PVC TODAY

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MAKING POSSIBILITIES TOGETHER · WINTER 2009

German Know-how:
Passive Houses with Plastic Profiles

Italian Design:
Furniture to Feel Good About

French Recycling:
New Life for Non-Rigid PVC

Energy Efficiency

British Pilot Project in Nottingham

A Living Experiment for Climate Protection

What will the architecture of the future look like given our diminishing resources and limited energy sources? This question concerns many companies working swiftly to develop sustainable solutions. Innovative construction chemicals, insulation materials and energy-efficient PVC windows are only a few examples. A research project in Nottingham is examining how these factors can work together to contribute to energy savings and climate protection. The results may be highly influential for future housing concepts.

Deborah Adkins, Philip Robinson (BASF, middle) and Werner Preusker (spokesman for PVCplus, right) viewing the sunspace.

On the campus of the University of Nottingham, BASF has built a trend-setting low-energy house in close cooperation with the University's Department of Architecture (The School of the Built Environment). It is part of an extensive research project. Working together with several partners, a total of six buildings, with the most recent cutting-edge developments in energy-saving technology, are planned. Ultimately the six buildings, each with its own innovative solutions, will undergo extensive trial testing. The prefabricated BASF house was developed especially for the British climate and its relatively warm winters. With an energy heating load of about 12.5 kWh/m² per year, it has the same energy efficiency as a German "passive house". The new building can also be called a 1.5-litre house based on its annual use of fossil fuel per square metre of living space.

Energy Efficiency at a Fair Price

In January 2008, BASF completed the first of the six "Creative Energy Homes" after a 25-week construction period. "We finished this house with our own innovative raw materials and products from numerous company divisions", states Philip Robinson, BASF Head of Regional Market Development in Northern Europe and the person

Pleased with the more than 2,000 visitors to the BASF house: Philip Robinson, Head of Market Development.

Spacious PVC window façades, with the sunspace located in between, play an important role in energy efficiency.

BRAND NEW PVC WEBSITE GOES ONLINE

January 01 2009 sees a completely new version of the www.PVC.org website going live. All of the useful information that was featured in the old PVC.org website has now been completely repackaged and supplemented in a new look, updated website with a much more user-friendly navigation system and lots of additional useful features. PVC.org should be the first stop for anyone wanting information about PVC.

info www.PVC.org

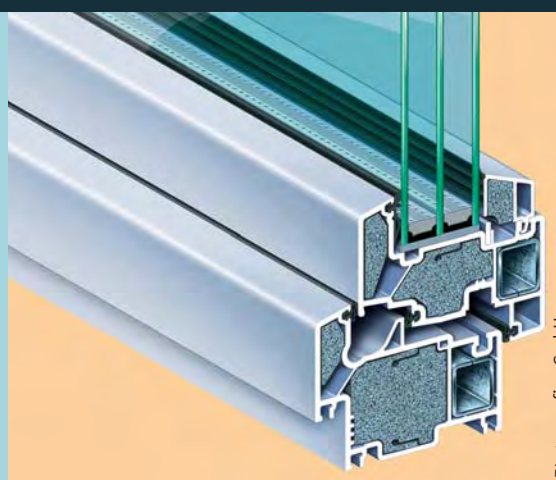


Photo: profine GmbH

The PVC window system by the Frankfurt passive house project: the hollow chambers of the profiles are filled with polystyrene hard foam for ideal heat insulation.

In Frankfurt-Bornheim, 149 flats are currently being built which meet passive house standards with 1,000 plastic windows from the profine brand Kömmerling.

Photo: UPG Urbane Projekte GmbH

responsible for this project. These include high-quality materials which allow buildings to be better insulated, protected, bonded, sealed and painted. Each of these materials has been carefully chosen according to its impact on the environment over its entire life-cycle. “The result is high energy efficiency at affordable prices. The building costs would be approximately 85,000 euros per house for the construction of around 20 buildings in the style of the BASF house. The detached structure was conceived as a conventional residential building which could also be converted into a terraced or semi-detached house”, Robinson continued.

Effective Mixture for Energy Savings

The combination of various energy-saving technologies under one roof is crucial. The insulated east and west walls of the building have no windows, while the well-insulated north side of the building has many small windows which cover approximately 23 percent of the overall surface area. In contrast, the south side of the energy-saving house has been designed with a spacious front consisting of double-glazed PVC window systems which extend across the entire outer façade. Behind these on the ground floor, there is a narrow sunroom which in turn is separated from the living room and kitchen by a system of double-glazed plastic windows. The huge window fronts, together with the space in between, play a decisive role in energy efficiency. They prevent energy from escaping from the living area. At the same time, they provide an abundance of sunlight and reduce the cost of lighting. The floors and walls store the warmth from the incoming sunlight and therefore function as heating. However, providing light and warmth is not the only way in which the power of the sun is utilised. Solar energy also heats approximately 80 percent of the water.

