Architects‘ Manual – Interiors

Products and systems
Solutions
References

It should be noted that details, illustrations, general technical information and diagrams contained in this document are only general proposals and details which merely describe basic functions schematically. No precise dimensions are included. The applicator/customer is independently responsible for determining the suitability and completeness for the product in question. Neighbouring works are described only schematically. All specifications and information must be adjusted or agreed in the light of local conditions and do not constitute work, detail or assembly plans. The technical specifications and information on the products contained in the Technical Data Sheets and system descriptions/approvals must always be observed.

Space to enhance the quality of life

Surface quality as part of a feel-good environment

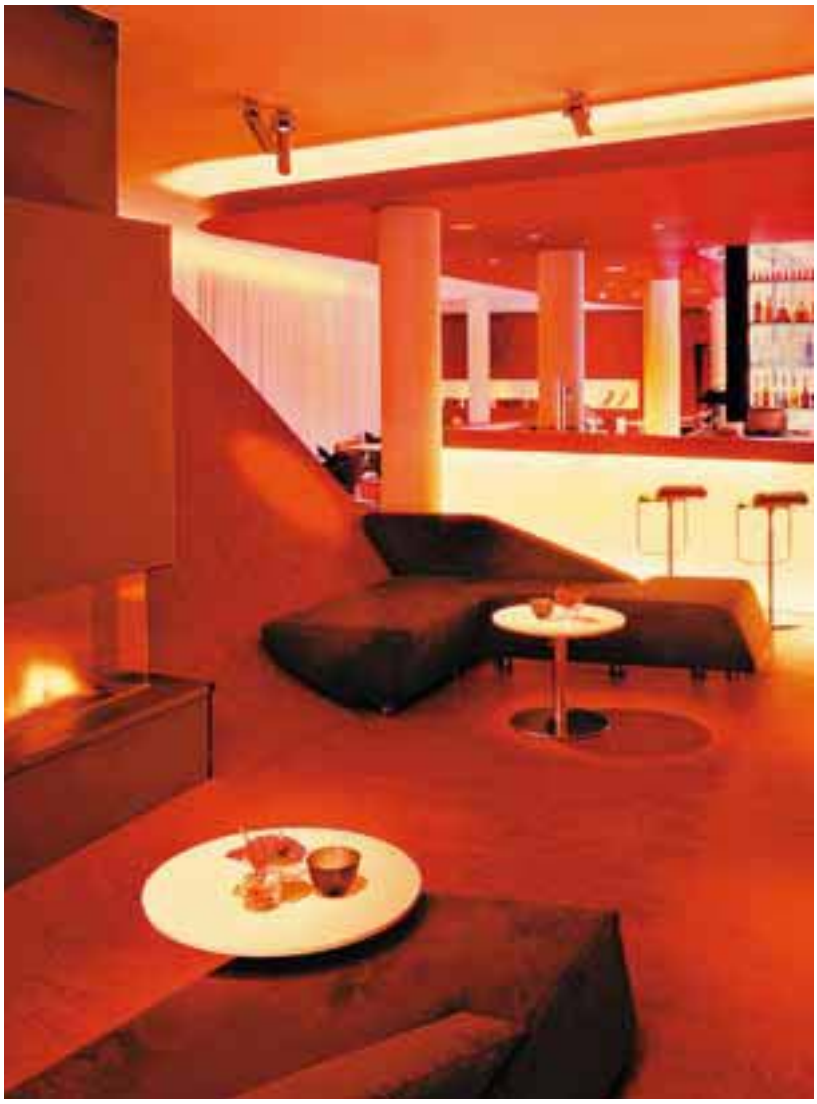
At the planning stage of a project, there can be nothing more reassuring than working together with a manufacturer whose product portfolio offers just what is needed to realise your design ideas. The plethora of different surface coating products on the market can be quite disorientating. A well-structured system which is also extremely flexible is a boon in this situation. All products from Sto are finely coordinated, offer diverse scope for combination and come with various seals of approval. This guarantees that you are in the right hands, particularly with regard to the technical side of interior design.

Ongoing quality

The ongoing development of our products is a prime concern at Sto. This guarantees premium quality, state-of-the-art materials and application properties. The advantages are obvious: with Sto, building owners can rest assured that their investments is economically viable. And planners and designers benefit from the efficiency and know-how offered by Sto. Ultimately, this means that the ever tighter cost margins in the building trade can be coped with more easily and with less stress.

Expertise in all types of surfaces

Apart from a room's dimensions, it is the character of its surfaces which are instrumental in shaping its atmosphere. Factors such as colour, texture, and the quality and feel of materials play an important role here. The visions which crystallise in the course of evolving the design concept should be translated into a real product as quickly and authentically as possible.
You can count on competent support from Sto right from



Q! designer hotel in Berlin, D (Graft GbR, D: External wall insulation system, interior paints)

Sto Info Factory in Stühlingen, D (Arno Design GmbH, D: Various products)

Rocco Forte Group Deluxe Hotel in Frankfurt/Main, D (Porphyrios Associates, London and Architektengruppe GHP, Oberursel: various products)

the start of the design process. We will be pleased to place our broad and extensive fund of know-how at your disposal right from the outset. Rough or smooth, matt or gloss, discreet or extravagant: we at Sto are specialised in the production of a whole variety of different surface finishes, for walls, floors or ceilings.

A clean bill of health

At Sto, product quality and environmental compatibility are two inseparably linked elements of our research efforts. As a result of this approach, Sto now offers the most comprehensive product range to meet all the stringent requirements stipulated by the Federal Environmental Protection Agency. The products also undergo regular testing by the TÜV Technical Control Board for toxic and ecologically critical contents. Interior coatings from Sto are low on emissions and totally free of solvents and plasticizers. A strict selection process also guarantees that the employed raw materials are cadmium- and lead-free.

Sto's service team is there to answer your questions

We will be pleased to answer the questions which typically arise at an early stage of every planning process. Please contact your local Sto service team or call Sto's hotline for architects on +49 7744 57-1020. A list of Sto's agencies can be found at: **www.sto.de**

When studying the Architects' Manual-Interiors, please note that we reserve the right to modify product properties. Colours may vary from those depicted in illustrations. Errors and omissions excepted. The illustrations shown are not binding.

Metropolitan University Graduate Centre in London, GB (Studio Daniel Libeskind, USA: StoSilent Panel Aluminium acoustic ceiling)

BDA offices with "flexiroom" in Stuttgart, D (Bottega + Ehrhardt Architekten, D: Epoxy resin floor coating)

Products and systems

Textures and surface finishes from smooth to very coarse · Design studies · Interior paints
Interior plasters · Decorative coatings · Wall and ceiling coverings · Acoustics
Internal insulation · Floor coatings · Lacquers and stains

Sto references

Examples of architecture employing Sto products and systems

Details

Detail solutions

StoColor System

Colour variety, according to the StoColor System and other colour systems
The 3-level principle behind the StoColor System: The human colour perception area,
the colour wheel with 24 basic tones, the five colour rows

Bills of quantities

Support in project planning · Useful internet links

Background information on interiors

Colour · Textures and surface finishes · Light · Indoor climate · A healthy home environment · Protecting building substance
Room acoustics · Seals of approval · Rules and standards · Glossary

Further information

Specific information and brochures from Sto

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Contents

Space + surface = atmosphere

The right system for interiors

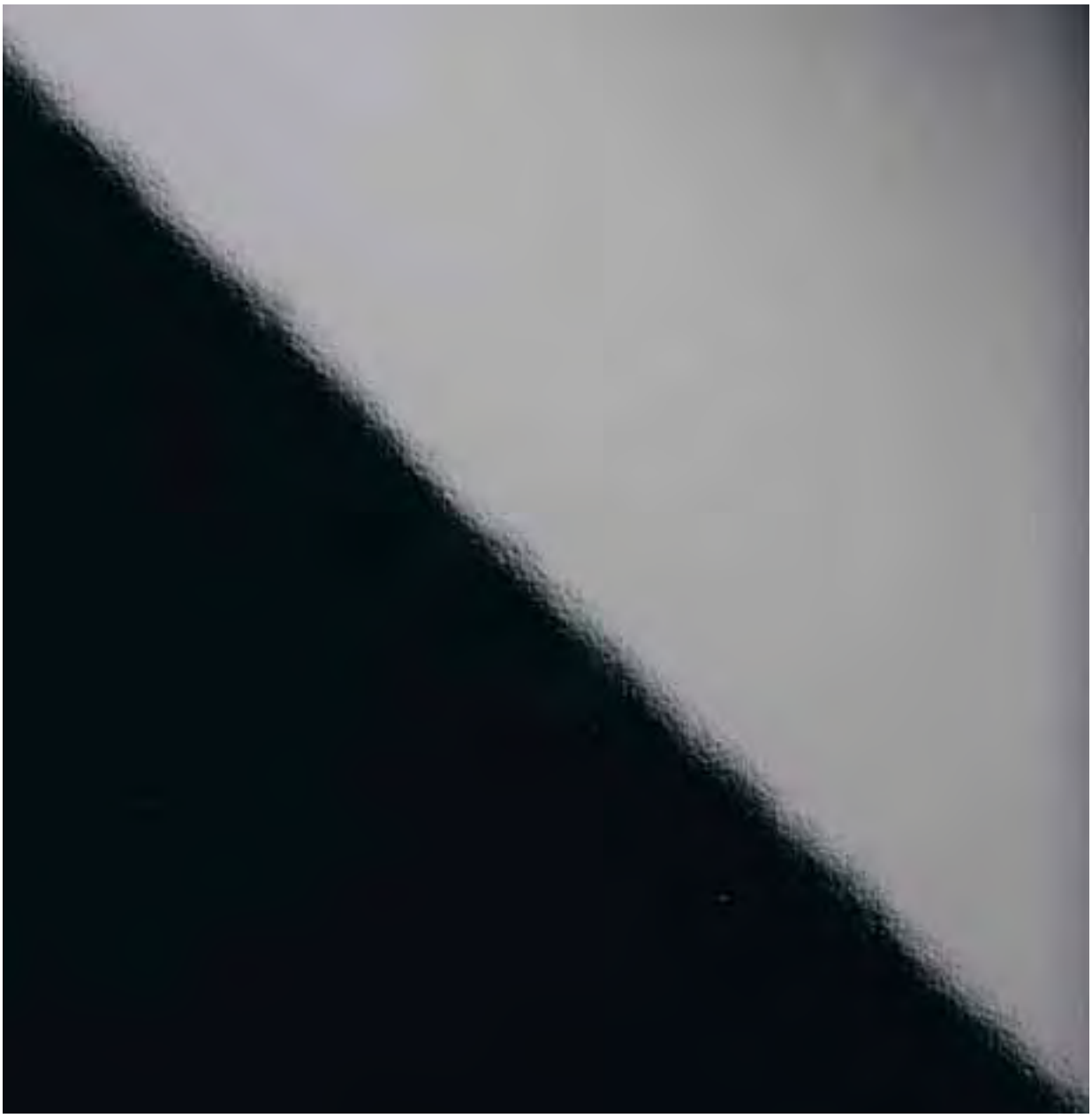
The character of an interior is determined on the one hand by its spatial proportions and on the other by the attributes of its ceiling, walling and flooring. Colour, lightness, texture, finish and depth are just some of the factors by which the surfaces which shape the character of rooms can be defined. Sto offers the right solutions to realise your visions.

