PVC TODAY

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MAKING POSSIBILITIES TOGETHER · SUMMER 2009

New Residential Areas:
Modernisation in Berlin

New Fashion:
Creations from Sweden

New Stadium:
Membranes in London

90 Years of Bauhaus

Opportunities for Urban Development

Bauhaus in Action

Bauhaus architecture, Bauhaus design, Bauhaus art: nowhere else is the Bauhaus so visible as in the German city of Dessau. Here one finds world-famous buildings by Walter Gropius, Hannes Meyer, Carl Fieger, Georg Muche and Richard Paulick. Which is why Dessau is the showcase for numerous events for the 90th anniversary of the Bauhaus. The event was initiated by the Bauhaus Dessau Foundation which has preserved the legacy of the historical Bauhaus for the past 15 years, making it accessible to the public and also providing important contributions to pressing issues in today's environment.

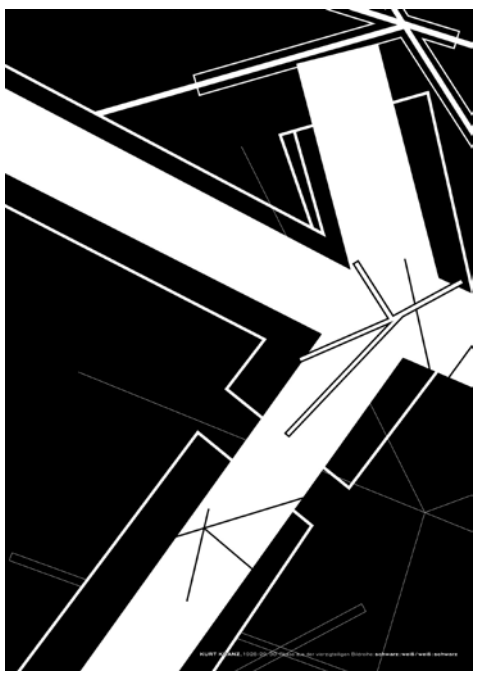
90 years of Bauhaus: Werner Preusker (left), Spokesman for PVCplus, talked with Professor Philipp Oswalt, Director of the Bauhaus Dessau Foundation, about the legacy of the Bauhaus and pressing issues of current urban development. Photo: Bauhaus Dessau Foundation

Bauhaus Building, Southwest View. Photo: Martin Brück 2005, Bauhaus Dessau Foundation

Since March 2009, Professor Philipp Oswalt has been the Director of the Foundation. Werner Preusker, Spokesman for PVCplus, talked to him about the work of the institution.

? ***Professor Oswalt, you took over the management of the Bauhaus Dessau Foundation as Director in March. What were your first impressions?***

+++ The first weeks after taking the job were filled with preparations for the anniversary. The Foundation planned more than 20 entirely different events for this year. Recently we began our film exhibition "Bauhaus in Action" which PVCplus helped to support through sponsors. We documented the controversies surrounding the Bauhaus in the book "Bauhausstreit 1919-2009", and in July the retrospective exhibition "Modell Bauhaus" followed in the Berlin Martin-Gropius-Bau. Preparations for these projects also involved determining our present position. We cannot do justice to the legacy of the Bauhaus with a static presentation in museums and archives. We must take a stance on important present-day issues in order to offer new alternatives, even if these lead to controversy. That is why we need a Foundation that is more actively involved in public discourse.



Kurt Kranz: 1928-29, 30. Phase of the Forty-Part Picture Series: Black: White/White: Black.
© Ingrid Kranz; Wedel/Holstein

? ***The participation of important politicians in the Bauhaus anniversary is enormous: German Federal Chancellor Merkel is opening the Berlin exhibition, Federal Minister of Culture Neumann and Federal Minister of Housing Tiefensee visited the Bauhaus Dessau Foundation. This speaks in favour of the great influence of the Foundation. How are you specifically trying to maintain the excitement between the past and the future of the Bauhaus?***

+++ For this undertaking, we are drawing upon three pillars which cover the past, present, and future of the Bauhaus in terms of content. First, the second largest **collection** on the history of the Bauhaus is located in Dessau. It comprises over 20,000 objects, especially those pertaining to the Dessau phase between 1925 and 1932. In our **workshop**, we are dedicating ourselves to contemporary projects with the Bauhaus legacy in mind. In this respect, research and education are intertwined, whereby we are especially interested in urban redevelopment in Saxony-Anhalt which will culminate in the International Building Exhibition this coming year. We are using **academia** as the third instrument. It views itself as an education institution committed to topics not being dealt with in university classrooms in order to create and convey knowledge. Through our International Bauhaus Kolleg which has been in existence since 1999, we offer a one-year interdisciplinary course selection in English for architects, city planners, and artists as well as scholars from cultural studies, the humanities, and the social sciences from all around the globe.

Masters' House Kandinsky/Klee. Photo: Jürgen Hohmuth 2004, Bauhaus Dessau Foundation

? ***The Bauhaus legacy includes famous historical buildings such as the masters' houses, the Dessau-Törten Estate, and naturally also the Bauhaus building by Walter Gropius. How are you bringing this legacy to life for visitors?***

+++ Each year approximately 100,000 visitors from around the globe come to Dessau in order to visit the Bauhaus buildings. In more than 5,000 guided tours per year, the Foundation conveys knowledge of this cultural heritage and has a comprehensive programme planned. For young artists, architects and designers, we are now offering the Bauhaus Summer School called "Bauhaus City - Get on Site!". Participants from across the globe can further their knowledge of the Bauhaus at the original locations. Our archives are also available for research.