Automatic ventilation thanks to the high-performance windows provides circulation of warm or cool air and regulates the room temperature. Additionally, there is a ground-air heat exchanger. It sucks fresh air through an underground network of pipes into the house and thereby utilises the energetic storage capacity of the earth to pre-cool the air in summer and to pre-heat it in winter: a further contribution to reducing energy costs. A biomass boiler provides an additional back-up for the generation of heat through the use of renewable energy and contributes to the overall CO_2 balance.

A view of the extremely modern kitchen in the low-energy house.

Everything by touch screen: Deborah Adkins explains the convenient monitoring technology.

Convenient Monitoring Technology

The new house is filled with high-tech solutions and also contains complex but easy-to-use monitoring technology which can be operated from the kitchen or even online. By means of this, the residents can receive data about the ventilation, heating, lighting, temperature and energy consumption as well as monitor individual processes: even from outside the house.

Automatic ventilation through the windows provides sufficient air circulation.

One-Year Experiment

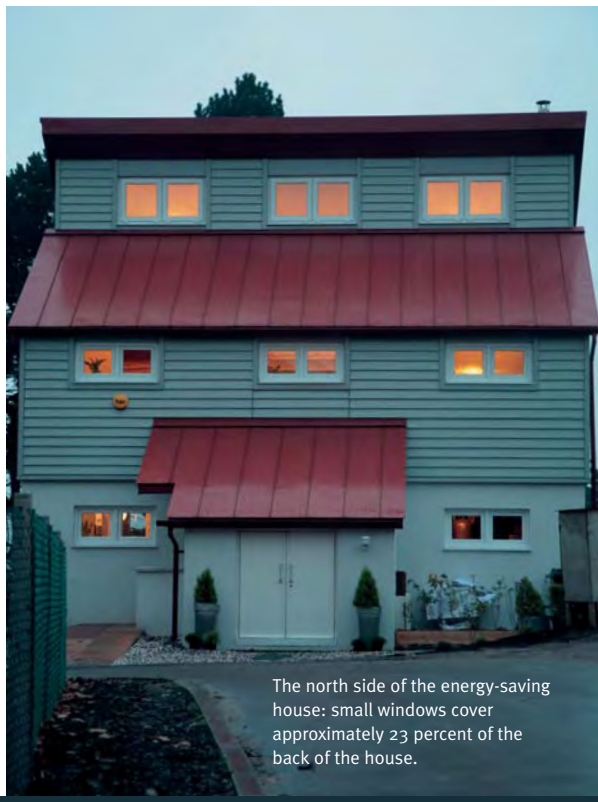
Since June 2008, students Deborah Adkins and Nina Amor Hormazábal Poblete have been living in this remarkable model home. Their comfortable home is also a workplace, since the two women have extensive duties for an entire year. This work includes practical testing and analysis of the energy-saving solutions installed in the house. The initiators of the project expect to gain an insight into the quality of life in this very hermetically-sealed, intensively-insulated house. It will be interesting to see the effect of light conditions, temperature, ventilation and humidity on the well-being of the test residents. “Understanding how householders live within these homes is vitally important. These are not just technology show houses, they are real homes which can inform the design and delivery of sustainable housing over the coming years in the UK”, states Dr Mark Gillott, Research and Project Manager for Creative Energy Homes.

Partial view of the north façade with PVC window profiles.

Great Public Attraction

Public interest in the BASF house is already enormous, state Nina and Deborah. The two PhD students regularly give guided tours of the house to guests who are interested in the innovative equipment and technology of the building. No matter whether it involves architects, politicians, schoolchildren, private citizens or business people: the low-energy house has already attracted over 2,000 visitors since its completion.

info www.house.basf.co.uk



The north side of the energy-saving house: small windows cover approximately 23 percent of the back of the house.

Photos: Bettina Koch

MODEL PASSIVE HOUSE PROJECT

Well-insulated façades and roof constructions, modern energy-saving windows made of plastic: the building project “Campo” in Frankfurt-Bornheim is distinguished by its exemplary energy efficiency and is one of the largest passive house projects in Europe. It not only establishes new standards for climate protection and energy-efficient construction, but the attractive architecture of the new buildings also looks to the future.