The atmosphere in a room is of such great importance because we live and work in buildings and spend a large portion of our lives indoors. Interior design today covers a vast spectrum. With this in mind, the "Products and systems" section presents a selection of our coatings – arranged not in the traditional manner according to product types but on the basis of the coatings' visual effects: from smooth through fine, rough, coarse to very coarse. This cross-section of our broad range will provide you with an idea of the design scope offered by our products. Many more finishes and textures are possible, of course – with virtually no limits on your creativity. At Sto you will find a perfectly coordinated set of tools with which to realise your design ideas. Let us inspire you! Our advisory service will be pleased to answer your questions at any time: www.sto.de

NDR in Hamburg, D (Schweger + Partner, D: StoVerotec Glas)

Hotel Side in Hamburg, D (Jan Störmer Partner, D: StoLook Effetto)

Lacquer
Sto Premiumlac Gloss AF



While glass is unrivalled for a smooth appearance, lacquers also add an exquisite shine to surfaces. Lacquers are furthermore elegant and timeless, and also boast outstanding hiding power and excellent application properties – as demonstrated by Sto Premiumlac Gloss, for example.

Application	Colour choice	Mechanical resistance	Ecology
• indoors and outdoors • on wood • on timber materials • on metal and concrete	●●	●●	---

●● = excellent ● = good ● = limited suitability

Glass panelling
StoVerotec Glas

StoVerotec panelling is an interesting proposition if you are considering adding highlights with high-quality reflective surfaces. The benefits are self-evident: the panelling is robust and the broad variety of colours means that it will fit into any scenario.

Application	Colour choice	Mechanical resistance	Ecology
• indoors and outdoors • on load-bearing substrates	●●	●●	●

●● = excellent ● = good ● = limited suitability

Decorative coating
StoLook Veneziano

This smooth intermediate plaster from the "Linea di calce" line features a stone look with a Mediterranean character. In addition to lending interiors a Mediterranean flair, it also contains natural raw materials in the form of marble, lime and water which provide for excellent environmental compatibility and ecological sustainability.

Application	Colour choice	Mechanical resistance	Ecology
• indoors • wall and ceiling	●	●	● ●

● ● = excellent ● = good ● = limited suitability

Decorative coating
StoLook Marmorino

StoLook Marmorino from the "Linea di calce" line shows that a plaster need not leave a wall looking dull and dreary. The 100% mineral plaster on a lime base with marble powder can be applied in thin layers to produce extremely smooth surfaces featuring a particularly impressive depth effect and brilliant colours.

Application	Colour choice	Mechanical resistance	Ecology
• indoors • wall and ceiling	●●	●	●●

●● = excellent ● = good ● = limited suitability

Decorative effect coating
StoLook Marmorino Fantastico

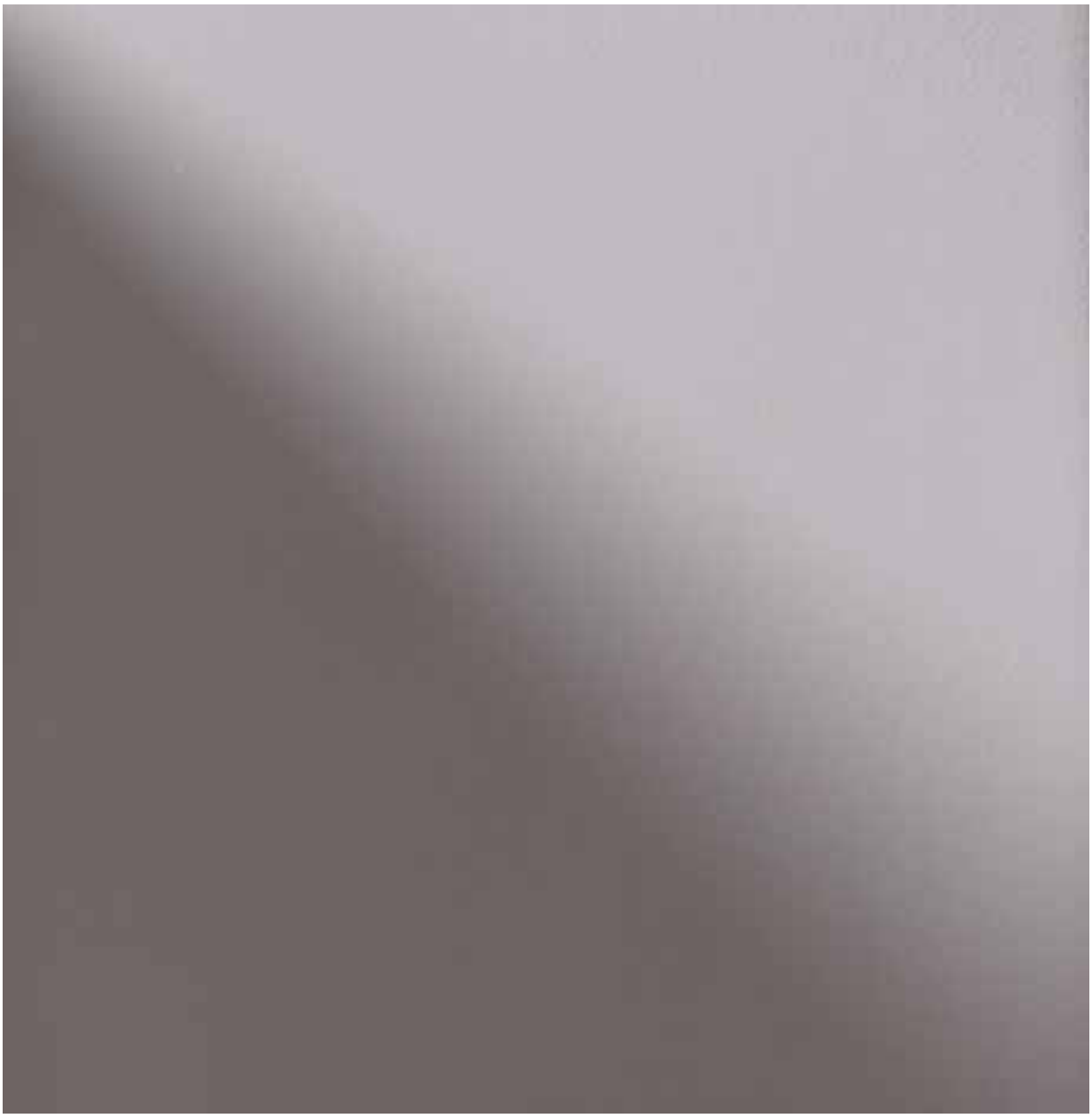
Marble surfaces generally provide for a stylish and charming appearance, the innate character of the stone conjuring up imaginative patterns. The mineral plaster StoLook Marmorino Fantastico does justice to its name, the combination of different materials, colours and textures offering boundless scope for creative interior design. The coating with the transparent protective wax StoLook Wax forte additionally protects the extremely smooth, very impressive-looking surface from water and enhances the overall brilliance and depth effect.

Application	Colour choice	Mechanical resistance	Ecology
• indoors • wall and ceiling	●●	●	●●

●● = excellent ● = good ● = limited suitability

Smooth intermediate plaster coat with paint

StoLevell In XXL



A fine texture often adds the defining touch to smooth surfaces. A very appealing example here is the organic spray plaster StoLevell In XXL, provided with an appropriate coating of paint. This dispersion filler can be applied to mineral and organic substrates, is quickly over-coatable and meets Sto's high environmental compatibility standards.

Application	Colour choice	Mechanical resistance	Ecology
• indoors • wall and ceiling	●●	●	●●

●● = excellent ● = good ● = limited suitability

Floor coating
StoPur BB 100

A floor must be capable of absorbing diverse forms of stress while at the same time offering a high level of walking comfort. StoPur BB 100, an attractive, solvent-free floor coating on a polyurethane resin base, fits the bill here. It forms a seamless, smooth surface, is hard-wearing and at the same time sufficiently elastic to ensure a pleasant walking experience. Colour chips which can be incorporated into the flooring to open up broad scope for creative design ideas.

Application	Colour choice	Mechanical resistance	Ecology
• indoors • industrial and commercial	● ●	● ●	● ●

● ● = excellent ● = good ● = limited suitability

Floor coating
StoPox WL 100

The epoxy resin coating StoPox WL 100 from Sto demonstrates that ecology and health aspects, technical requirements and aesthetics are by no means mutually exclusive. The water lacquer is solvent and nonyl phenol-free and is classified as a low-emission building material. Its slightly glossy surface reflects light into the room without causing any glare.