It is important for us to have a more prominent position in the city and region in the future. For this reason, we have started a campaign with other key local partners. We would like to revitalise all the Bauhaus buildings and to develop a decentralised exhibition concept with various topical themes. There is no sense in the extensive renovation of the masters' houses if their history cannot be experienced on site. In order to better meet the demands of architectural and educational tourism, we are therefore planning, among other things, a central visitor centre on the Bauhaus Square in Dessau. It would also be desirable to document the history of the relationship between city representatives and the Bauhaus in the employment office or to convert the former Konsum supermarket in Törten into an information centre about the terraced housing project.

? ***The history of the Bauhaus is closely tied to Dessau. Why exactly Dessau?***

+++ The location of the Bauhaus in Dessau was not by chance. The booming industrial city represented a site of political, technological, and cultural innovation in the Weimar Republic. The dawning of an industrial age was particularly noticeable here. One could refer to the area around the city of Dessau, which was the location of the school from

1925 to 1932, as an early Silicon Valley. The airplane manufacturer Junkers was located here in Dessau, representative of a very new, aspiring aircraft industry. In Bitterfeld, Wolfen and Schkopau, a network of globally important chemical companies gradually emerged. A unique alliance came into existence at that time between enlightened entrepreneurs and proponents of social democracy which brought along with it a major thrust in modernisation and miraculously attracted the most important minds of the time.

there are pressing issues in urban redevelopment in eastern Germany. What are the current plans for urban redevelopment in Dessau?

+++ Dessau is one of the 19 cities of the International Building Exhibition (IBA) Urban Redevelopment Saxony-Anhalt 2010 which is supervised by the Bauhaus Dessau Foundation and the Saxony-Anhalt State Development Company (SALEG). The goal is to develop practical urban redevelopment expertise at the state and local levels in Saxony-Anhalt and to create model projects. Dessau's urban redevelopment project provides for the incremental revitalisation of empty buildings in a kind of "designed demolition" in which large-scale landscape areas will emerge in the next 20 to 30 years. Furthermore, remaining urban core areas or city islands are to be consolidated, and social networks in the city districts will be built up. Dessau is counting on the commitment of its citizens for urban redevelopment. They are being asked to appropriate areas which have become vacant, so-called claims of 400 square metres, and individually to structure public space. However, housing market interests as well as complicated ownership relationships must be taken into consideration.

Dessau-Roßlau, IBA Focus: City Islands – Urban Core Areas and Landscape Zones/Claims - 400 Square Metres Dessau.
Collage: Doreen Ritzau, 2007 (on behalf of IBA – Büro GbR)

? ***Since 1990, Dessau has lost its status as an industrial city along with 20 percent of its population, resulting in many empty flats. The association between the Bauhaus Dessau Foundation and PVCplus is founded on this structural change. In 2001, PVCplus initiated the project "ort.zukunft". In events with architects and city planners, where you were also involved in a project,***

For the future work of the Foundation, I believe that climate change and the financial crisis will play an important role in addition to demographic processes. Urban development and architecture cannot be tackled without considering the impact of climate change which we are faced with in all areas as the repercussions of our actions. The interdependency of the financial crisis, architecture, and urban development is also enormous. We are discussing these two topics this year at the Foundation's international conferences with the objective of formulating specific strategies. In this way, the Bauhaus Dessau Foundation provides essential incentive for modern urban development as a think tank for present-day questions.

infr www.bauhaus-dessau.de

Professor Philipp Oswalt, Director of the Bauhaus Dessau Foundation, would like a Foundation that is more actively involved in public discourse.

Photo: Doreen Ritzau 2009, Bauhaus Dessau Foundation

"UmBau-Installation" on the site of former director Gropius' house. This one-family home, which is the focus of the "UmBauhaus" project, was built on the intact basement of the Gropius house destroyed in the Second World War.

Photo: Stefan Fischer 2004, Bauhaus Dessau Foundation

Picture credits for the cover photos (in horizontal order):
1 – Bauhaus Building, View from the Workshop to the Studio Building, Photo: Jutta Stein 2005, Bauhaus Dessau Foundation; 2 – Lessons in Architecture in Front of the Bauhaus, 1931, Photo: Stella Steyn 1931/Kelly Kellerhoff (photo reproduction), Bauhaus Dessau Foundation, © unknown; 3 and 4 – Masters' House Kandinsky/Klee, Photo: Jürgen Hohmuth 2004, Bauhaus Dessau Foundation; 5 and 6 – From: „400 qm Dessau – Bürger-Claims als Trittsteine im Dessauer Landschaftszug", Bauhaus Dessau Foundation, 2007; 7 – Bauhaus Building, View of the Main Entrance and Transparent Corner of the Workshop Wing, Photo: Kirsten Baumann 2005, Bauhaus Dessau Foundation; 8 - Bauhaus Building, Balcony of the Studio, Photo: Kirsten Baumann 2002, Bauhaus Dessau Foundation; 9 – Bauhaus Building, View from the Workshop to the Bridge, Photo: Jutta Stein 2005, Bauhaus Dessau Foundation; 10 - Dessau - Roßlau, IBA Focus: City Islands – Urban Core Areas and Landscape Zones/Claims - 400 Square Metres Dessau, Collage: Doreen Ritzau, 2007 (on behalf of IBA – Büro GbR); 11 – Bauhaus Building, Southwest View, Photo: Martin Brück 2005, Bauhaus Dessau Foundation; 12 – Professor Philipp Oswalt, Photo: Doreen Ritzau 2009, Bauhaus Dessau Foundation; 13 and 14 – From: „400 qm Dessau – Bürger-Claims als Trittsteine im Dessauer Landschaftszug", Bauhaus Dessau Foundation, 2007.

