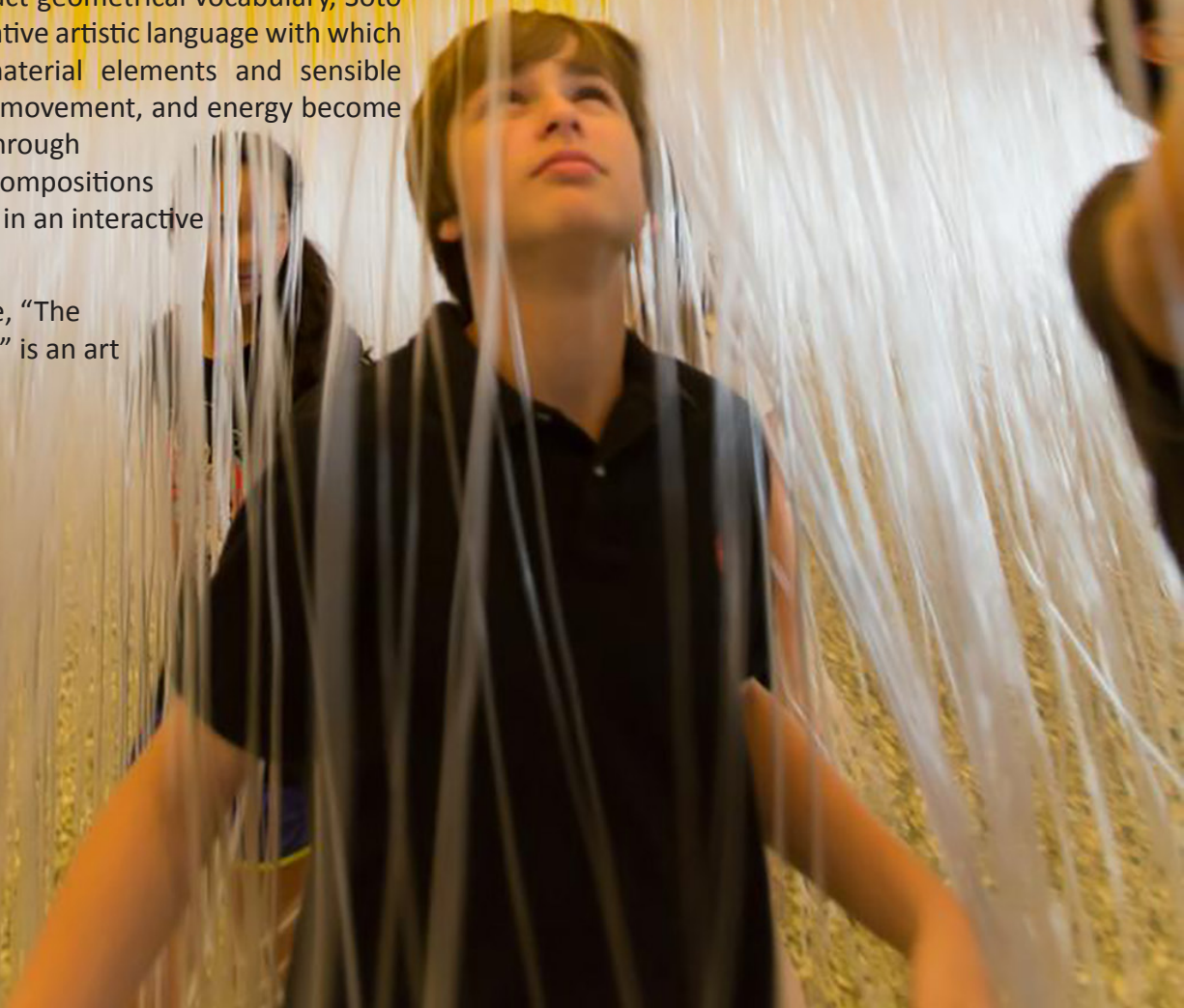
The Houston Penetrable is completed only by the viewer’s participation. Intended to be touched, handled, and waded through, the strands compose a floating yellow orb on a transparent background. The 24,000 PVC tubes, individually hand-painted and tied, hang two stories high, from the ceiling to the floor, in the Museum’s Cullinan Hall.