Application	Colour choice	Mechanical resistance	Ecology
• indoors • industrial and commercial	●●	●	●●

●● = excellent ● = good ● = limited suitability

Sound-absorbing coating
StoSilent Top

Sometimes a planner needs a surface which combines an attractive appearance with good acoustic properties. StoSilent Top is just the thing here – a coating for Sto carrier boards consisting of expanded glass granulate which offers good sound-absorbing properties. With the sleek elegance of the fine, seamless surface, StoSilent Top is thus the ideal choice in rooms frequented by large numbers of people, for example.

Application	Colour choice	Mechanical resistance	Ecology
• indoors • wall and ceiling	●	●	● ●

● ● = excellent ● = good ● = limited suitability

Decorative coating
StoLook Fondo

In designing wall surfaces it is important to allow creativity free rein. StoLook Fondo fits the part here, its universal workability offering virtually boundless scope for individual design ideas. The decorative intermediate plaster based on lime and marble powder produces an impressive matt finish, with various tints, scumbling techniques and modelling tools enabling diverse surface design options.

Application	Colour choice	Mechanical resistance	Ecology
• indoors • wall and ceiling	●	●	●●

●● = excellent ● = good ● = limited suitability

Decorative coating
StoLook Piccolo

Spray or roller – different application techniques can be used to achieve very different textures in terms of touch and appearance with the StoLook Piccolo multicolor chip coating. The variant shown here has produced a fine to medium texture, for example. Roller application results in a smoother look.

Application	Colour choice	Mechanical resistance	Ecology
• indoors • wall and ceiling	●	● ●	●

● ● = excellent ● = good ● = limited suitability

Wall and ceiling coverings

Metallic coat on StoTap Pro 100 P glass fibre mat

Apart from serving to reinforce walling and preparing substrates for high-quality coatings, a decorating cloth can also be used to open up creative scope for exclusive design techniques. A metallic coating lends the StoTap Pro 100 P cloth a stylish appearance and a highly individual touch, for example – ideal for extravagant designs or subtle highlights.

Application	Colour choice	Mechanical resistance	Ecology
• indoors • wall and ceiling	●●	●	●

●● = excellent ● = good ● = limited suitability

Sound-absorbent acoustic covering

Sto-Silentyl

Sometimes a wallpaper is more than just a wallpaper. This finely textured acoustic wallpaper from Sto, for example, is always the right choice in rooms in which a lot of communication takes place, such as open-plan offices, medical practices, nursery schools or sales premises. Fast and simple application, an attractive surface and diverse colouring options make this system component a proven and effective acoustic solution.

Application	Colour choice	Mechanical resistance	Ecology
• indoors • wall and ceiling	●	● ●	●

● ● = excellent ● = good ● = limited suitability

Floor coating
StoPox BB OS

As the most highly stressed part of a building structure, the floor is subject to very particular requirements. The StoPox BB OS floor coating is ideal for use on industrial floors subject to medium levels of mechanical stress, for example. StoPox BB OS is free of both solvent and silicone. Its chemical resistance makes it suitable for use as a substrate wherever floors are subject to heavy use.

Application	Colour choice	Mechanical resistance	Ecology
• indoors • industrial and commercial	●●	●●	●

●● = excellent ● = good ● = limited suitability

Decorative coating
StoLook Effetto

A surface can be much more than a mere backdrop – as demonstrated by StoLook Effetto, for example, an intermediate plaster on a lime base from the "Linea di calce" line which combines a mineral matt finish with a natural glimmer effect. This results in different effects according to the angle of the incident light, the surface giving a continually changing appearance.

Application	Colour choice	Mechanical resistance	Ecology
• indoors • wall and ceiling	●	●	● ●

● ● = excellent ● = good ● = limited suitability

Decorative coating
StoSil Struktur Medium

The texturing paint StoSil Struktur Medium enables tasteful yet interesting and individual finishes for walls and ceilings. Various application techniques and grain sizes can be used to produce creative coatings and diverse textures ranging from fine to rough. Free of any added active agents, it nevertheless offers natural protection from mould.

Application	Colour choice	Mechanical resistance	Ecology
• indoors • wall and ceiling	●	●	●●

●● = excellent ● = good ● = limited suitability

Interior plasters
StoGranit

It is a fallacy that plastered surfaces are always monotonous and boring. The interior plaster StoGranit, for example, features a colour range modelled on natural tones which opens up vast scope for combination, thus creating unique and distinctive surfaces. This plaster's high level of resistance to mechanical stress makes it ideal for use in staircases, corridors or foyers.

Application	Colour choice	Mechanical resistance	Ecology
• indoors • wall and ceiling	●	● ●	---

● ● = excellent ● = good ● = limited suitability

Decorative coating
StoSil Decor Medium

Flexibility is often of the essence in building practice – particularly when it comes to designing surfaces. The texturing paint StoSil Decor Medium enables surface finishes akin to those attained with spray plasters – from fine to rough, depending on the grain size used. StoSil Decor Medium also offers natural protection from mould, without any added active agents.

Application	Colour choice	Mechanical resistance	Ecology
• indoors • wall and ceiling	●	●	●●

●● = excellent ● = good ● = limited suitability

Decorative coating
StoLook Struktur

The filling dispersion paint StoLook Struktur can be applied according to a variety of individual methods, allowing architects' creativity virtually free rein. The paint can be sprayed, brushed, rolled or trowelled and various modelling tools can be used to produce a host of different looks.

Application	Colour choice	Mechanical resistance	Ecology
• indoors • wall and ceiling	● ●	●	●

● ● = excellent ● = good ● = limited suitability

Effect coating

StoColor Metallic on stippled structural plaster K 2.0

Very special visual effects are often attained by simple means. The StoColor Metallic top coat, for example, provides for a metallic surface effect and can be applied to any stippled structural plaster from Sto. The effect coating can be used both indoors and outdoors, is water-repellent and can be tinted in accordance with the StoColor Metallic collection, providing for even greater individuality in wall and ceiling design.

Application	Colour choice	Mechanical resistance	Ecology
• indoors • wall and ceiling	●	●	●

●● = excellent ● = good ● = limited suitability

Interior plasters
StoDecolit K

The play of light and shade frequently introduces interesting contrasts into a room – so why not exploit this fact on the largest surface in a room as well? Light and shade effects really bring to life the textures produced with the versatile interior plaster StoDecolit, for example. Stippled, rilled or free-style structures and different grain sizes give rise to numerous versatile design options.

Application	Colour choice	Mechanical resistance	Ecology
• indoors • wall and ceiling	● ●	● ●	●

● ● = excellent ● = good ● = limited suitability

Sound-permeable coating
StoSilent Superfein

A surface's special attraction may be more than just skin-deep. StoSilent Superfein, for example, boasts far more than just good looks: it is an acoustically transparent coating allowing individual colour design which can be applied to various Sto acoustic systems as a top coat to provide good room acoustics. The silicate-based coating is also good for the environment, meeting the very highest ecological standards.

Application	Colour choice	Mechanical resistance	Ecology
• indoors • wall and ceiling	●	●	●●

●● = excellent ● = good ● = limited suitability

Floor coating

StoPox BB OS / StoPox EP Thick Seal

Floors are walked over, rolled over and generally subject to plenty of rough treatment. Industrial floors subjected to medium levels of mechanical stress call for a floor covering which is able to withstand such rough use, such as the StoPox BB OS floor coating. In combination with a scattering of Sto Ballotini beads and StoPox EP Thick Seal, StoPox BB OS transforms simple flooring into an attractive and slip-resistant surface.

Application	Colour choice	Mechanical resistance	Ecology
• indoors • industrial and commercial	●●	●●	●

●● = excellent ● = good ● = limited suitability

Interior plasters
StoDecolit MP

Fine and smooth surface finishes are not always called for – sometimes, a distinctly coarse texture is more suitable. Such an appearance is easily attainable with the versatile interior plaster StoDecolit. StoDecolit can be textured with a trowel to produce a surface with coarse ridges and smaller grooves which make the wall a haptic experience in its own right.

Application	Colour choice	Mechanical resistance	Ecology
• indoors • wall and ceiling	●●	●●	●

●● = excellent ● = good ● = limited suitability

Interior plasters
StoDecosil MP

Sometimes surfaces cry out for an unusual look that will set them apart. This calls for unconventional tools to create special wall surfaces – as illustrated here by the free-style structural plaster StoDecosil, for example. It is the play of light and shade on the surface which really brings StoDecosil's texture to life. StoDecosil is also natureplus® certified, confirming its exceptional environmental compatibility.

Application	Colour choice	Mechanical resistance	Ecology
• indoors • wall and ceiling	●	●	● ●

● ● = excellent ● = good ● = limited suitability

Natural stone panelling
Sto-Fossil SKL

Architectural design employing natural stones is always unique and individual, as it offers endless variety in terms of colours, textures and surface finishes. As its name suggests, natural stone is also a natural building material which scores top marks for environmental compatibility. Featuring a coarse texture yet an overall gentle character, Sto-Fossil SKL is a special eye-catcher on any part of a building.

Application	Colour choice	Mechanical resistance	Ecology
• indoors and outdoors • on load-bearing substrates	●	●●	●●

●● = excellent ● = good ● = limited suitability

Interior plasters
StoDecolit MP Antico

While every type of surface finish has its own appeal, combining different products usually opens up quite different possibilities. StoLook Punto Z can be added to the StoDecolit free-style structural plaster by means of a special application method, for example, to create a coarse, antique-style texture whose aesthetic appearance is further enhanced by the interplay of light and shade and through the specific use of natural and artificial light.