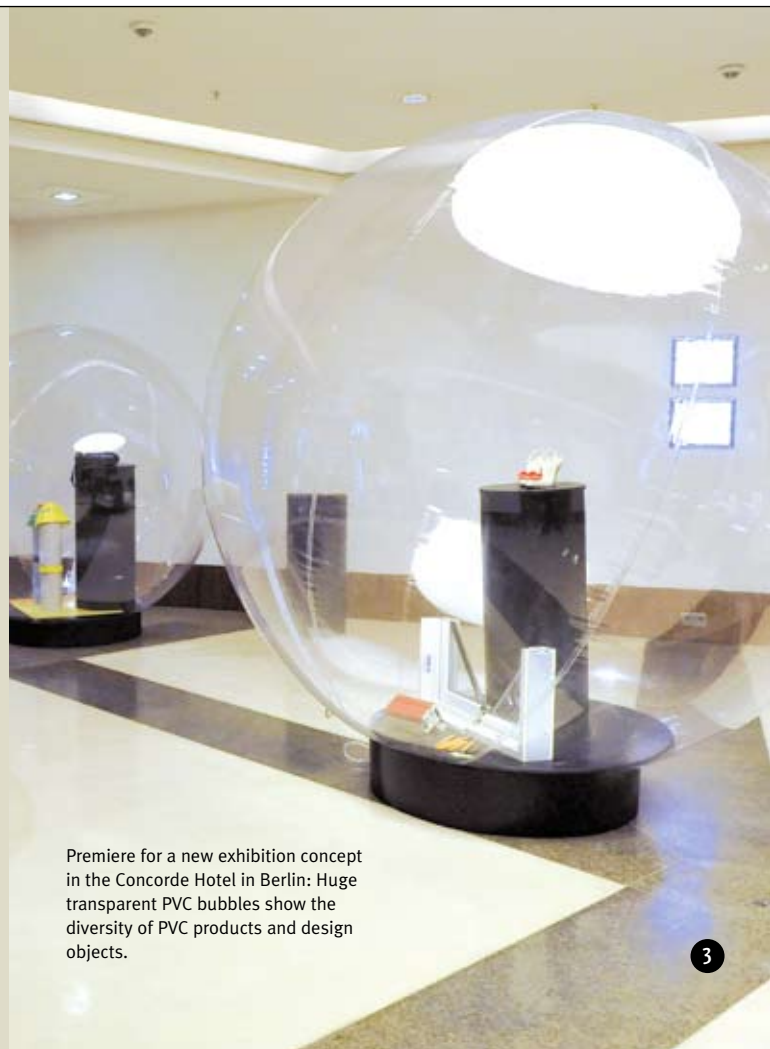
THE PVC BUBBLE SHOW

They look like something that has landed from outer space. At the recent ECVM/Vinyl 2010 general assemblies a group of giant inflatable PVC 'bubbles' occupied the foyer area of the Concorde Hotel in Berlin. The bubbles contained a combination of PVC products and design objects – the section from a PVC window unit, some PVC flooring, some bags made from recycled PVC and some stylish designer PVC shoes.

Alongside the 'bubbles' were some vertical pillars, each containing an electronic display describing the objects. This was a pilot outing for a unique new travelling internal/external display concept developed by PVC enthusiast designer Riccardo Giovanetti, on behalf of ECVM (European Council of Vinyl Manufacturers), with the assistance of Ole Grøndahl Hansen of the Danish PVC Information Council. The whole display system has been designed to pack neatly away into a couple of robust travel cases and accommodate any combination of items depending on the audience. For example, if used in a medical exhibition or hospital foyer area, the bubbles could contain medical devices together with fashion items. The development of the PVC Bubble Show has been funded by ECVM as a communications 'tool' that can be borrowed by any organisation wanting to attract attention to promote PVC and its key messages. Whether for industry employees (within offices, canteens or production plants); for industry customers in reception areas or as part of a trade exhibition; or for selected stakeholders at conferences (as demonstrated in Berlin), the bubbles immediately attract attention and have the added advantage of providing useful protection for objects that would be vulnerable if left out on display. The Bubble Show went straight back to Milan after its Berlin debut for some final refinements. Enquiries about borrowing the system in the future should be made via Gaetane Bellefroid at ECVM: gaetane.bellefroid@plasticseurope.org

infr www.ecvm.org

Photo: ECVM



Premiere for a new exhibition concept in the Concorde Hotel in Berlin: Huge transparent PVC bubbles show the diversity of PVC products and design objects.

EDITORIAL

NEW CHALLENGES

Wassily Kandinsky, Paul Klee, Walter Gropius: we associate these wonderfully familiar names with the Bauhaus, an institution which has had an enormous impact on architecture, design and art. This year the Bauhaus is celebrating its 90th anniversary. It's time for retrospection, but also time to decide on the future work of an institution which set in motion a radical process of modernisation at the beginning of the 20th Century. You will find out more about this in the interview Werner Preusker (PVCplus) conducted with Professor Philipp Oswalt, the new Director of the Bauhaus Dessau Foundation.

Today, standards have changed, especially for architecture and urban development. Political, economic, and climatic processes force us to rethink our lives and find new solutions. This always involves numerous interrelated factors. For this reason, an increasing number of empty spaces in residential property, which we find in almost all parts of the world, cannot merely be explained demographically. The labour market, the financial crisis, as well as climatic and political developments also play a role: this is a special challenge for modern urban and landscape planning which can only make predictions about the future in a limited way.