The former tramway depot in Frankfurt-Bornheim is presently undergoing renovation. Besides the new shopping centre, eleven townhouses are currently being built there with 149 flats which meet passive house standards. The ABG FRANKFURT HOLDING Wohnungsbau- und Beteiligungsgesellschaft mbH as the builder, and the UPG Urbane Projekte GmbH, have succeeded in achieving lively diversified architecture, while also taking the high demands on climate protection into consideration. A major factor in this energy-efficient construction project is the 1,000 built-in plastic windows created by the window manufacturer Kochs GmbH from Herzogenrath near Aachen using PVC profiles from the profine Group.

Passive House Standard

The vertically arranged heat-insulated windows called “eCO_2-Warmfenster” with Kömmerling profiles, with comparatively narrow widths, create a spacious living environment that is flooded with light. With an outstanding U_W-value of 0.74 W/m² °C, the top-performance windows meet the highest standards in heat insulation: the result can also be attributed to the hollow chambers of the PVC profiles which are filled with polystyrene hard foam and the special triple-glazed heat-insulated glass with inert gas. These window systems therefore make an important contribution towards reducing CO_2 emissions. It is not without good reason that these windows were officially certified by the renowned Dr. Feist Passive House Institute in Darmstadt as the “components suited for passive houses”.

Environmentally-Friendly Profile Production

Besides the aesthetic advantages and the energy efficiency of Kömmerling profiles, builders are also sold on the extremely environmentally-friendly manufacturing which profine has implemented since 2004 with its lead-free maxim “greenline”. The virgin materials for all profiles by the brands KBE, Kömmerling and Trocal are manufactured exclusively with environmentally-friendly stabilisers made from calcium and zinc. In order to save valuable resources, the 1,000 windows from the Frankfurt project will also be recycled after use and turned into new profiles.

info www.profine-group.de

EDITORIAL

DON'T STOP BEING INVOLVED NOW

The financial crisis, bankruptcy, recession: though a crisis was not entirely unexpected, the severity has surprised many people. And it has had a very decelerating effect – to varying degrees – on the economies of all member states of the European Union. In such situations, long-term goals such as climate protection are easily de-prioritised. However, decreasing commodity and oil prices in the short run cannot hide the fact that we need effective solutions for saving energy and resources in order to reduce our environmental footprint, achieve a certain standard of living, and save many jobs in important branches of industry. Therefore, it is imperative to respond to reduction in demand caused by the visible loss of trust in economic development with a stimulating policy of growth, for example, by fostering investment in innovative sustainable products which also achieve long-term goals.

PVC products make a decisive contribution to sustainable development. Especially in the face of the economic downturn, the PVC sector can deliver positive economic opportunities through its wide spectrum of sustainable applications with low life-cycle costs. Light PVC pipes can be cheaply transported and could last for 100 years without having to be replaced. Easy-to-clean PVC flooring saves detergent, water and energy. It can also be recycled and reused for new products at the end of its life-cycle. Innovative PVC window systems with high-performance profiles and multiple glazing are used in very economical "passive houses". These windows contribute tremendously to reducing heating costs, as our building project "Campo" in Frankfurt proves, where over 1,000 plastic windows provide convenient energy-efficient living. In Nottingham, a pilot project combines numerous trend-setting technologies under one roof. In this case, PVC profiles also play a decisive role in contributing to energy savings. At the same time, spacious window surfaces provide an abundance of light in rooms for a feeling of well-being. A unique project in Venezuela shows that PVC can deliver a greatly enhanced standard of living. So-called "PetroCasas", based on PVC components, are taking the most socially disadvantaged out of their slum dwellings in their thousands.

Of course, you will also find many other stories from the world of PVC products in this issue: from Italian inflatable furniture to trendy applications made of recycled automobile products. Many of these articles were brought to our attention by our readers, for which we are always grateful. So, if you have an idea for a story, we look forward to hearing from you and in the next issue you could see your own article idea in print.

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BASF house in Nottingham,
Bettina Koch

No matter whether it involves drainage pipes or house connections: when using complex pipe systems, bends and branches have to be installed in addition to straight runs. For this reason, choosing the right fitting is very important alongside the proper pipe system. Flexible PVC solutions offer many advantages in pipe installation and guarantee high quality and structural stability during usage.

The perfect house connection: applying the HS-VARIO Coupler.

More Flexible Piping

Cyclists and pedestrians who commute between the German towns of Selm-Bork and Lünen can now do so conveniently. An approximately 1,300-metre-long connecting road has now been developed. Footpaths and bicycle paths have also been built. In order to complete the project, the construction of a 700-metre-long street drainage channel was also necessary. In the process, the previous main sewer made of concrete pipes was replaced by a new system with 19 integrated house connections. CONNEX drainage pipes were utilised as were wall-reinforced fittings by Funke Kunststoffe GmbH. The light PVC pipes proved to be the ideal solution. Their minimal weight and simple sliding socket construction allowed for especially quick assembly. "The pipes could be carried manually to the building site for the nominal widths used and for installation lengths from three to six metres," stated construction supervisor Matthias Maßmann.