Application	Colour choice	Mechanical resistance	Ecology
• indoors • wall and ceiling	● ●	● ●	●

● ● = excellent ● = good ● = limited suitability

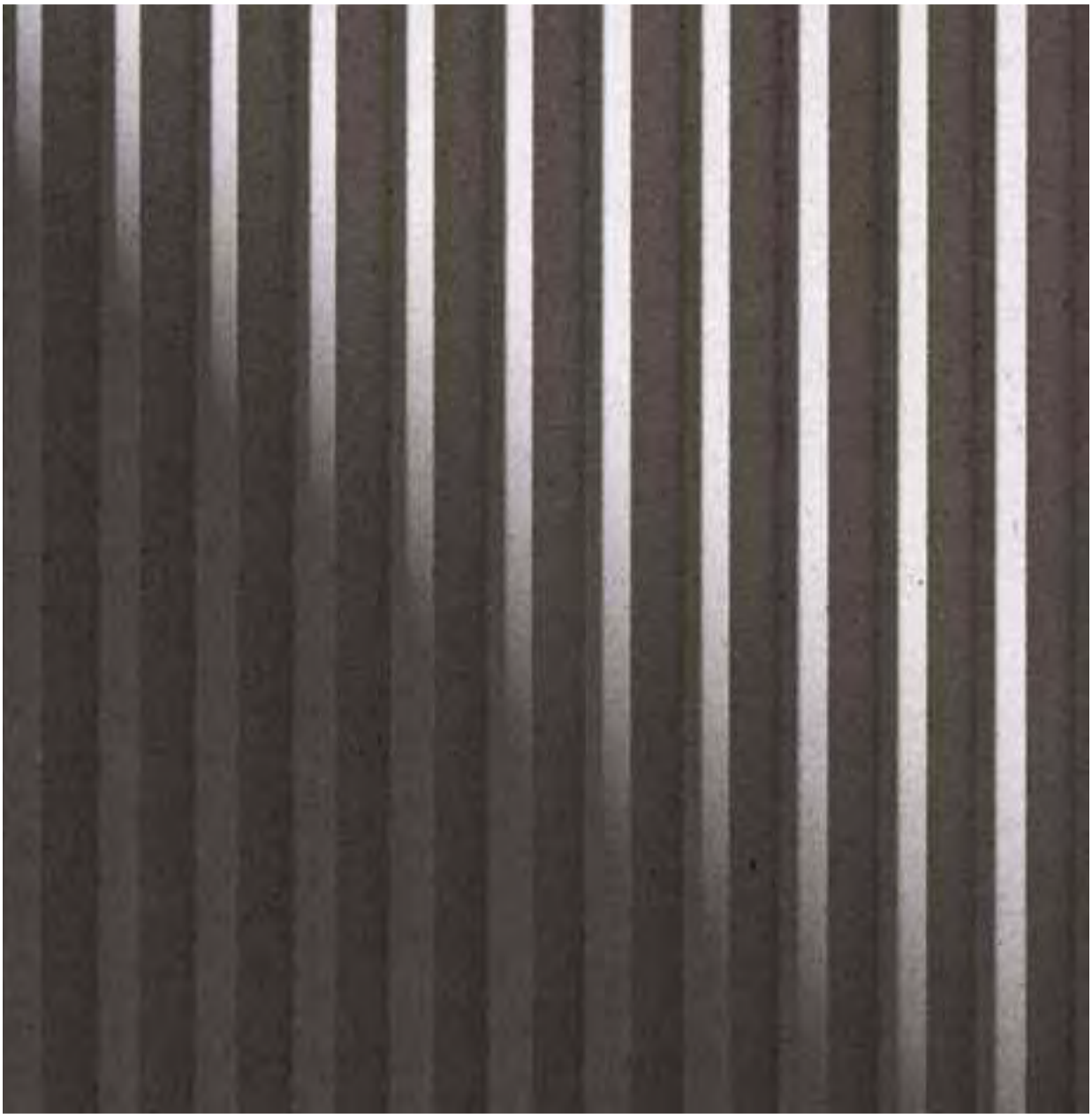
Interior plasters
StoDecolit MP

StoDecolit is the best choice for surfaces which are to sport a harmoniously textured finish rather than a uniform look. This fine interior plaster lends itself to the whole range of creative techniques, from stippled or rilled to the free-style alternative shown here. With its good formability and broad colour range, the versatile finishing plaster is able to conjure up any desired appearance to enhance the given room scenario.

Application	Colour choice	Mechanical resistance	Ecology
• indoors • wall and ceiling	●●	●●	●

●● = excellent ● = good ● = limited suitability

Architectural elements
StoDeco Art Profiles



Anyone wishing to showcase surfaces as design elements in their own right should try their hand with StoDeco Art. This range offers a great variety of profiles to provide diverse scope for stylish and individual rooms. The profiles are produced in environmentally friendly, lightweight materials and are ideal for renovation and design applications in existing and new buildings.

Application	Colour choice	Mechanical resistance	Ecology
• indoors and outdoors • wall and ceiling	● ●	●	●

● ● = excellent ● = good ● = limited suitability

Interior plasters

StoDecolit MP and StoDecolit R 3.0

The organic finishing render StoDecolit is the natural choice if you're seeking to feature both smooth and coarse surface finishes in a room without having to use dozens of different plasters. Its excellent workability enables broad design scope: As a free-style structural plaster it can be applied with a smooth or slightly rough finish, while a rilled texture lends the surface a very coarse appearance.

Application	Colour choice	Mechanical resistance	Ecology
• indoors • wall and ceiling	●●	●●	●

●● = excellent ● = good ● = limited suitability

Interior plasters
StoDecolit R 3.0

It is often the interplay of light and shade which lends surfaces their own distinctive appeal. A case in point is the interior plaster StoDecolit in rilled texture: The contrast between light and shaded areas on the attractive and very coarse plastered surface makes every surface a very special design element in its own right.

Application	Colour choice	Mechanical resistance	Ecology
• indoors • wall and ceiling	●●	●●	●

●● = excellent ● = good ● = limited suitability

Interior plasters
StoDecolit R, rolled

A particularly attractive, very coarse surface is attainable with the versatile interior plaster StoDecolit in conjunction with this special application technique. The depth effect can be further enhanced through the specific use of natural and artificial light to create light and shade on the surface.

Application	Colour choice	Mechanical resistance	Ecology
• indoors • wall and ceiling	●●	●●	●

●● = excellent ● = good ● = limited suitability

Sound-absorbing acoustic plaster

Sto Acoustic Spray Plaster

The mineral-based Acoustic Spray Plaster from Sto is applied in several layers to produce a totally different kind of surface finish with its own distinctive feel. In addition to improving room acoustics by virtue of its good sound absorption, it is also suitable for use as an anti-condensation plaster in damp areas. And it is non-combustible into the bargain.

Application	Colour choice	Mechanical resistance	Ecology
• indoors • wall and ceiling	●	●	●

●● = excellent ● = good ● = limited suitability

Design study 1
Interior plasters

This organic finishing plaster is provided with an effect sand to produce a natural-looking surface finish. The tiny stones in different colours and sizes create a multitude of contrasts in the surface, making it an interesting design element in any interior.

Design study 2
Interior plasters

This decorative organic finishing plaster is a very special eye-catcher. A fine effect mica produces a mysterious appearance which cannot be fathomed at first glance. The glimmer effect can be reinforced by different lighting scenarios using indirect, natural or artificial light.

Design study 3
Interior plasters

This organic finishing plaster appears relatively plain at first sight. The so-called "mica chips" which are blown onto the plaster while it is still moist lend it an exciting finish, however. The dark mica dispersed in the plaster provides it with a subtle pearlescent effect which makes it a firm favourite whenever sleek elegance is called for.

Design study 4
Interior plasters

A very special attractive appearance can be achieved by blowing tiny glass spheres known as “ballotinis” onto the plaster. These spheres reflect and refract the light in the most diverse variations, enabling imaginative interior designs which can be adapted at will by manipulating the incident light.

Design study 5
Interior plasters

This organic finishing plaster in ground concrete look is evocative of desolate moon rock. With its fine structure, diverse inclusions and its natural, august character it nevertheless conjures up a very special atmosphere, as well as avoiding the need for tricky and time-consuming concrete shuttering work.

Interior paints

Competence in colour

There's no accounting for taste – particularly when it comes to colours. Equally, there's no disputing the importance of choice and quality. In order to ensure a perfect sense of well-being and interior climates free of any harmful substances, all interior paints from Sto are produced according to a high standard of environmental compatibility, resulting in products which are not only attractive in appearance but also guaranteed free of any health risks.

Swift and simple: The outstanding hiding power of the high-quality single-coat interior dispersion paint StoColor Rapid means that one coat is generally sufficient to wipe out any trace of the old paint under the new coating.

The interior paints from Sto provide an easy means of conjuring up a congenial atmosphere. A broad choice of different colours and shades is available.

Clearing the air with StoClimasan Color: odours and harmful substances are degraded by means of photocatalysis, an interaction between light and special paint additives.

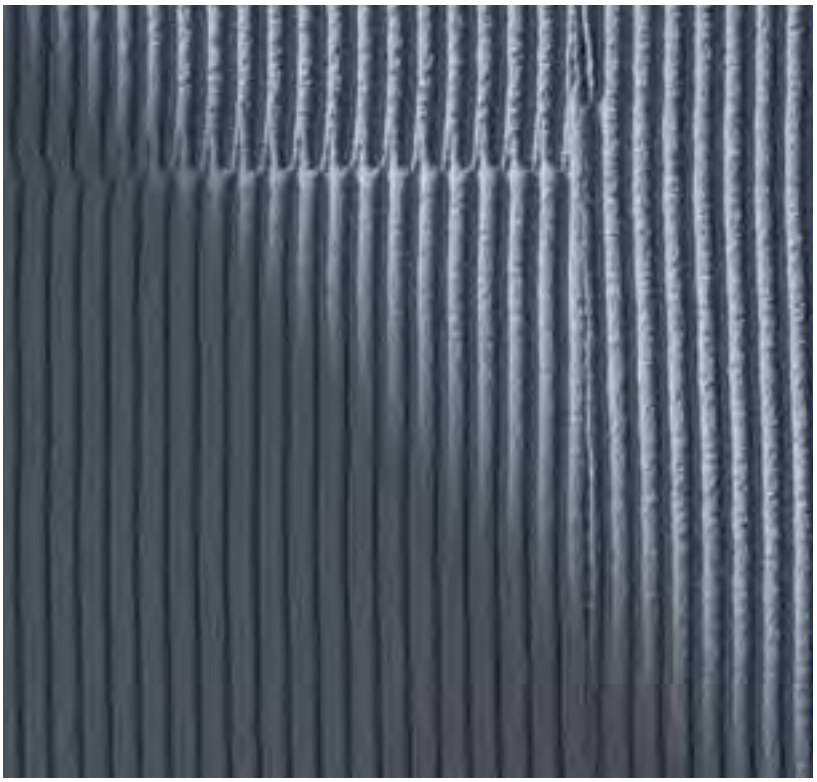
Sto interior paints come in numerous colours and shades, as well as different white and gloss levels. From matt through medium gloss to high gloss, Sto offers the right product for every taste and every room scenario. The binding agents used range from organic through silicate to lime, whereby polyurethane or silicone resin are also employed. Interior paints from Sto are plasticiser and solvent free and particularly low on emissions, enabling them to be used anywhere. Various seals of approval from organisations such as the TÜV Technical Control Board or natureplus® confirm the environmental compatibility of Sto's products. The great diversity of the product range offers solutions for various problem areas, too.