Artist | [Jesús Rafael Soto](#), Caracas, Venezuela

Place | [Museum of Fine Arts](#), Houston, Texas, USA

Technical info | PVC tubes

Picture credits | [Museum of Fine Arts](#)



The Observatory

Located in Northwest Arkansas, the Observatory, designed by Steven Jones, was constructed for an astronomer as a functional and unique space for viewing the day, and night, sky.

The corrugated PVC wall panels add a sense of lightness and colour to the structure. During the day their transparency shows how the observatory is constructed and at night, allows the building to glow like a lantern to signify that the astronomer is working. The glowing effect enables the astronomer to see at night while keeping his eyes adapted to the dark when moving between observatory, observation decks, and storage.

The roof is composed of residential, standing-seam metal roof panels and uses standard garage door hardware and springs to open and close.

Along with the lighting the colour accentuates the dynamic form. The typical dome or shed observatory is pre-conceived as a static form used only at night.



This Observatory is also used for solar observation and will be seen throughout the day. Its form stimulates the imagination with emotion and movement, as it seems to take off and soar to the sky. The colour of the corrugated panels symbolises the sky, while the yellow reflects the sun and the colour of the autumn grass. In contrast, the grey of the exterior plywood and roof panels represent the clouds after a storm front has passed signifying clearer skies.

Architects | [Steven Jones Architect](#), Marina del Rey, CA – USA

Location | Springdale, AR, USA

Technical info | PVC panels

Picture credits | [Steven Jones](#)



Monumental Sculptures

California artist Ann Weber transforms the ordinary medium of cardboard, PVC and polyurethane into impressive large-scale sculptures reminiscent of pods, gourds, and organic spires.

Ann started working with PVC and cardboard in 1991. These materials allow her to make monumental, yet lightweight, forms, and eliminate the cumbersome process of clay. Frank Gehry's cardboard furniture were her initial inspiration. Her abstract sculptures read as metaphors for life experiences, such as the balancing acts that define our lives. "How far can I build this before it collapses?" is a question on her mind as she works. Ultimately her interest is in expanding the possibilities of making beauty from common materials as PVC and polyurethane.

The sculptures have the appearance of large baskets woven into monumental forms with a rich patina created from layers of shellac applied to the surface. Visitors walk among and through the towering shapes, some over five metres tall, in an oversized wonderland of contoured forms.

Ann Weber's large sculptures made from woven strips of PVC, and cardboard, synthesise ancient and modern, craft and high art. The artist insists on the psychological component in her works, and she wants the viewers to bring their own associations to the artwork. With a palette of simple forms (cylinders and circles), her sculptures are symbolic of male and female forms and the natural world.

Artist | [Ann Weber](#), San Francisco, USA
Place | [Dolby Chadwick Gallery](#), San Francisco, USA

Technical info | Cardboard, PVC sheets and pipes, polyurethane

Picture credits | M. Lee Fatherree



Palais Thermal

For 165 years the old Graf-Eberhard Baths, in Bad Wildbad, situated in the northern part of the Black Forest, have been considered one of Europe's finest bathing temples.



Built in 1847 directly over a thermal spring, the baths have undergone many different extensions and modernisations over the years. The ensemble is characterised by the new Eberhard baths, a terraced structure from the '70s, which had been empty for some years.

These historic leisure baths with their 'Maurische Halle' (Moorish Room) and 'Fürstenbädern' (Prince's Baths) are now extending their range of facilities with an outside, canvas-covered, spa area.

In order to prevent people looking in from the nearby hotel, and to offer sauna users privacy, the entire north-facing side of the pool level has been designed with a filigree PES/PVC membrane construction made by German formTL. It offers protection against the weather, as well as framing the view towards the south and east of the valley.

Despite the geometrical and constructional challenges, or, rather, because of these, the light construction appears to float. Its basic structure consists of a pre-tensioned membrane with three high points and lateral anchoring. In order to offer effective protection from prying eyes, the membrane roof is tilted on



its longest axis, forming some extreme geometrical shapes: the construction comprises some very steep and some very flat areas, the latter posing a particular challenge due to winter snow.