Adjustable without Steps

The use of the HS-VARIO Coupler made installing the drainage pipe system much easier. PVC fittings are equipped with an integrated ball allowing the connected tube junctions a pivoting range of 0° to 11° in all directions without adjusting the steps. They have a decisive advantage over traditional fittings with a bend of 15°, 30° or 45°, which are often inadequate when current conditions require other degrees of angles. At the same time, the flexible adjustment greatly cushions soil weight on the pipe. The variable Coupler is therefore excellently suited for use in subsidence mining areas. The increased flexibility of

Photos: Funke Kunststoffe GmbH

The Mediterranean style of living is also now fashionable far to the north of Tuscany. The building materials used must not only correspond with Southern European tastes in home décor, but must also meet the highest demands in terms of energy efficiency and sustainability in other climatic regions. These are requirements which PVC windows fulfil in every respect.

Ready for occupancy: a perfectly-designed Mediterranean house on Lake Constance in Austria with white window frames made of PVC.

SOUTHERN FLAIR

To be able to take home a piece of your last holiday in Italy: many returning holiday travellers dream of this. Whoever needs more than the terra-cotta souvenirs that they brought back from their trip can have their own Mediterranean holiday cottage built back home. The designers of Mediterran Haus Projektentwicklung in Potsdam are actively involved across Germany, Austria and Switzerland and have created an especially large-scale dream of Southern Europe on Lake Constance in Austria with their newest construction project. Residents will soon be able to savour their Mediterranean lifestyle in 220 square metres of living space with four bedrooms, three baths, and a huge living room.

Photos: Mediterran Haus Projektentwicklung

The extremely flexible HS-VARIO Coupler equipped with an integrated ball facilitates joining the house connections to the main sewer.

the tube junctions contributes to the smooth operation of the pipe systems on a long-term basis, explains Frank Recknagel, Consulting Engineer at Funke: “Leaks and roots are a thing of the past with the development of the HS-VARIO Coupler since the integrated ball provides for optimal and long-lasting movement of the entire HS pipe system.” Additionally, installation is easy through the quick and simple joining of the house connections and lateral pipes to the main sewer. Furthermore, pipe layers appreciate the tightly integrated seal which cannot be pushed out or forgotten when installing the system. There are many advantages to this system. It is therefore no wonder that Funke received the Innovation Prize for Architecture and Construction for its flexible fitting in the category of “Products with High Architectural Quality” by the journals for architecture AIT and xia IntelligenteArchitektur.

infr www.funkegruppe.de

The house connections and lateral pipes can be joined quickly and easily to the main sewer through flexible fittings.

The design – in warm colours, staggered floors with hipped roofs, and canopied terraces with round arches and columns – stands firmly rooted in the tradition of Southern European architecture.

Comforting Warmth

The designers of the Southern European project emphasize a mixture of traditional and modern building materials as well as new energy-saving techniques. Optimal heat insulation has been accomplished with 42.5-centimetre-thick, classically-constructed brick walls. The geothermic heating produces comfortable temperatures. Additionally, the large window surfaces allow for an abundance of sunlight. Energy-saving window profiles with heat-insulated glass and a U_W-value of 1.1 W/m² °C retain the warmth in the house. “Both we and the home owners enjoy the white Kömmerling window systems from the profine Group. They come very close to the Mediterranean originals with their sash bar designs. Furthermore, they allow for tremendous energy savings”, states Olaf Zerback, Managing Director of Mediterran Haus Projektentwicklung.

High Demands on Sustainability

The sustainable characteristics of PVC window systems are also impressive. Olaf Zerback states: “Ecological perspectives played a major role in our joint considerations. Of course, PVC windows gain points not only for their long life-cycle and easy maintenance, but also for their recyclability.” In recycling plastic window profiles, the recovered raw material is reutilised precisely from whence it came: in new window and door profiles. They are not inferior to window systems made from virgin materials in any way. In Germany, the Rewindo Fenster-Recycling-Service GmbH successfully organises the recycling of used PVC profiles in a closed life-cycle.

infr www.mediterran-haus.de, www.koemmerling.de, www.rewindo.de

Dream house on Lake Chiem: the PVC window profiles also shape the facade of this building.

TREND-SETTING WINDOW TECHNOLOGY

Saving energy, reducing costs, securing the future: these are principles followed by aluplast, the window-system manufacturer. With its new energy-efficient plastic window system energeto®, it has proven its effectiveness in achieving these goals. This trend-setting technology with its integrated ventilation system, offers outstanding heat insulation and prevents mould build-up.