It is clear, however, that our actions towards sustainability have become fundamentally more important on all levels. Of course, this also applies to the building industry and the materials used there. PVC products such as recyclable energy-saving windows, easy-to-clean flooring, and long-lasting pipes are thus very popular for new buildings and renovations. A current example is the modernisation of 52 flats in Berlin-Neukölln which made the widely uninhabited residential area attractive again through the installation of modern sound-insulated vinyl windows and wood-texture PVC flooring. These products not only meet the required criteria of sustainability, but are also aesthetically pleasing: you can read more about this in our article on modern PVC covering which greatly enhances both walls and floors. In addition, building products made of PVC offer a range of practical qualities, from their flame-resistance, as our story on the devastating bushfires in Australia shows, to their extreme tear-resistance, indispensable for the roofing membranes used in the cricket stadium "Lords Cricket Ground" in London.

This issue also offers numerous unusual examples of PVC application. Unfortunately, there is not enough space here to relate all the stories. But hopefully we can make up for that in many future issues of PVC TODAY. We wish you pleasant reading. And if you hear about interesting, innovative applications of PVC, we look forward to hearing from you. Your ideas and comments are certainly always welcome.

Werner Preusker
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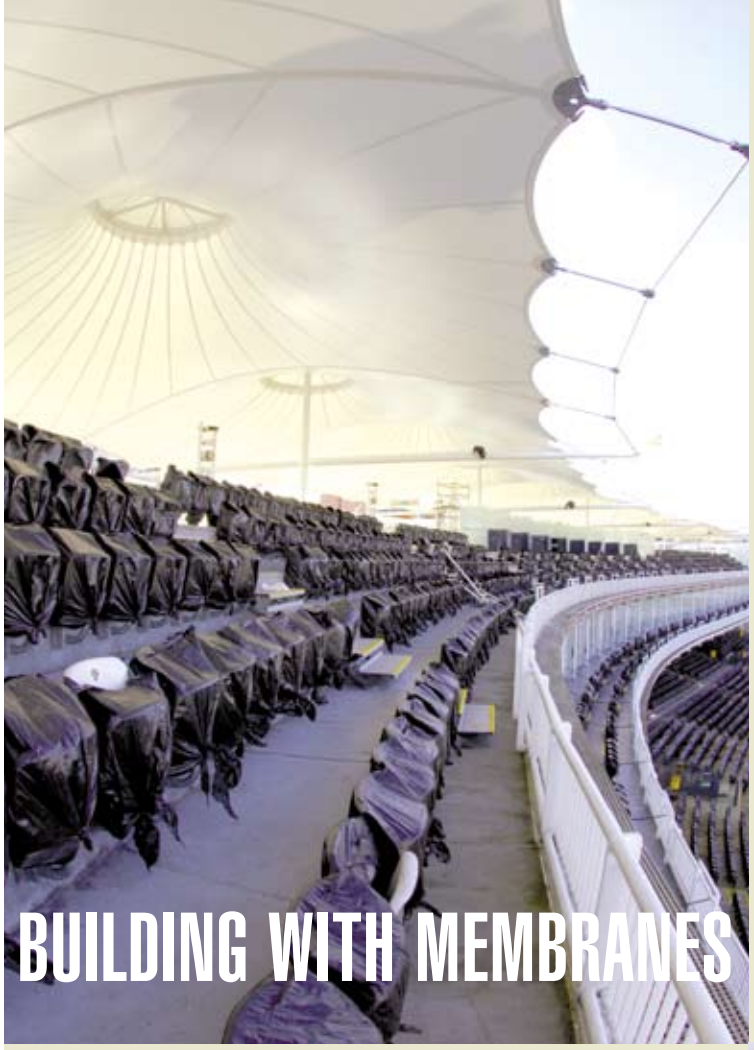


BUILDING WITH MEMBRANES

Left: View from below to the roof construction of the London cricket stadium with its impressive PVC membranes.

Lower: Like peaks of whipped cream, the individual roofing elements rise above the stands of the cricket stadium "Lords Cricket Ground" in London.

PVC-coated membranes are ideal for building functional, aesthetically-pleasing roofs. This is evident worldwide from their use in football stadiums, airports and exhibition halls. Benefits such as robustness, flexibility, weather resistance, and noise insulation speak for themselves. For these reasons, building with vinyl membranes is gaining importance worldwide.

Photos: Base Structures

Visitors to the pavilion of the Brazilian fair "Brasilplast" at Anhembi in São Paulo in May were pleasantly surprised. With the construction of the new roof, the well-known Brazilian heat gave way to comfortable inside temperatures. On the very first day of the event, the new construction showed what it could do when a strong rain shower ravaged the capital city of São Paulo. What in the past would have made tremendous noise inside the pavilion turned into nothing more than a slight pitter-patter. The reason for the clearly noticeable improvement was the weather-resistant vinyl membranes joined with a layer of EPS, which cover the roof with a surface of 68,200 square metres.

Pavilion at the Brazilian plastics fair "Brasilplast": The roof of the pavilion was completed with weather-resistant vinyl membranes joined with a layer of EPS.

Photo: Brazilian fair "Brasilplast", Solvay Indupa (Brazil)

PVC membranes, which retain their required elasticity and flexibility from plasticizers, are widely used in Europe and the United States, but in Latin and South American countries are still not common. The positive impression this material made at the plastics fair "Brasilplast" could change this. Miguel Bahiense, director of the Instituto do PVC in São Paulo, even sees the possibility of using the innovative PVC membranes in the 2014 World Cup in Brazil. The highly tear-proof material not only offers effective thermal and acoustic insulation, but is also compelling because of its resistance to chemicals and ultraviolet rays in addition to its enticing possibilities for design.

Spectacular Stadium Roofs

Impressive proof of the material is seen in the German football stadiums such as Hamburg and Stuttgart which gained international attention during the 2006 World Cup. The same holds true for the world famous 'home of cricket' "Lords Cricket Ground" in London with room for approximately 30,000 spectators. After 18 years of use, the canopy roof had to be taken down. The contract to dismantle the old canopy and to manufacture and install new, extremely robust PVC membranes went to the company Base Structures. It completed the demanding project in only four weeks. After the used tarps were taken down, they were subjected to an extensive examination to gain new insight into the properties of the material during its long life. Once tested, the tarps will be recycled.