Moreover, the organically shaped high-point rings around the masts are perfectly and geometrically integrated into the double-curved membrane surface, offering unhindered views up to the sky. The unusual length of the freestanding front side is extraordinary. Even on open ground, this construction would have been a challenge

Architects | [KTP Architekten](#), Ostfildern, Germany

Location | Bad Wildbad, Germany

Technical info | PES/PVC membrane

Picture credits | [Roland Halbe](#)



Neutrals

Anouk Kruithof is a Dutch artist whose exhibitions and books merge the social, conceptual, and photographic; performance and video. As evident in her recent solo show, at Amsterdam's Boetzelaer | Nispen Gallery.

Kruithof made a variety of works such as sculptures and photographed analogue screenshot-montages re-interpreting the imagery in a search for new value and new meaning. The works acknowledge that the strategically staged, sometimes Photoshopped and cropped imagery filling the Instagram accounts, which she has researched, lack integrity to be viewed as pure evidence. To her the bigger issue remains, of what the strategies of the various corporate/bureaucratic entities, doing the posting, are, and how much effect the images and accompanying text they post have on people's thoughts and actions in order to achieve their goals. Yet her main reason for studying these images is not to question the entities' goals and interests, but to express the inspiration that the images and the information contained in this new digital medium have given her. Together they communicate progress and the ambition of human endeavour in a very convincing manner.

According to Kruithof, now that everyone is to a certain degree a 'pirate', questions about the act of appropriation itself are no longer that relevant. However, all the works in Evidence revolve around the question of how a re-contextualisation of an image can add meaning. To explore a range of different possible meanings, Kruithof used different criteria when selecting the source screenshots that would comprise the starting point for a given work.

Neutrals is a set of seven sculptures, of metal and prints on different kinds of PVC sheets. The images on the prints are taken from screenshots of the TSA's Instagram feed showing neatly displayed groups of confiscated items, mainly weapons. For documentation, the identity cards of the contraband owners were part of the display, but for privacy reasons they were always blurred up to a point where even the gender or race of the

person were no longer discernible. Kruithof took out just those blurred ID cards and printed them on the different plastics.

The metal constructions which the prints are laying, or stretched on, form the sculptural bodies of a new physical existence, parallel to the original digital existence as images on an Instagram account. The metal shapes appear to have a de-humanised emotionality equal to the imagery added to them.

Artist | [Anouk Kruithof](#), Amsterdam, Netherlands

Place | [Boetzelaer & Nispen Gallery](#), Amsterdam, Netherlands

Technical info | PVC sheets

Picture credits | [Anouk Kruithof](#), Pim Top



Phill – Playground & Restaurant



Phill is a meeting place for the entire family in Bucharest, designed by the Rumanian NuCa Studio. It has a playground, a multi-purpose room and a small café on the ground floor and, a gourmet restaurant on the first floor.

The playground and the multi-purpose room are enclosed areas with independent light and acoustics scenarios and they accommodate activities from theatre and puppet shows to martial arts and ballet lessons. Upstairs, the dining area is an open space directly linked to the lobby. In between them, the small café communicates visually with the playground through a couple of round openings. The functions of the programme have their own agenda but at the same time they work closely together therefore the connection of the individual spaces was very important.

In order to link these different rooms, the walls were perforated by transparent openings and special attention was paid to the design of the stairs which climb their way to the first floor around a four-metre tall elephant. Phill's program has been generated by

the clients themselves as a possible response to their own needs regarding Romanian dining-out experiences.

The premises for picking the design typology was, alongside our personal passion for comic book, animation and vinyl toy subcultures, and the idea that kids' perceptions are anything but reductionist, and adults aren't that sober not to engage in any imaginative exercise. The elephant's role and the overall geometry is open for interpretation. The large degree of custom-made elements used for this fluid design goes beyond regular interior jobs: from the circular PVC window frames to the vinyl floor which separate the wall paint and PVC wallpaper designed by Dutch designer of Studio Job, everything was individually designed and executed on demand.