The market introduction of the innovative plastic window system energeto® 5000 is expected to begin in the first quarter of 2009.

The innovative wing and frame construction of the energeto® window system works well without the metal reinforcement previously necessary inside the plastic profiles, yet maintains the same mechanical qualities for the window. In the process, the new energy-saving system combines two innovative techniques: “bonding inside”, a special wing for the use of adhesive technology, and “powerdur inside”, an innovative plastic reinforcement for window frames. The glass-fibre reinforced thermoplastic Ultradur® High Speed, developed by BASF especially for aluplast, is extruded in flat strips into the PVC frame profile. It thereby replaces the usual steel reinforcement in window frames which has always produced a thermal bridge due to its high heat conductivity. Window manufacturers benefit from this new technology because aluplast extrudes the plastic strips directly into the profile. In addition, transport and installation are facilitated by window frames which are up to 60 percent lighter. “This technology is the ideal basis for all existing system series. We expect to begin with the introduction of energeto® 5000 to the market in the first quarter of 2009. With an U_f-value of 1.0 W/m²K for profiles, we can therefore offer an unprecedented thermal insulation value for a middle seal system with a depth of 70 mm. The energeto® 4000 compression seal system is already being used by our trial customers”, states Patrick Seitz, co-owner of the aluplast group.

Comfortable Ventilation System

Sufficient air flow is an absolute necessity when installing energy-saving windows that are well sealed in order to prevent mould build-up. The Basic Air plus®, which works automatically, regulates the amount of air flow together with environmental conditions and also achieves lower energy consumption while providing hygienic air conditions in living areas. It can also be integrated into the energeto® 5000 system.

Works well without the metal reinforcement previously necessary inside the plastic profiles: the window system energeto® 4000.

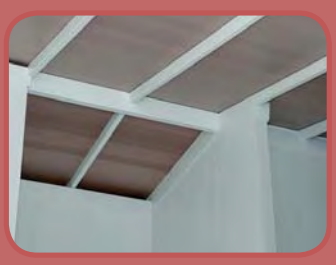
Strong Partner in the Window Market

The aluplast company group currently employs over 1,400 workers and is represented globally with over 20 production and sales offices. The group ranks third compared with other European companies and fifth globally. Numerous technical innovations, compatible window systems, as well as strategic acquisitions and growth have made the company a leading supplier of plastic window systems. In the process, the profile manufacturer has made use of the export initiative “Energy Efficiency Made in Germany” established by the German Federal Ministry of Economics and Technology and the energy efficiency label to market its products and services in foreign markets.

infr www.aluplast.de

Photos: aluplast GmbH

PVC Alleviates Poverty in Venezuela



Photos: Pequiven

Many people in Venezuela have received new homes through the construction of "PetroCasas". These new dwellings contain many building products made of PVC.

PVC is being creatively used to alleviate homelessness and help meet social development goals in South America. Pequiven, Venezuela's petrochemical and plastics producer has created PetroCasa – a social production company, which is designing and building homes primarily from PVC materials. The 'PetroCasas' or petro-homes are the result of the development of Venezuela's down-stream petrochemicals and polymer sector to make use of its substantial oil and gas supplies.

These PVC houses are built to high safety and quality standards. According to Pequiven, the vinyl components offer weather and flame resistance as well as protection from ultra-violet rays. The PVC homes are also designed to meet Venezuela's specific conditions, which in certain cases mean they have to be earthquake proof. The flexible modules offer different combinations and design forms.

The PVC homes will be used to speed slum clearance and to provide affordable housing for the poor of Venezuela. The project is therefore viewed as not just about building houses but more about building communities. Venezuela initially developed a pilot site, in the Nuestra Señora de Coromoto Community, in the state of Carabobo, before extending the initiative, throughout the country.

The use of PVC products speeds up building completion time. On average PetroCasa can build 10 of its houses in 12 days, which is significantly quicker than when using conventional house building processes. The company aims to bring its building time down to completing 10 houses a week.

Impressive Social Progress

Pequiven produces 130,000 tonne/year of PVC, of which around 25% will be used by PetroCasa. The current plan is to produce up to 12,400 new 70m² homes a year. However, three new PetroCasa plants are being built which will then increase building capacities to around 40,000 new homes a year.

The houses are built at a cost of around $20,000. So far approximately 2,700 houses have been built, although production is expected to rise substantially in the coming months.

The houses have a basic internal shell of concrete, which is covered with vinyl sidings and window/door fittings and topped off with wooden effect vinyl roofs. PVC is viewed as being particularly suited for this development project and offering significant advantages over traditional materials like wood and metal.