Interior plasters

Bringing creativity to the surface

Interior plasters cover a broad spectrum of application techniques and design options. Their aesthetic impression stems from the interplay of light and shade and the specific use of natural and artificial lighting. Sto is able to supply numerous products of various grain sizes to these ends.

The versatile free-style structural plaster StoDecolit quickly takes on a different character after adding StoLook Punto Z and applying by means of a special technique.



A quite different look is obtained by texturing StoDecolit MP coarsely with a trowel: The three-dimensional character makes the surface a haptic experience in its own right.

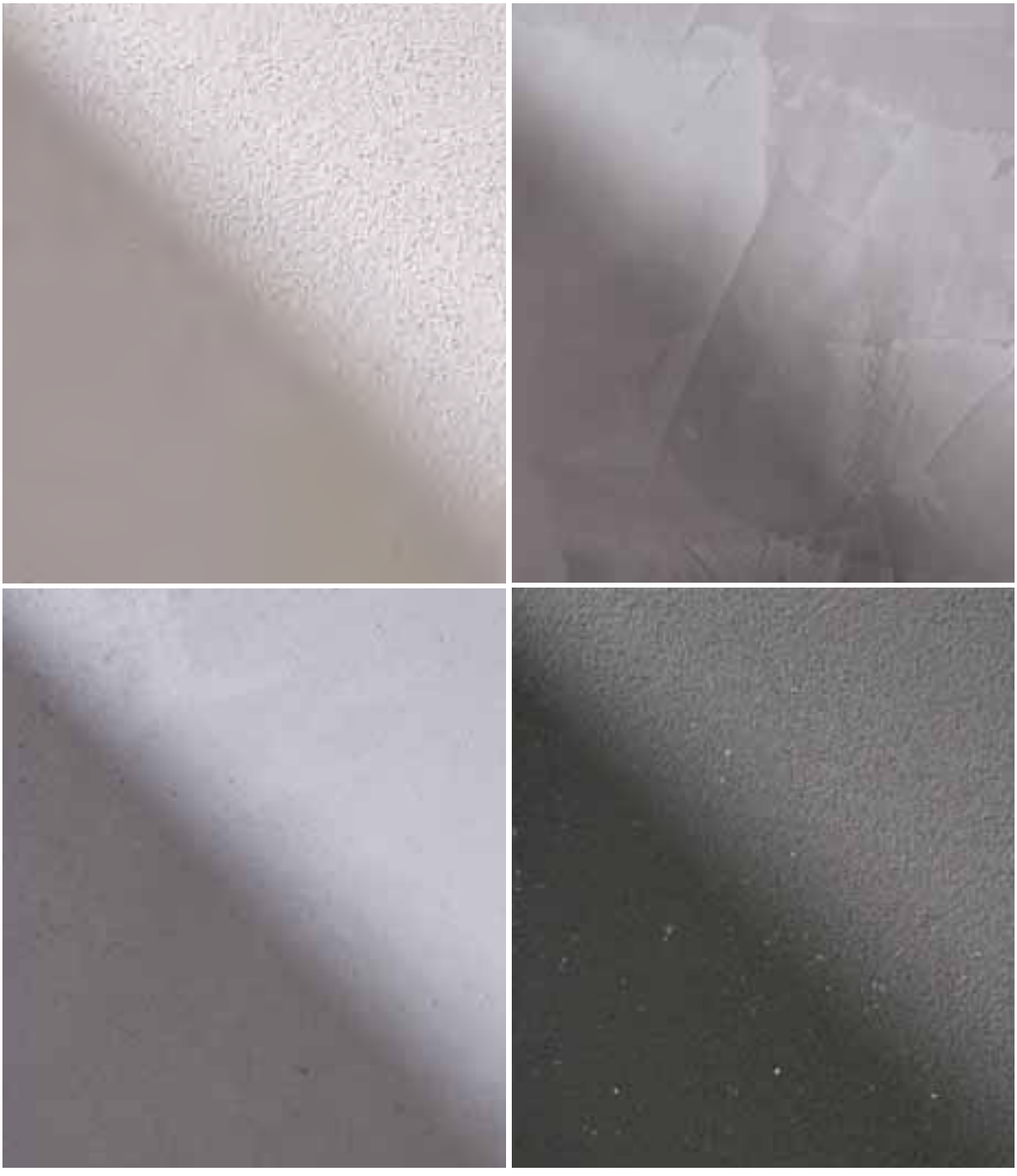
Sto interior plasters are particularly versatile, highly robust and impact-resistant. They are furthermore solvent-free, low-emission and contain no plasticisers or fogging-active substances. In a word, these are sustainable ecological products, with numerous seals of approval to their name. Interior plasters from Sto always make a perfect impression – both in terms of appearance and with regard to their special properties. This means that aesthetics are not bound by technical priorities, nor is creativity fettered by the external requirements of a construction project. From stippled through rilled to free-style structural plasters: Interior plasters from Sto are able to lend a room any desired appearance, with a broad colour range opening up additional potential for individual creativity. Together with interior paints and decorative coatings from Sto, they allow virtually boundless scope for creative design.

	Product properties			Solution	Design		
Product name	**Binder base**	**Water vapour permeability**	**Seal of approval**	**Mechanical resistance**	**Texture**	**Colour choice**	**Whiteness**
StoDecolit	organic	●	TÜV	●●	stippled / rilled / free-style structured plaster	●●	●
StoGranit	organic	●		●●	natural stone plaster (1.5 mm)	●	
StoMiral Lime	lime	●●		●	stippled / rilled / free-style structured plaster	●	●
StoDecosil	silicate	●●	TÜV, natureplus	●	stippled / rilled / free-style structured plaster	●	●●

●● = excellent ● = good ● = limited suitability

Decorative coatings
Boundless variety

From Mediterranean flair to northern clarity, from the lush use of colour to a more tempered approach based on contrasts – people design their interiors according to their own individual take on life. This, in turn, gives rise to a never-ending variety of interior design wishes. With this in mind, surface coatings from Sto cover an exceptionally broad spectrum, offering the right solution for whatever design idea you may encounter.



StoLook Marmorino Fantastico creates a stylish surface finish of ever varying texture.

Linea di calce conjures up an appealing Mediterranean feel.

The spectrum of surface finishes from Sto is exceptionally wide-ranging, offering the right solution to realise every interior design vision. In addition to this design variety, the materials employed by Sto are also low on emissions and free of solvent and plasticiser content, ensuring that they meet the highest standards of environmental compatibility. Sto also offers the right application tools for the individual finishing of wall and ceiling surfaces. StoSil Struktur provides a special solution: this texturing paint offers totally natural protection from mould, thus contributing to a healthy indoor climate.

Textured coatings

	Product properties				Design	
Product name	**Description**	**Binder**	**Application**	**Seal of approval**	**Gloss level**	**Colour variety**
StoLook Struktur	texturing paint	organic	spray/brush/ roller/trowel		matt	●●
StoLook Decor	texturing paint	organic	spray		matt	●●
StoSil Struktur	texturing paint	silicate	spray/brush/ roller/trowel		matt	●
StoSil Decor	texturing paint	silicate	spray		matt	●
StoLook Fondo	decorative plaster	lime	trowel		matt	●
StoLook Marmorino	decorative plaster	lime	trowel		silk gloss	●
StoLook Veneziano	decorative plaster	lime	trowel		matt	●
StoLook Effetto	decorative plaster	lime	trowel		matt	●
StoLook Piccolo	multicolour chips coating	organic	spray/roller		matt	●

Effect coatings

	Product properties				Design	
Product name	**Description**	**Binder**	**Application**	**Seal of approval**	**Gloss level**	**Colour variety**
StoSil Patina	stain	silicate	brush/roller		matt	●
StoColor Metallic	paint with metallic effect	organic	spray/brush/roller		metallic	●
StoLook Diamant	transparent coating with diamond effect	organic	spray/brush/roller		silk gloss	
StoLook Lasura	stain	organic	brush/roller		silk gloss	●●
StoLook Wax / StoLook Wax forte	protective wax		sealant		silk gloss	

●● = excellent ● = good ● = limited suitability

Wall and ceiling coverings

A breath of fresh air in any room

Wallpaper is no longer the last word in wall design, and ceilings are also an integral part of interior design today. Wall and ceiling coverings based on Sto textured wall coverings and fleeces are the ideal solution here. Their excellent material properties ensure the necessary durability and versatility.

Top coats such as StoColor Metallic can be applied to achieve interesting effects on StoTap Pro 100 P glass fibre cloth.

The attractive texturing and varied colour designs of wall and ceiling coverings are predestined to liven up any room.