Architect | NuCa Studio, Bucharest, Romania

Location | Bucharest, Romania

Technical info | PVC windows, flooring and wall-covering

Picture credits | NuCa Studio



River of Winds

Kim Yun Soo is a Korean multi-media artist whose work spans mixed-media sculpture and installations to photography. The delicate and sublime works by Yun Soo Kim are a tribute to her process.

River of Winds is one of Kim's most iconic works, an installation of 54 low-lying vinyl objects based on the footprints of as many people. Kim hand-cut and layered more than 60 sheets of PVC for each footprint, transforming the original forms into an installation of what appear to be an infinitely expanding landscape. By doing so, she is able to materialise the enigmatic presence of the unidentifiable and indefinable world beyond what meets the eye.

Since 1999, Soo has been collecting the fingerprints and footprints of her close friends and acquaintances, recording their unique shapes and spirals and giving them a new dimension inspired by the natural world. Many of her works resemble a wave, where a single footprint ripples out into stacked shapes and

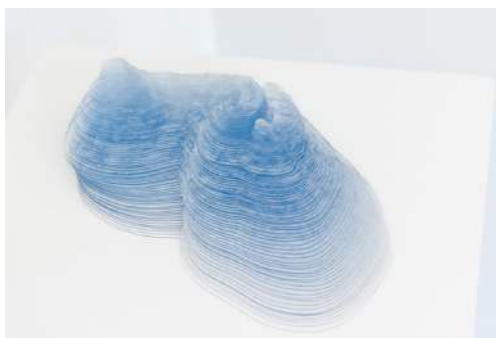
contours, forming a sort of topographical map of their owner that she arranges in simple displays. In Korea, rocks are considered to hold a special power over water and other things in nature, and Korean

stone gardens express the ancient concept of a round heaven and square earth called "Susok". Soo's arrangements evoke the informality and simplicity of this tradition, where her work takes on an almost heavenly quality.

In her installation series 'Desert of Winds', semi-transparent masses

are formed by cutting out vinyl into footprint shapes and accumulating them into a mountain, a cloud, or wind. Others appear to be in the space beyond, a non-existent island, as she describes it, in which she encourages viewers to wander in their own bare feet in the gallery.

Artist, Pictures | [Kim Yun Soo](#), Seoul, South Korea
Place | [Gallery DOS](#), Seoul, South Korea
Technical info | PVC sheets



Poly ShowRoom

This multifunctional showroom, designed by Waa, is a space composed of tall, slender screens of PVC fabrics, arranged and positioned to form a backdrop for the space as well as enclosure, and form a softer boundary for the individual events taking place.

Vertical bracing orchestrates a rhythm to the fluid lines of the partition and, together with the scrim, creates the physical, sensory and temporal experience of the space. It reacts to differing atmospheric conditions, highlighting these to the viewer can enhance qualities related to the time of day, and to perceive these qualities with greater vividness.

Subtle colour was applied to the scrim fabric: yellow to black, then grey and finally the white, transitioning



colours promotes changes in perception, enhancing a sense of excitement, which interact with the visitor's mood. It is used as a soft boundary to melt the route - it becomes their emotional journey.

Along the route, in this showroom, four lighting intensities and zones were conceived of:

Reception "Yellow" - Sunlight shining through the warm tones of the scrims casting shadows onto the floor, overhead lighting on and off tracing visitors' movement. There is a sense of warmth, lightness and serenity.

Theatre "Black" - means dark and opaque, only subtly lit-up scrim to guide the visitor's movement. All lights interact with movement, sound, smell, visuals; this is the place where



events are highly celebrated.

Project Display "Grey" - consists of a full PVC ceiling, distributes even lighting throughout the space. Instead of just viewing, visitors are placed as the centre of the exhibit, being part of it participating in the event and activity, at the place.

Resting "White" - To receive and perceive in white, sunlight casting shadow through layers of curved white scrim, onto those "found objects" made out of green felt, this is not a monochrome place, but colourful and emotional.

Architects | [Waa \(We Architech Anonymous\)](#), Beijing, China

Location | Shanghai, China

Technical info | PVC fabric and ceiling

Picture credits | Hu Wenjie