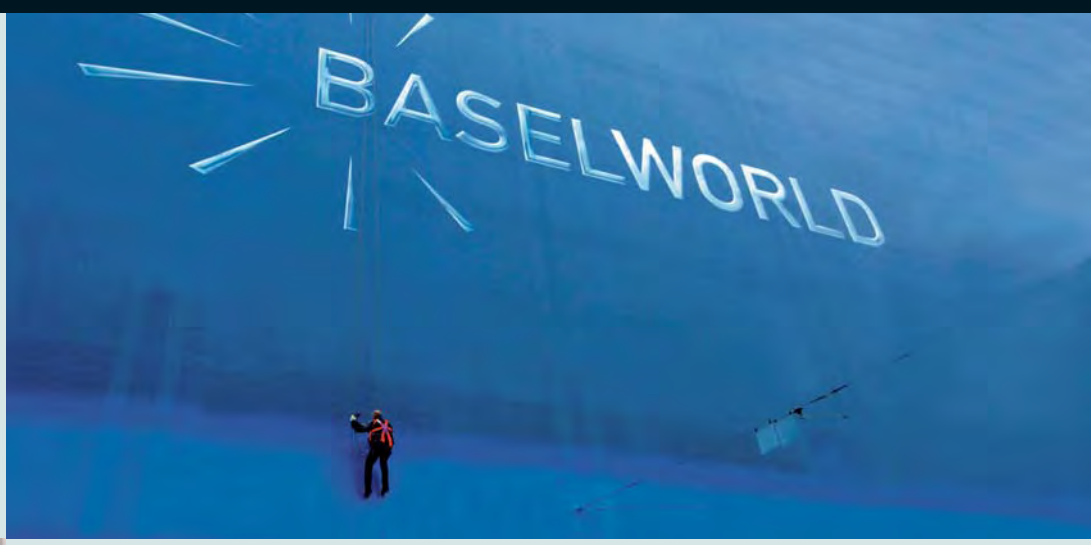
Long-Lasting Solutions

PVC is tough and durable, so will last for many, many years in the challenging humid tropical Venezuelan climate without requiring maintenance. It is low cost, can be formed into all of the building components required in easy-to-assemble kits. PVC is naturally flame resistant and, in terms of aesthetics, a wide range colours and textures can be added to provide an appealing finish. And in the future, if required, if the home is no longer needed, all of the PVC components can easily be recycled into a brand new PetroCasa.

Venezuela is now also exporting the PetroCasa system to others in need. Cuba has already received more than 100 houses donated by Venezuela and is currently building a facility to produce its own version and new 4 floor versions. Houses have also been donated to Peru to help people affected by an earthquake and Venezuela has announced its intention to share PetroCasas with Nicaragua and Bolivia as well. info www.pequiven.com

ADVERTISING ON A GRAND SCALE

No matter if it involves decoration, information or advertising: large-scale printing with oversize motifs is experiencing an enormous boom. It is a field with tremendous potential if you just think of the numerous XXL posters which cover entire façades and construction sites. In the meantime, flexible film and hard foam sheets made of PVC have become firmly established in this area.



For the world's largest clock fair, Basel World, Makro Art AG decorated the exhibition halls with finely-stitched, PVC-coated mesh fabric.

Decorating bare façades and dreary lorries with quality printing: this was Franz Bussmann's idea when he ventured into business as a free-lancer in 1997 and sealed the deal by purchasing an expensive large-format printer. Idealism and courage paid off for the Swiss company. Makro Art AG from Grosswangen in the canton of Lucerne specialises in large-format printing and now has 25 employees who have completed some spectacular projects. Their services extend from planning, design and printing to technical and textile manufacturing, steel construction, and assembly.

The Ideal Supporting Material

In carrying out his projects, Bussmann has relied on the time-tested properties of a diverse range of PVC products. This is the reason why printed tarpaulins made of vinyl net were used for the artificial sky in Basel this summer. International artists designed motifs for the translucent fabric under which pedestrians were able to stroll. For Basel World, the world's largest clock fair, and for Art Basel, the international art exhibition, the Swiss specialists even decorated entire exhibition halls with the material. "We produce motifs for large-scale advertising on polyester mesh fabric with a regular threaded structure, which our German partner Verseidag furnishes with a PVC coating. By so doing, we achieve brilliant printing results for rolled goods with a width of up to five metres", states Bussmann. The special open stitch of the material reduces the wind stress so that few attachments are required on the scaffolding or building walls. Furthermore, the light, open fabric is rain-permeable, weather-resistant and virtually tear-proof. In the process, the PVC-covered fabric can be easily assembled using sewing, fusing and gluing techniques.