Tear resistance and robustness are the hallmarks of Sto wall and ceiling coverings. A particularly tear-resistant wood-chip wallpaper is the three-layered StoEuro Trend, for example. Depending on the applied top coat, this wallpaper can also be used for building projects with particularly high requirements on the materials used. With the appropriate coating, decontaminable and disinfectable surfaces can be produced for hospitals. Equally, surfaces tailored to nursery school use or many other applications are also possible. The StoTex Classic textured wall covering, for example, is also available with Aqua-Quick technology. With this variant, the required quantity of adhesive is factory-applied to the mesh and simply requires to be activated by adding water. Exclusive textures in a broad range of different designs open up broad scope for individual design solutions. Textured wall coverings from Sto can also be overcoated repeatedly and bear the 'Ökotex' seal of approval for skin compatibility.

	Product properties					
Product name	**Seal of approval**	**Pigmented variant available**	**Wall bonding**	**Crack bridging**	**Mechanical resistance**	**Individual motifs**
StoTex Avantgarde			●	●	●	
StoTex Classic		●	●	●	●	
StoTex Signet			●	●	●	●●
StoTap Pro		●	●	●	●	
StoEuro Trend						

●● = excellent ● = good ● = limited suitability

Acoustics
Attractive and intelligent

Noises and sounds accompany us everywhere we go, and may have a positive or negative impact on our wellbeing, depending on their nature and intensity. Such aspects are particularly critical for indoor environments which is why acoustic systems from Sto are the right choice here.

Acoustic systems are crucial to good room acoustics, particularly in high, wide rooms. Pavilion for the State Garden Show in Weil am Rhein, D (Zaha Hadid Architects, GB: StoSilent Panel)

Poor or inadequate room acoustics may upset the human organism in the long term, and may even make people ill. Acoustic systems are thus particularly important, as they can be used to optimise a room's acoustic properties and eliminate unpleasant noise. Sto offers diverse solutions which exert a positive effect on a room's acoustics via the absorption and reflection of sound waves while also according due consideration to creative design aspects. From panel systems through ceiling canopies to plasters and coverings, the range includes the right product for every need. The flexibility and diversity of these systems also enable retrofitting to improve the acoustic properties of a room or hall. The seamless ceiling system StoSilent Top, for example, matches the highest acoustic standards with correspondingly high aesthetic merits (see info box).

Virtually smooth and seamless surfaces of up to 200 m² are no problem with the StoSilent Top acoustic system.

Info

The perfectly coordinated system components of **StoSilent Top** guarantee the very best audibility and optimised reverberation times. The technical features are fully concealed. StoSilent Top presents a stylish and aesthetic face and enables a fine and seamless surface finish. A choice of around 460 colours, various finishes and fine textures cover virtually every conceivable design wish. The low system weight also means that StoSilent Top is swift and simple to install.

Internal insulation
Keeping the cold outside

Insulation of a building's envelope is of enormous importance in the context of energy conservation. In addition to facade insulation systems, Sto also helps to save energy by means of solutions for insulating ceilings and for the interior insulation of damp rooms.

Apart from ensuring warm feet on the ground floor, ceiling insulation for the cellar also cuts energy costs by up to 10 per cent.

Alongside insulation of the exterior facade, insulation of the ceilings in the cellar and on the top floor is one of the most important measures for efficient energy saving. The StoTherm ID ceiling insulation system is ideal for underground car parks, for example, as in addition to its high energy-saving potential for the building above this system is also highly effective in sound insulation. StoTherm In is the ideal solution for damp spaces, an integrated moisture barrier preventing moisture from penetrating into the masonry from the inside and causing damage. StoTherm KD with mineral wool is non-combustible, making it ideal for public buildings. The variant with polystyrene, on the other hand, is the most suitable system for private buildings. Sto's large range of different products offers the ideal solution for virtually every building scenario.

Sto offers the right insulation systems for areas of high humidity such as swimming baths. Rocco Forte Gruppe Deluxe Hotel in Frankfurt/Main (Architekturbüro GHP, D)

Info

The German government supports energy efficiency measures. Measures to modernise the home in line with the latest insulation standards are rewarded with money from the government, reduced heating costs and an increase in the value of the property concerned.

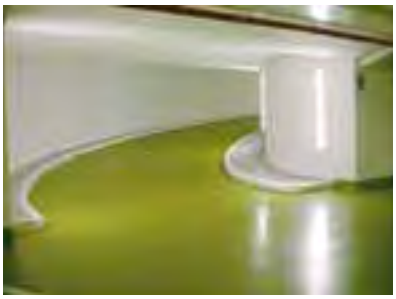
Floor coating

Safe and comfortable underfoot

Apart from looking good, floor coverings may also need to withstand high levels of mechanical, chemical or thermal stress, depending on their area of use. Sto floor coatings take these considerations into account, protecting the floor while at the same time lending it eye-catching qualities.

**Floor coatings from the Sto range are available in many different colours, enabling areas or features to be highlighted as necessary.
Ecole Internationale in Geneva, CH
(CCHE Architecture, CH)**

**In multi-storey car parks in particular, the floor needs to be particularly hard-wearing while also meeting the required aesthetic standards.
Rheinufergarage in Mainz, D**



In industrial applications, the range of requirements to be met by a floor covering is further complicated by mandatory legal standards in the areas of water conservation, slip resistance or electrostatic discharging capability, for example. These requirements are met by the epoxy resin coating StoPox BB OS, for example, which offers excellent chemical resistance and is free of any silicone content. The StoPur BB 100 system with StoPur WV is ideal for buildings which are (heavily) frequented by the public and in which the flooring also has prestige value, such as in retail premises, showrooms or assembly halls. It forms a smooth, seamless surface, is durable and pleasant to walk on. It is also low on emissions and easy to clean, making it ideal for hospitals and nurseries.

Info

Ecology and health aspects and technical requirements are by no means mutually exclusive considerations. The **water-based epoxy resin and polyurethane resin floor coatings** are solvent-free, plasticiser-free and low on emissions, for example. They are also subject to regular stringent checks by the independent TÜV-Süd technical control board.

Lacquers and stains
For a class finish

Lacquers and stains provide surfaces with a particularly smooth and brilliant finish. Sto offers a wealth of different stains, finishing lacquers and clear lacquers that add that special something to every surface.

In addition to its interior design merits, AquaPremiumlac Satin is so environmentally friendly that it can even be used for children's toys.

For wood, metal, windows, doors or radiators, quality lacquers from Sto cover every need. They are durable, colour-fast and particularly environment-friendly thanks to their low emissions. They possess first-class hiding power, excellent application properties and provide treated materials with lasting protection. Lacquers and stains from Sto are also durable and economical in use. The vast colour range includes the right colour for every setting. The Sto range also covers the entire spectrum of products for priming and substrate preparation, from Sto-Allgrund AF to the latest water-based lacquers and stains.

The lacquers and stains from Sto possess first-class hiding power, offer excellent application properties and provide the materials to which they are applied with lasting protection.

Info

In high gloss or silk matt, white enamelled surfaces are elegant and timeless – but also critical in terms of application and durability. The **white enamels from Sto** are designed to meet these requirements. A special tinting process ensures the ultimate in colour permanence for **coloured lacquers from Sto**. **Sto's range of lacquers and enamels** combines first-class hiding power with excellent application properties and reliable long-term protection.

Products and systems

Textures and surface finishes from smooth to very coarse · Design studies · Interior paints
Interior plasters · Decorative coatings · Wall and ceiling coverings · Acoustics
Internal insulation · Floor coatings · Lacquers and stains

Sto references

Examples of architecture employing Sto products and systems

Details

Detail solutions

StoColor System

Colour variety, according to the StoColor System and other colour systems
The 3-level principle behind the StoColor System: The human colour perception area,
the colour wheel with 24 basic tones, the five colour rows

Bills of quantities

Support in project planning · Useful internet links

Background information on interiors

Colour · Textures and surface finishes · Light · Indoor climate · A healthy home environment · Protecting building substance
Room acoustics · Seals of approval · Rules and standards · Glossary

Further information

Specific information and brochures from Sto

SIDE Hotel in Hamburg, D

Jan Störmer Architekten

Two interlocking structures create an introverted centre for the SIDE Hotel, in the form of a narrow atrium which functions as the thirty metre high foyer. Here, as throughout the building, Jan Störmer Architekten have combined materials and surface finishes to special effect, creating interesting contrasts in the process.

SIDE Hotel in Hamburg, D

The glass double facade also serves as a noise buffer and climatic buffer zone.

The pool, beauty and fitness areas on the hotel's 3rd basement storey present a highly colourful picture.

The exclusive location of the SIDE Hotel, in the direct vicinity of the Hamburg State Opera House, the city centre and Dammtor railway station, confronted the architects with a special challenge. They needed to reconcile the lack of space which is typical of such a location with the building owner's specifications, which stipulated a hotel with 180 rooms in order to ensure the project's economic viability – calling for the space available at the small corner plot to be exploited to the full. The hotel consists of two interlocking structures. The front structure lines the edge of the road and closes off the block in which it is located in the form of an eight-storey corner section featuring a strict grid-like design consisting of glass and metal. The second structure, which is faced in green natural stone, rises four storeys above the main building, which it encloses with two prominent projecting suite storeys, apparently without establishing contact. The two structures dock together to produce a narrow atrium at the core of the complex in which the designer hotel makes its mark not least of all by virtue of a striking light concept: surrounded by matt glass panels and light lacquered surfaces, the foyer greets the hotel guest with a light choreography developed especially for this interior by stage set designer Robert Wilson, consisting of white and blue streaks of light on the inclined glass surfaces. Other highlights in the building include the coloured illuminated sunshading elements on the facade and a somewhat bizarre installation on the roof terrace, where a waving "cornfield" of optical fibres glows. The interior concept was evolved by Milan-based interior designer Matteo Thun, who designed a range of upholstered furniture especially for the hotel. Wood, satin-finish glass and light carpeting shape the atmosphere in the hotel rooms. A defining design feature throughout all areas is the use of surface finishes with contrasting haptic effects, from rough natural stone to glass, or from open-pored dark wood to high-gloss white enamel. Bold dashes of colour add contrasting highlights to the predominantly warm, light colour schemes in the rooms.