2012 Olympic Games

Highly tear-resistant fabric and membranes are also needed for the 2012 Olympic Games in London. This is true for provisional buildings such as the basketball arena and the temporary components of permanent building projects such as the Olympic Stadium. At the moment, PVC products that meet strict sustainability criteria are being sought which can be recycled after use.

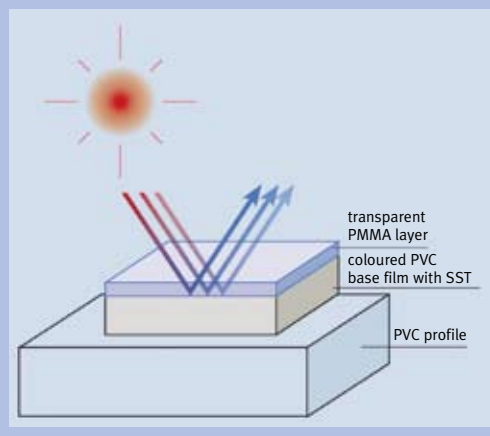
inf www.basestructures.com,
www.solvayindupa.com

The Power of Particles

Window and building elements made of film-laminated plastic profiles have been a symbol of low maintenance and durability for more than 25 years now – at least in moderate climatic regions such as Central Europe. However, the sun's ever-powerful rays are able to damage the coated profiles. That is now changing with pigments in PVC base film and printing colours.

Desert Grill: RENOLIT film with SST in a durability test in the relentless Arizona sun.

In hot climatic regions, the temperature of plastic window profiles coated in dark grains can sometimes exceed 70° Celsius so that they reach their performance limits. Solar Shield Technology (SST) developed by the RENOLIT Group provides relief. The company utilizes the reflective properties of pigments to repel thermal radiation on the film: "We combine IR (infrared) transparent pigments and IR reflecting pigments. This reduces the heat development in the profiles by up to 11° Celsius", explains Dr. Dirk Heukelbach, responsible for the research and development of RENOLIT EXTERIOR products.



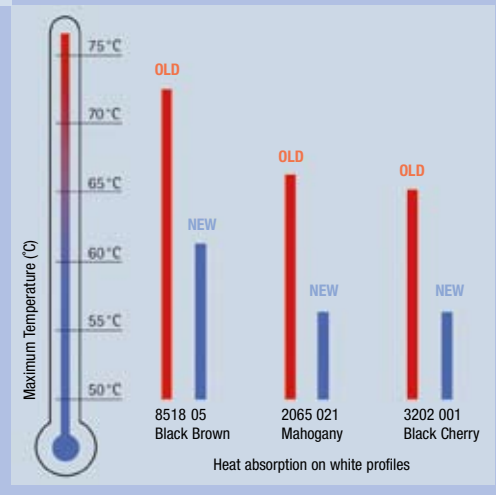
Deflected: The transparent PMMA layer lets the infrared rays through, and the pigments in the dyed PVC base film reflect them.

Pigments reflect Infrared Rays

The second SST generation for RENOLIT MBAS film has been available since 2008. Extremely robust, the two-layered exterior film consists of a coloured PVC layer and a transparent layer of polymethyl methacrylate (PMMA). For wood grains, the two plastic layers comprise an additional layer of printing colours. While the pigments in the colours and the PMMA layer are permeable, the pigments in the dyed PVC base film reflect the infrared rays. In this way, the film works as a protective shield for the PVC profiles and reduces the difference in temperature between the exterior and interior surfaces of the profiles. The lower temperature thereby provides relief to the profiles and to the film with its lamination.

Durability Test in the Desert

"We observed the greatest progress in connection with dark colours and wood grains", concludes Dr. Heukelbach about the results of numerous weathering tests. The company simulated the sun's rays on RENOLIT MBAS film with SST under standard laboratory conditions and subjected test objects to the blazing sun in the Arizona desert. The profiles heated to a maximum temperature of 58° Celsius with the Steel Blue film colour, and other colours and grains remained considerably lower. The biggest improvements were achieved by the colour Black Brown. In this case, the temperature dropped by approximately 11° Celsius, followed by the Mahogany wood grain with a decrease of 9° Celsius and Black Cherry by 7° Celsius. The temperature dropped considerably with both white and dark profiles.



Dropped: The standard RAL laboratory test shows lower temperatures of up to 11° Celsius for white profiles.

Extended Life of the Product

Reduced temperatures have a sustainable effect on the use of building elements over decades. In the long run, the profiles retain their shape so that windows and doors close reliably. They therefore make a considerable contribution to energy efficiency and also have a long product life since the special film slows down the physical and chemical ageing processes of the window profiles. "The production costs are slightly higher, but builders get the additional advantage of reassurance through SST", states Franz-Josef Weber, Sales Manager in the RENOLIT EXTERIOR division. The manufacturing process has also remained unchanged in comparison with established products.