Digitally-printed PVC film on a coach.

A Material for Every Kind of Advertising

This Swiss company values PVC as a supporting material to decorate lorries and buses. Compact, digitally-printed film is used for this purpose. Additionally, a favourite advertising medium is a light-box system which uses translucent PVC film with rear projection to attract attention. When flexibility is not required – e.g. for signs or exhibition materials – Makro Art prints on rigid PVC foam sheets. In this way, the company is able to complete an entire spectrum of projects using a diverse range of PVC media.

info www.makroart.ch

Photos: Makro Art

Test facility in Romorantin: between 25 and 50 old vehicles are dismantled here every day.

Too good to throw away: casings from sun visors made of non-rigid PVC.

Photos: Re-source Industries

New Trends for Old Cars

Gearshift covers, dashboard casing, elastic flooring: many products made of non-rigid PVC are used in the automobile and building industries. But what happens to materials from old automobiles? After all, the EU End-of-Life Vehicle Regulation requires that 95 percent of materials and parts must be reused or recovered from 2015.

An example from France shows how automotive recycling is working in practice. The magic word here is recycling. It is gaining importance thanks to technological developments. As a study about the French market shows, approximately 20,000 tonnes of recyclable non-rigid PVC is derived from automobile and building refuse. This material can be processed into high-grade secondary raw material for practical new products, an important contribution to saving valuable resources.

Dismantling Old Cars

Approximately 12 million old vehicles are taken off the road every year across Europe. On average, there are four kilograms of PVC in each of these vehicles, for example, in door casings, sun visors or electrical wire insulation. These can be dismantled and the material reused since the waste is mostly clean or only slightly impure. The first European test plant went into operation in Romorantin on the Loire in 2007 based on the initiative of the companies Indra and Suez (Sita). It provides for the dismantling of 25 to 50 vehicles per day. The plastic refuse is sorted into various containers which is then transferred to the respective recycling companies. Only materials which are too contaminated or difficult to separate are disposed of, or sent for energy recovery.

Practical and as good as new: briefcases made of recycled PVC.

High-Grade Recycled Products

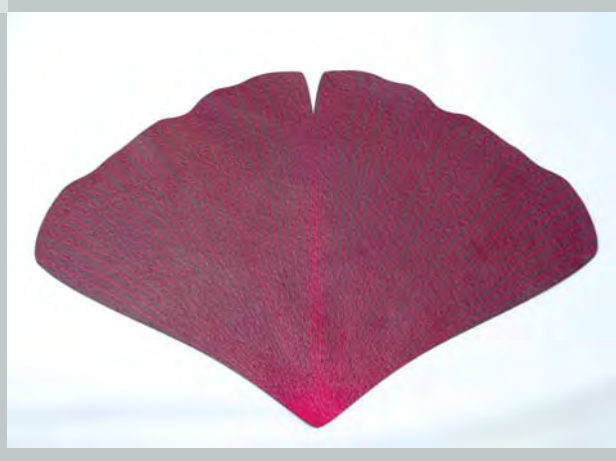
All non-rigid PVC refuse which comes from old vehicles – also that which contains up to 30 percent textile fibre – is processed into high-grade granulate by the company Chaize in Buchelay, west of Paris, through a patented recycling process. The secondary raw material Pévéchouc® which is extracted in this way is 100 percent recyclable and can be processed into numerous new products, for example, into sandals, modern briefcases, or flooring tiles for commercial use – due to its outstanding material properties. Autovinyle, the association for developing the recycling of PVC in the automotive industry, actively supports these recycling efforts.

Recycling PVC Building Products

There are also possibilities for recycling building products made of rigid and non-rigid PVC. The driving force at the European level is the PVC industry's voluntary commitment "Vinyl 2010" which is on track to increase the recycling of post-consumer PVC waste by over 200,000 tonnes a year by 2010. Additional factors of success for recycling include the establishment of efficient national schemes for end-of-life material waste management. The SFEC – the French Calendering and Coated-Fabric Trade Association – is therefore working to establish a national collection system for old PVC flooring, which was previously recycled by the German AgPR – Association for PVC Floor-Covering Recycling. Currently a study is being conducted to determine whether the reintroduction of such refuse into the materials cycle is also feasible in France.

Roller made of recycled PVC.

Modern and comfortable: "Clakett" sandals made of Pévéchouc®.



Placemat in the shape of a ginkgo leaf.

infr www.re-source-industries.fr, www.trucs-trouvailles.com, www.autovinyle.com, www.sfec-services.org

Photos: Trucs & Trouvailles

The food and energy crisis: who isn't worried about it? Vinyl 2010, the European PVC industry's sustainable development initiative, is interested in what young people aged 18 to 30 years think about this topic. The organisation has therefore launched its second international Essay Competition.