Owner:
Seaside Hotels, Hamburg, D
Architects:
Jan Störmer Architekten, Hamburg, D
Interior design:
Matteo Thun, Milano, I
Location:
Drehbahn 49, 20354 Hamburg, D
Sto products:
Acoustic plasters, interior paints, creative interior finishes, glass fibre mesh
Applicator:
Gebotherm GmbH, Hildesheim, D
Photographs: Sto AG

Ground floor plan

Q! designer hotel, Berlin, D

GRAFT Berlin

Its rather closed-off EWIS facade lends the Berlin designer hotel Q! a somewhat reserved air from the outside. Architecture office GRAFT has opted for this exterior look deliberately as a contrast to the original and fascinating design which awaits the visitor inside the hotel. Floors, walls, ceilings and even the furniture appear to blend into one, creating a unique interior environment.

Design hotel Q!, Berlin, D

After a strenuous day in Berlin – just a few steps from bath to bed.

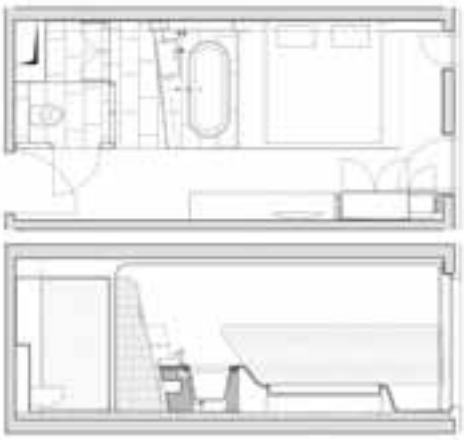
Fine heated sand and comfortable loungers in the wellness area conjure up an authentic seaside setting.

Closed curtains on the ground floor prevent passers-by from looking into the Q! hotel and do not provide for a particularly welcoming first impression. Once inside, however, the guest discovers an impressive interior. The open lobby with the reception desk provides an indication of the individual design which features throughout the rest of the building. The entrance area, bar and lounge all follow the same concept whereby the walls and floor merge seamlessly into one another. Undulating benches and platforms take the place of the usual hard edges. The actual furniture – asymmetric leather sofas – also fits in with the undulating lines. A fireplace and the velvet red colour scheme add to the cosy and inviting atmosphere. A bar separates the front area from the club room to the rear, whereby the latter is not reserved solely for hotel guests. A large glass facade faces onto a small inner courtyard. The lounge and club room can be separated by a curtain for special functions.

The rooms, in the three categories "Standard", "Studio" and "Penthouse", feature the same design style, though in lighter colour schemes. Here again, the furniture is integrated into the undulating flooring. The walls open up as walk-in cabinets and wardrobes. Pictures by photographer Christian Thomas feature gentle, feminine motifs which enhance the stylish look of the rooms. As if all this were not enough to ensure that guests truly unwind, they can also luxuriate in the wellness area located in the basement. Lighting effects, essential fragrances and muted sounds provide for the ultimate in relaxation here.

Owner:
Wanzel & Co. Bauträgergesellschaft KG, Leipheim, D
Architect:
GRAFT GmbH, Berlin, D
Location:
Knesebeckstraße 67, Berlin, D
Sto products:
External wall insulation system (StoTherm Mineral), interior paints
Applicator:
Phönix Putz GmbH, Berlin, D

Photographs: Sto AG



Ground plan and sectional view of a hotel room

Pusteblume-Zentrum, Cologne, D

Franken + Kreft Architekten GbR

The "Pusteblume" centre for movement, relaxation, dance and theatre in Cologne has opened a second branch. Spread over two storeys and covering 150 square metres of floor space, it exudes a unique atmosphere which distinguishes it from every other "lifestyle gym" – as indicated by the boldly colourful surface coatings from Sto which set the interior apart as soon as one enters the building.

Pusteblume-Zentrum, Cologne, D

The pink coloured ceiling which features throughout the centre varies in shade from violet to red, according to the prevailing light situation.

In the dance studio the colour scheme has been toned down in favour of gentle colours such as beige and light blue, combined with wood surfaces and plenty of daylight.

The distinctive design of the rooms was determined by the "Pusteblume" centre's highly diverse offering of courses, which is aimed at the young, the old and the handicapped alike, ranging from yoga through children's dancing and senior citizens' gymnastics to theatre workshops. The colour concept, which played a major role from the very beginning of the design process, is as rich in contrast as the centre's curriculum, with rich and brilliant colours much in evidence right from the entrance area. The colours have not been chosen randomly, however. Rather, the colours used serve to help users find their way around the building, while at the same time lending the individual rooms their own distinctive atmospheres. Leitmotifs are the seamless epoxy resin flooring in brilliant blue which is to be found throughout the building and the ceiling, which has been painted in a clear pink by way of contrast. The toilets sport an eye-catching fresh apple green finish. The dance room on the ground floor is more restrained in colour – sand colours, muted light blue, wood surfaces and plenty of daylight create an atmosphere of calm here, providing a suitable setting for both children's dancing and relaxing yoga courses. Larger-than-life blurred photographs of dandelions in light beige extend over the entire length of the wall in this room, further underscoring the sense of calm and concentration. Japanese paper lamps, which are intended to mirror the shape of gymnastics balls, are suspended at three different heights and can be adjusted to three brightness levels. Photographs such as the large-format picture of a beaming child's face directly opposite the entrance complement the colour concept and represent the centre's "grass-roots" and "down-to-earth" side. This unusual design concept appears to be well received, with general agreement among the centre's users that the rooms are "fun to be in!"

Owner:
Pusteblume e.V., Cologne, D and GWG Ehrenfeld, Cologne, D
Architect:
Franken + Kreft Architekten GbR, Bergisch Gladbach, D
Interior designer:
100 % Interior, Sylvia Leydecker, Cologne, D
Location:
Ansgarplatz, Cologne, D
Sto products:
Wall and floor coatings
Applicator:
Bernd Wiesjahn GmbH, Leverkusen, D

Photographs: Karin Hessmann, Dortmund, D

Longitudinal section and ground plans of the ground floor and basement

Ara Pacis Museum, Rome, I

Richard Meier & Partners Architects

As a young student, Richard Meier travelled through Italy, staying in the Eternal City of Rome for two months. 36 years later the now world-renowned architect and Pritzker Prize winner returned to the city, bringing with him his design for the hall to protect the Altar of Augustan Peace, or "Ara Pacis Augustae", featuring his signature white surfaces and clear language of form.

Ara Pacis Museum, Rome, I

While the travertine wall dominates the facade facing the Tiber, the facade looking onto the square is comprised of numerous smaller offset elements.

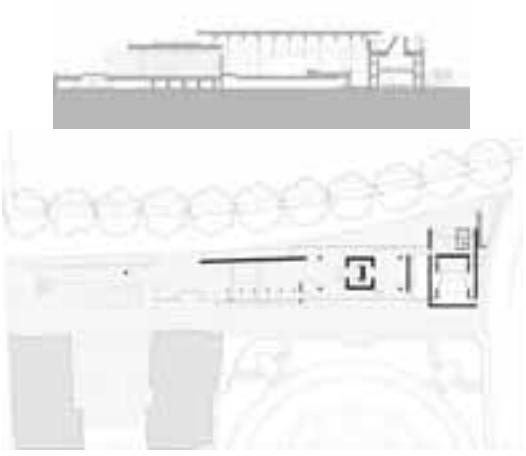
A wall of large-format, coarse stones guides visitors into the entrance area, contrasting with the smooth white surfaces.

The new roof for what is arguably the most symbolic of all monuments in Rome, the Ara Pacis Augustae, was no doubt a very special challenge to relish for architect Richard Meier. He received the commission for the project in 1995, Rome's mayor of the time, Francesco Rutelli, having decided that a new pavilion should be built. External influences such as car exhaust fumes, vibrations and sunlight had taken a severe toll on the monument. Against this background, the new covering was required to reconcile all the given aesthetic, functional and technical considerations.

The complex is comprised of three building segments along the north-south axis – the entrance gallery, approached via a raised forecourt displaying an obelisk, the actual exhibition pavilion at the centre of the complex and the conference area spread over three levels at the rear, with a restaurant and roof terrace. The division of the complex into three parts is a response to the urban development situation. On the one hand, Augustus Square was to have a clear-edged profile facing the banks of the Tiber, while at the same time the monument was to be visible from outside. A 50 metre long glazed surface opens the exhibition hall up onto Augustus Square and the riverside road. This transparency contrasts with the closed character of the entrance section, which Meier decks out in Roman travertine and his characteristic white-plastered wall and ceiling coverings. The backbone of the interior takes the form of a room-high wall faced with roughly hewn travertine which leads seamlessly from the forecourt into the building. Where the wall ends, the room is bathed in daylight which floods in through the 13 metre high glass facade and the skylights. In the middle of the hall, bathed in brilliant white light, stands the Ara Pacis, the monument which was granted a new lease of life free of exposure to the surrounding pollution in 1995.

Owner:
Comune di Roma, I
Architect:
Richard Meier & Partners Architects, New York, USA
Location:
Lungotevere in Augusta, Rome, I
Sto products:
Interior: Interior paints, effect coatings
Facade: StoVentec/StoVerotec facade, facade paint with Lotus Effect (Lotusan)
Applicator:
Bazzea Srl, Vigevano, I

Photographs: Sto AG



Section and ground plan of entrance storey

Lamborghini Showroom, London, GB

Gooch Webster, Mark Wilkinson

Lamborghini – the company which began as a manufacturer of tractors in 1948 – is now one of the most renowned makes of sports cars in the world. To tie in with the launch of the "Gallardo" model line in 2003, the London showroom underwent a facelift in accordance with the corporate colour design. And thanks to the Sto acoustic ceiling system it is no problem when one of the engines boasting over 500 hp of performance is kicked into life.