infr www.renolit.com

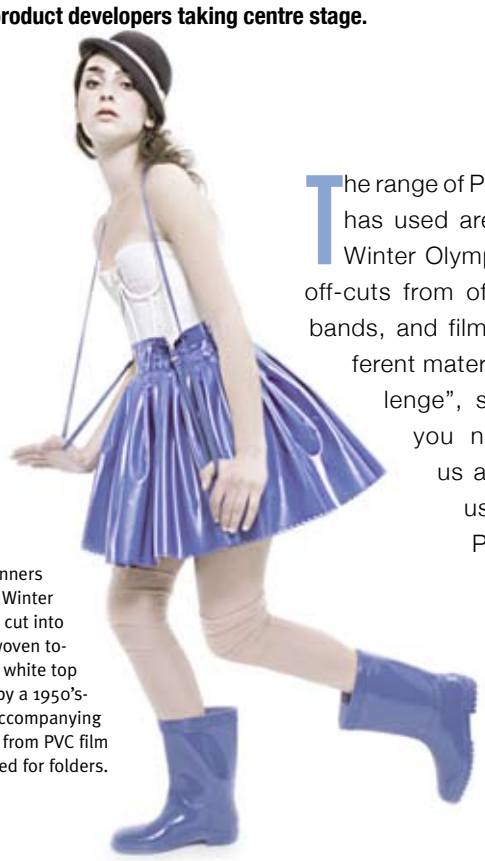
Photos: RENOLIT AG

PVC Fashion from Production Waste

To highlight PVC's many possibilities and uses, PVC Forum in Sweden worked with young prize-winning fashion designer Bea Szenfeld to create extraordinary clothes and accessories from reused PVC. The results were truly amazing. In May the creations attracted a lot of attention when they were shown in Jönköping, Sweden at Elmia Polymer, the leading fair in Scandinavia for the plastics and rubber industry. This was a useful contribution to the fair's concept because the focus of the show was on future trends, with designers and product developers taking centre stage.

The third dress was made from green film normally used in the production of office folders.

Using colourful PVC-bands, Szenfeld also designed a frock inspired by the flapper dress. The bands are produced by Gislaved Folie and normally used to make woven plastic rugs and carpets. Nearly 500 metres of bands were required to create the outfit, which weighs 3 kg.



The used banners from the 2006 Winter Olympics were cut into thin strips and woven together to form the white top of a dress inspired by a 1950's-style design. The accompanying skirt was made from PVC film used for folders.

The range of PVC materials that Szenfeld has used are banners from the 2006 Winter Olympics in Torino, production off-cuts from office equipment, weaving bands, and film. "I like to work with different materials, it's a wonderful challenge", says Szenfeld. "It makes you notice everything around us and how products can be used in more than one way. PVC is a durable material, and I do not want to be part of a 'wear and throw away' culture. Re-use is important to me." During the manufacturing of her new collection, Szenfeld had completely new experiences: "Although using PVC material is similar to working with textiles, it has a totally different structure", explains the fashion designer. "It was not possible to work with traditional tools, such as a sewing machine and iron. Instead, I used a scalpel, an adhesive gun and a heating lamp."

infr www.pvc.se, www.szenfeld.com

Photos: PVC Forum Sweden/Ulrik Lövgren

A bathroom of comfort for connoisseurs with high standards: The walls and the floor are furnished with Wetroom flooring by Armstrong.

Slip-resistant hygienic floors in ultra-modern bathrooms, non-stain conductive flooring in laboratories and operating rooms, and colourful easy-to-maintain flooring in kindergartens and schools: PVC flooring can be used for practically all applications since it combines high aesthetic standards with individual material qualities. That is why it is not only suitable for new buildings, but also for modernisation work such as that being carried out as part of the economic stimulus package in Germany.

Stylish by any Standard

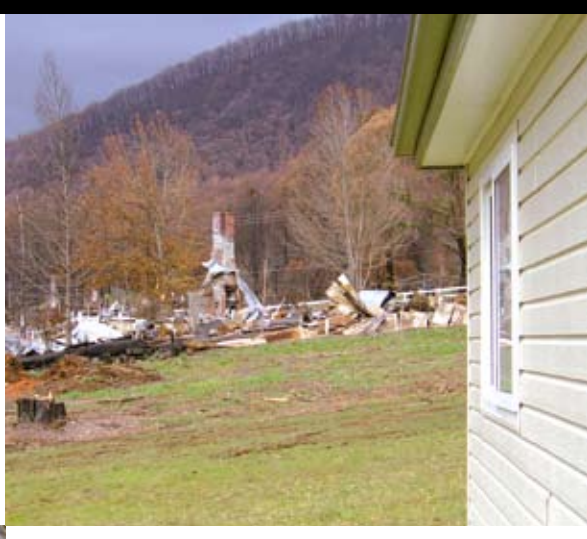
There are no longer any limits to the multitude of designs for interior spaces with robust PVC flooring. This is evident from the DLW Vinyl Collection by Armstrong with its perfectly coordinated colour systems. A current example is the Radium Hospital in the Norwegian capital Oslo which was created by Henning Larsen Architects and primarily houses research laboratories. The modern building, which is bathed in light and has an effective area of approximately 32,000 square metres, was furnished with chemically-resistant, electrically-conductive vinyl flooring in various colours. While red flooring is used in laboratories,

The Radium Hospital in Oslo: Architects have applied various shades of coloured flooring to help visitors find their way. While red flooring is used in laboratories, two shades of grey designate other working areas.

Photos: Armstrong DLW AG/Torben Eskerod

AUSTRALIAN MIRACLE

If you are going to build a new home you need to take the respective climatic region into consideration when choosing building materials. Scorching heat, ice-cold winters, powerful storms, and wide-spread fires take their toll on building products. The small town of Marysville, Victoria was almost completely destroyed in February this year during devastating bushfires in southeast Australia. A modern home with various PVC building products miraculously survived the catastrophe virtually unscathed.



Trail of destruction: The devastating bushfires in the Australian city of Marysville caused considerable damage. But the house on the right was mostly spared.