INTERNATIONAL COMPETITION

This year's Essay Competition deals with this question: "Faced with a food and energy crisis, how can society improve its well-being?" In the essay, Vinyl 2010 would like young people to provide ideas for how these problems might be resolved from their perspective.

The closing date to enter the competition has actually passed with nearly 1,000 young writers from across the world registering to take part. The entrants now have until 31st January to submit their essays, and have the opportunity to win up to €5,000. In addition, their essays will be published, and they will have the chance to speak at an international high-level event on sustainable development. Esteemed members of the international jury will judge the essays submitted and then determine the winners. The competition is organised by Vinyl 2010 with the help of a number of sustainable development partners, ranging from academia to NGOs. On board for the first time is the European web magazine and community CaféBabel (www.cafebabel.com). To read more about the competition and read the winning entries at the close of the competition go to:

infr www.vinyl2010.org/essaycompetition

Photo: Vinyl 2010

Smooth Comfort

Comfort, softness, mobility: the 1960s not only dispelled established myths about living, but also revolutionised home décor. Impressive evidence of this is the legendary bean bag chair “Sacco” from 1968. Designed by Piero Gatti, Cesare Paolini and Franco Teodoro, the prototypes first started as transparent, heat-sealed vinyl film that was filled with polystyrene beads. The comfortable bean bag chair celebrated its 40th anniversary in 2008 with over a million sold in numerous colours, styles, and materials. Zanotta offers the pear-shaped sack with a resistant and durable PVC covering for outdoor use.

Easy Living

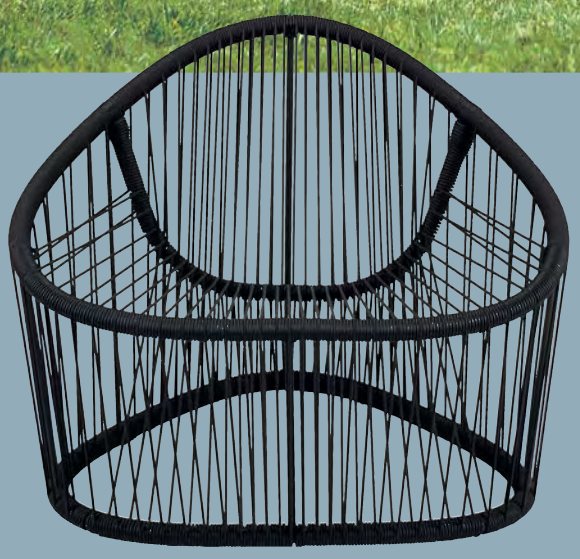
In the 1960s, ergonomics became fashionable. In the process, furniture manufacturers sought possibilities for modern seating culture that were not rigid and constricting. The designers Jonathan De Pas, Donato D’Urbino and Paolo Lomazzi then came across the idea of developing a chair filled with air. Zanotta introduced it to the market in 1967 with the name “Blow”. Manufactured from clear, yellow, or red PVC film, today it is a classic design among legendary, inflatable furniture. The chairs, heat-sealed through a high-frequency technique, make up a vital component of Zanotta’s collection. It is with good reason that “Blow” has found a permanent home in the Museum of Modern Art in New York and the Design Museum London.

Italian Seating Culture

Some trends from the past still enjoy continued popularity today. One example is the light, inflatable, plastic furniture from the 1960s used by young people in particular. A trendsetter in this area was the Italian furniture manufacturer Zanotta which took the furniture scene by surprise with its unconventional designs. The examples on this page, which just focus on seating furniture, show that Italian design still believes in plastic materials such as PVC.

Filigreed Tautness

This year Prospero Rasulo designed the seating furniture series “Club” with elegant armchairs and sofas specifically for outdoor use. The basic material for the frames consists of painted steel. The seats and backrests are made of a meshwork of PVC straps with internal nylon reinforcement. The robust, weather-resistant materials are most suitable for outdoor use and also pleasing to the eye.



Photos: „Sacco“, „Blow“ and „Club“, Zanotta

Elegant Style

Comfort is not only in demand at home. Well-formed, ergonomic furniture also helps one feel better while out and about. The same applies to the series “Floatingframe” by the Italian designer Alberto Meda. This furniture for public areas is available in two, three and four seaters. The seating system is arranged on a frame made of polished, chromed or painted aluminium. The seats are designed with PVC-coated polyester mesh, yielding an elegant yet durable seating solution by the Italian manufacturer Alias.

Photos: Alias

infr www.zanotta.it, www.aliasdesign.it