Besides a lot of luck, this may well also have been the result of well-thought-out architectural planning. Rowan Steele of Ro-N-Co Construction built his house with low maintenance and high energy efficiency in mind. Due to the possibility of fires, he attached great importance to the flame resistance of the building products and drew his experience from the bushfires around the Australian capital of Canberra in 2003. Steele decided to use several vinyl products such as vinyl weatherboard, double-glazed energy-saving plastic windows, and vinyl fencing. “Vinyl’s fast to put up and the upkeep is easy. It’s also great in helping to insulate and maintain the heat both inside and out. The added bonus, of course, is you don’t have to paint it.”

During Australia’s wide-spread catastrophic fires, this home with its vinyl weatherboard was fortunately almost completely unscathed.

Good Architectural Planning

A major reason for the almost complete integrity of Rowan Steele's home was the sufficient distance from surrounding vegetation. The fire was consequently not able to spread to the structure of the home. In addition, an alert neighbour immediately extinguished a burning door mat. Fire-retardant building materials may well have also had a positive effect. The vinyl weatherboard and the PVC profiles remained virtually undamaged. The durable wood-plastic composite (WPC) decking at the front and back of the house received only minimal scorch marks. As a consequence of this natural catastrophe, the national standard for construction in bushfire-prone areas was recently revised. Certain vinyl products are permitted for construction within the new standard, including steel-reinforced windows up to specified radiant heat risk levels.

Positive Material Properties

PVC building products are not only highly valued because of their flame and weather resistance. Their high standard in terms of security and quality as well as their cost-effectiveness and sustainability are other important contributing factors. In Europe in particular, PVC windows, flooring and pipes are used. Approximately 40 percent of window units in Europe have PVC profiles because they are very energy-efficient, low in maintenance, and recyclable. Vinyl flooring in numerous attractive designs lowers cleaning costs. Lightweight PVC pipes can be installed without heavy equipment and last up to 100 years.

info www.vinyl.org.au

Photos: Vinyl Council of Australia

two shades of grey designate other working areas. Visitors are therefore able to understand the building layout without much difficulty.

Eldorado for Designers

The wide selection of configurations, patterns and colours allows for the design of distinctive interior spaces. For example, the DLW Vinyl Collection Wetroom has been developed especially for use in wet and damp areas in baths, showers and toilets. Floors and walls are designed with these products with single-colour or small chip patterns, modern graphic shapes, or remarkably genuine-looking ceramic-tile reproductions. Matching borders provide added emphasis. The PVC flooring is installed without seams and provides maximum watertight solutions and hygiene in healthcare institution, and sport, fitness and wellness facilities, as well as in schools and hotels.

Individual Functionality

Installing conductive flooring, which Armstrong offers in a variety of colours, is recommended in operating rooms and for use in industry with its sensitive electronic equipment. This special flooring was installed in several rooms of the newly-built Radium Hospital. This is an example of how the multitude of material qualities of PVC flooring provides an extensive range of applications.

Sustainable to the Finish

All PVC flooring by Armstrong is extremely well suited for use in areas of high-traffic which must withstand heavy loads. PVC flooring is especially durable and easy to maintain due to its cost-effective PUR surface protection which Armstrong furnishes on nearly all of this flooring. With the PUR ECO System, the flooring is also especially abrasion-proof. These are valuable prerequisites for building projects which must be cost-effective over their entire life-cycle. Since PVC flooring can also be recycled, the decision is always made in favour of extremely sustainable products.

infr www.armstrong.eu

FOR A SECURE STAND

The bicycle stand should be as environmentally friendly as the means of transportation. This was the basic idea of product developers at CABKA GmbH in the Thuringian city of Weira. Its solution: bicycle racks made of recycled PVC.

This parking space for the trusty bicycle not only saves the environment. The proven material properties of PVC also make it robust for everyday use. Nearly indestructible, the rack will withstand wind and rain for years and is resistant to road salt and oil. It is easy to install and does not require a base because of its own weight. The inventors from Thuringia also had the care and security of the beloved two-wheeler in mind. The mounted metal rings protect against bicycle thieves, and the soft surface of the recycled PVC is easy on tires and rims. The practical bicycle racks are available in silver and natural colours as standard, and other colours can be manufactured on demand. The recyclers-list of the Working Group PVC and Environment (Arbeitsgemeinschaft PVC und Umwelt) offers information on CABKA and manufacturers of other recycled products at www.agpu.com.

infr www.cabka.com, www.agpu.com

PHOTOS: CABKA GMBH

Weather resistant and robust against road salt and oil: The parking space for the trusty bicycle is nearly indestructible.

This bicycle rack made of recycled PVC is easy to install and does not require a base because of its own weight.

546,000 tonnes of waste are stored at the hazardous waste site in the Swiss town of Kölliken. But that is about to change soon. The clean-up and transport of the waste materials is taking place in three halls constructed for this purpose. In order to fully protect the people and the environment during this work, the roofs of these impressive halls were built with PVC sealing membranes.

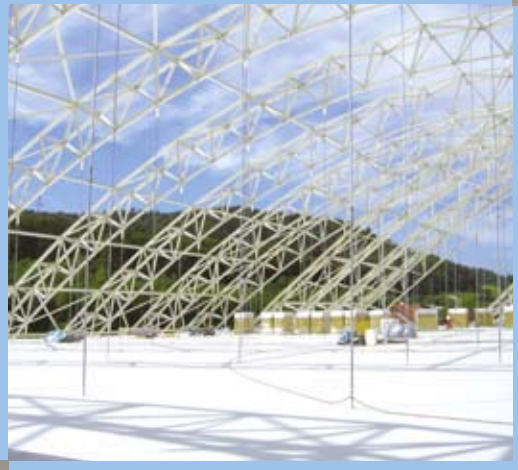
Well Planned to Protect the Environment

The clean-up of the hazardous waste landfill in Kölliken, where waste materials were deposited between 1978 and 1985, is in full progress. It is a technical and logistic challenge that will take until the end of 2012 to be completed. It not only involves transporting, analysing, and professionally disposing of the materials. Protecting people and the environment is also enormously important during the entire clean-up.

Hermetically Sealed

The landfill is located in the middle of a residential area. That is why three adjacent halls have been built over the hazardous waste site. The excavation hall and the handling hall are free-standing structures whose roofs are hung from arched structures with piano wire. The excavation hall is the largest free-standing building in Switzerland. Huge arched structures up to 170 metres long and weighing 170 tonnes allow for the excavation of the stored materials with no obstacles. In this way, the special equipment and machines can work freely and safely. “We demand the highest technical and organisational standards in order to protect the people inside and outside the halls as well as the environment”, reports Jean Louis Tardent, managing Director of the hazardous waste site in Kölliken. For this reason, the work takes place inside airtight halls under low pressure which prevents the emission of gases, odours and dust. The exhaust is purified by a three-tiered exhaust treatment system with dust filters and two active carbon filters. In addition, the air and water quality is subjected to constant control.

Aerial photograph of the three adjacent halls for the clean-up of the hazardous waste site in Kölliken, Switzerland.



View of the huge arched structure for the free-standing halls. The roofs were sealed with multi-layered PVC tarps.

Professional installation of the Sikaplan sealing membranes on the hall roofs for the protection of people and the environment during the clean-up stage.

Clean-up under PVC Membranes

Because of the constant low pressure in the halls, the provisional structures not only have to be waterproof, but also 100 percent airtight. For this purpose, vapour seals, thermal insulation plates, and roof sealing membranes have been installed and tightly fastened to all connections. For the 46,000-square-metre roof structure, Sikaplan sealing membranes from the company Sika Sarnafil AG are mechanically fastened and thermally fused to the joints. The multi-layered PVC tarps are furnished with an interior polyester fabric and are therefore extremely robust and resilient. These are valuable prerequisites for the safe completion of this conscientious project which is making continuous progress under the PVC membrane. In the end, the daily clean-up work will average 500 tonnes per workday. Afterwards, plans will be implemented for the re-naturalisation of the grounds. “The goal of the overall modernisation is the re-establishment of a state of being in which the area of the landfill can be handed down to future generations with a clear conscience”, states Tardent.

infr www.smdk.ch, www.sarnafil.ch

Aerial photograph: hazardous waste site in Kölliken

Photos: Sika Sarnafil AG

PVC window systems with the historically reconstructed sash-bars were used in the modernisation work in the 52 flats in Berlin-Neukölln in the style of the original façade.

Living with ambiance: The light PVC flooring with the look of wood has a friendly and inviting feeling. In the kitchen and living room, the flooring is not only durable and easy-to-clean: its wooden design brilliantly highlights the room.

New Brilliance

When historic buildings begin to age due to a lack of regular maintenance and modernisation, then living areas will eventually become unattractive. This is the case in Schierker Street and Ilsenhof in Berlin-Neukölln, a housing area in the middle of the lower-income neighbourhood of Körnerpark in Berlin. By completely modernising flats with energy-saving PVC window systems and high-quality aesthetically-pleasing PVC flooring for example, attractive new residences have once again been created for many people.

Colourful and modern living comfort: After complete modernisation, the building complex in Berlin-Neukölln is gleaming in new brilliance.

The furnishings at the building complex in Berlin-Neukölln have remained virtually unchanged since 1933. “The residential complex was in a very sorry state. Insufficiently sealed coal ovens, technically outdated gas and sanitary facilities, windows from the 1970s without the earlier sash-bar separation, dismal stairwells, and unused run-down gardens contributed to the negative image of the historic housing complex”, remembers Charles Casey Mathewson of the architectural office mab – mathewson architektur berlin. Furthermore, the shabby façade was crumbling, parts of which had not been painted since construction in 1933. Which is why 42 of the 52 rental units had been vacant for years: this is a problem that has also affected eastern Germany with its large waves of migration to other federal states. However, the building complex, which is located in the immediate vicinity of the historically-preserved Körnerpark, was built with solid craftsmanship and attention to detail.

Improving the Neighbourhood

In order to create attractive rentable flats and thereby increase their value, the architectural office mab has developed an extensive modernisation concept commissioned by the construction company SIC Properties Berlin. In so doing, the outdated floor plans of the two-room flats were fundamentally redesigned. The kitchens and the bathrooms received modern fixtures and fittings. The new central heating with a hot water boiler now provides considerably more comfort. With the exception of the bathroom, all the rooms were furnished with a total of 2,000 square metres of PVC flooring. The remarkably genuine-looking wood texture of the easy-maintenance flooring creates a bright and friendly atmosphere. This is a durable flooring solution that withstands high demands and is very economical over its entire life-cycle. This also applies to the approximately 250 new built-in PVC windows with double-glazing and above-average sound insulation (soundproofing class IV). They save energy, are low maintenance, and do not have to be painted. The white windows give the buildings back their original appearance with the sash-bar separation, lost through years of improper single-pane design. In combination with the white balconies, they give a friendly, distinctive appearance to the façades designed in ultra navy blue and oxide red.

An Asset for Körnerpark

The green courtyard, unused for years, has also been partitioned into individual tenant gardens and a joint community area in order to develop a feeling of togetherness outside. Historical plants and thickets have been used to recapture the original atmosphere of the complex. New ideas for renovation are now emerging from the area of Körnerpark, in the densely built-up city district of Berlin-Neukölln, where the renovation was completed during summer 2008.

infr www.ma-b.net, www.sicproperties.de

Photos: mab - mathewson architektur berlin

PVCH ecvm PVC plus
An initiative of the PVC industry