Lamborghini Showroom, London, GB

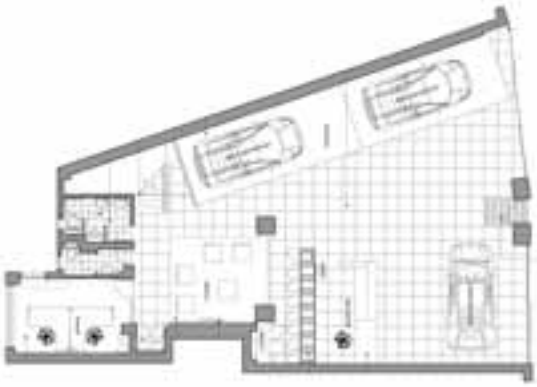
The golden Lamborghini logo and the extensive use of only a small selection of colours provide for a stylish setting.

The muted interior design brings out the streamlined vehicles to even better advantage.

Around 5000 cc, 500 hp, 510 Nm of torque at 4500 rpm, 0 to 100 km/h in just under 4 seconds – vital statistics predestined to set the heart of any motor sport enthusiast racing. The car in question is the Lamborghini Gallardo, which combines top performance with beautiful design. To tie in with the car's launch in 2003, the exclusive showroom in London's South Kensington district underwent a thorough facelift. In keeping with the car manufacturer's corporate design, the single-storey, ground-level showroom in Brompton Road is now decked out in stylish black and anthracite. Dark, sand-blasted steel platforms, gloss black ceramic tiles, white walls and the seamless acoustic ceiling provide the restrained backdrop to subtly place the cars in the limelight. The golden Lamborghini logo on the walls is the sole embellishing accessory. A continuous showroom window beginning at ground level establishes the necessary link with the street outside. The display and sales areas are thus clearly visible to passers-by in the front area of the showroom. The reception desk and a lounge which is screened off by displays and columns are situated in the middle of the room. The daylit offices and ancillary rooms at the rear and in the basement are the preserve of the showroom's staff.

Owner:
Lamborghini London, GB
Architect:
Gooch Webster, Mark Wilkinson, London, GB
Location:
27 Old Brompton Road, London, GB
Sto products:
Acoustic ceiling system (StoSilent), interior paints, interior plasters
Applicator:
Aztec Solutions Ltd, London, GB
Regency Plastering Ltd., Dartford, GB

Photographs: Sto AG



Ground plan of showroom

Norddeutscher Rundfunk, Hamburg, D

Schweger Associated Architects

ASP Schweger Assoziierte won the competition to build the new NDR radio broadcasting studios in Hamburg-Rotherbaum back in 2001. The architects' design respects the location and its historical context while also interpreting the site as the new NDR headquarters. The light and airy atmosphere inside the connecting structure between the two long sections is enhanced by StoVerotec wall panelling.

Norddeutscher Rundfunk, Hamburg, D

Niche-like recesses and the reflective glazed facades ensure that the building does not become too overbearing.

A side entrance separates the two parts of the building. The facade of the studios is more closed-off than that of the offices, in order to keep out light and noise.

The concept for the new NDR radio broadcasting studios was based on two essential objectives. The new building was to be integrated into the given urban landscape and the forms of usage in the previous headquarters were to be reorganised. The NDR broadcasting company has been based in the exclusive residential area of Rothenbaumchaussee in Hamburg-Rotherbaum since 1928. The studios and offices were previously spread over several villas. They were now to be pooled together and reorganised in a single new building.

The new complex consists of two parallel, slightly offset long structures which are connected by an intermediate building. This intermediate area incorporates a three-storey foyer which serves both as a reception area and an internal meeting place for the editorial staff. The brilliant surfaces of the StoVerotec Glas wall panelling project the incident light well into the building, providing for a pleasantly light and airy interior, despite the building's "wedged-in" position between the two long structures. The foyer provides access to the various broadcasting, production and office areas, which are clearly separated into different areas. One part of each of the long structures contains the broadcasting and production areas over three storeys, while the other part houses the corresponding offices over four storeys. Stairs and transparent lifts connect the different levels across their slight height differences. The different usages of the respective parts of the buildings are apparent on the outside: the facades of the office areas are structured by horizontal facade sections extending over the storeys and upright window formats – citing the facades of the existing villas. Recesses in the office facades lend the smooth surface a fine plasticity. In contrast, the facades of the studios are more closed for acoustic reasons and lined with a second layer of transparent, horizontal glass slats installed in front of the actual facade.

Owner:
Norddeutscher Rundfunk, Hamburg, D
Architect:
Schweger Assoziierte Architekten, Hamburg, D
Location:
Rothenbaumchaussee 132, Hamburg, D
Sto products:
StoVerotec Glas
Applicator:
Thoms Metallbau GmbH, Rostock, D

Photographs: Sto AG

Ground floor plan

ROC van Twente vocational college, Almelo, NL

Royal Haskoning Architects

The vocational college in the Enschede region is situated close to the German-Dutch border. The design by Syb van Breda, Dennis Hauer and interior designer Jorge Moura von Royal Haskoning Architects is tailored specifically to the needs of a modern vocational training and education centre.

ROC van Twente vocational college, Almelo, NL

Stacks of originality: the various structures making up the building appear to stacked haphazardly one on top of the other, breaking up the complex's otherwise clearly defined ground plan.

Diagonal elements are predominant in the ground plan, the bearing structure and in many details – as exemplified by the cafeteria with its V-supports.

The ROC van Twente vocational college in the small Dutch town of Almelo lies between the town centre and the railway station, surrounded by parks and a residential area in the middle of the Kerkelanden district. The complex is based on a triangular ground plan corresponding to the street grid. Its vertical design contrasts the clearly defined ground plan with an arrangement of structures which have been daringly stacked one on top of the other. The centre of in total the seven storey high college building takes the form of an atrium which is protected from the elements by a transparent roof consisting of air-filled plastic sheeting "clushions". The architects describe the inner courtyard as the building's "public heart". This is a meeting place not only for students, teachers and staff of the education centre before they go off to their offices and classrooms, but also for the local residents who avail themselves of the services offered by the trainees. The polyurethane floor covering is a special eye-catcher in the atrium: artist Georg Korsmit has designed a colourful, seamless honeycomb structure whose predominantly warm colours suit the overall interior design. In addition to stairs and lifts, the different floors are also interconnected by small gangways which criss-cross the atrium. Within the storeys, the room structure remains flexible, with relocatable partitions available to adapt the rooms to future developments and educational needs. The complex is based on a steel construction with ceilings consisting of hollow concrete slabs, making extreme projections possible for individual structures. Its clinker facade is lined with alternately projecting and set-back vertically arranged bricks, producing a relief effect. Long window strips and wide glass fronts provide the facade with a horizontal structure.

Owner:
BAM Utiliteitsbouw BV, Zwolle, NL
Architect:
Royal Haskoning Architects, Amsterdam, NL
Location:
Wierdensestraat/Parallelweg, Almelo, NL
Sto products:
Seamless floor coating (polyurethane) in 136 colours according to a design by Georg Korsmit, Amsterdam, NL
Applicator:
BE Vloer en Visie BV, Oldenzaal, NL

Photographs: Werner Ero, HLP Images, Zeist, NL

Ground floor plan

Fran Krsto Frankopan primary school, Krk, HR

Randić – Turato

Covering over 400 square kilometres, Krk is the largest island in Croatia and the Adriatic. The capital of the same name is situated on the west side of the island and possesses a mediaeval core with town wall. The latter also played a key role in the design of the new primary school by Randić – Turato architects from Rijeka, whose boldly coloured interior offers a deliberate contrast to the prevailing colour scheme in the town's old quarter.

Fran Krsto Frankopan primary school, Krk, HR

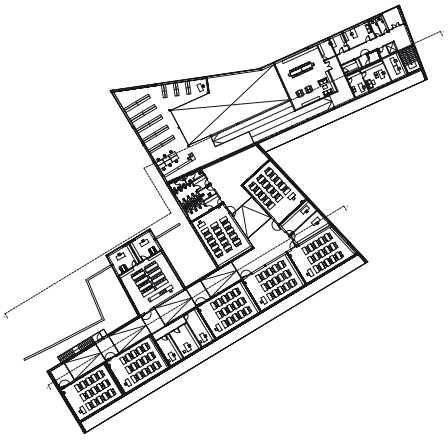
Sloping corridors connect different levels resulting from the site's topology.

The colouring of Fran Krsto Frankopan primary school fits in with the urban setting.

The construction of the new primary school in Krk was preceded by an architectural competition which initially focused not on a specific design for a building, but on selection of the ideal location. Randić – Turato architects eventually won through with a design which placed the new school in the middle of the old town centre. In terms of the urban landscape, the town's skyline was to receive special consideration, and key points such as churches and the town wall were to continue to dominate the overall picture. In order to integrate the large school into the small town centre, the architects largely did away with any boundaries between the public area and the school grounds.
Areas in the town are now used by the pupils during their breaks, while the school grounds remain accessible to the public. The two-storey structure with a Z-shaped ground plan follows the topography of the site on which it stands, observing a respectful distance from the town wall, which was restored in the course of the construction project. Situated on the ground floor and with a glass strip facing onto the town, the two-storey entrance area with school hall and canteen connects the building's two wings. The north wing accommodates the school kitchen, the sanitary facilities and a staircase. The south wing, facing directly onto the town wall, houses the classrooms. Additional classrooms for older pupils are located on the upper floor, on which the staff room and offices are also situated. All areas are accessed via slopes which take due account of the site's irregular topography. Bold colours on walls, floors and ceilings enliven the interior, in particular the access areas. In contrast, the exterior facade blends into the mediaeval surrounding area with its fair-faced concrete elements and bright, sand-yellow plastered surfaces.

Owner:
Krk municipal authorities, Krk, HR
Architect:
Randić – Turato, Rijeka, HR
Location:
Stjedana Radica 11, Krk, HR
Sto products:
Interior and exterior plasters
Applicator:
Sipak company, Zagreb, HR

Photographs: Randić – Turato, Rijeka, HR



Ground plan of Fran Krsto Frankopan primary school

BDA offices with ”flexiroom”, Stuttgart, D

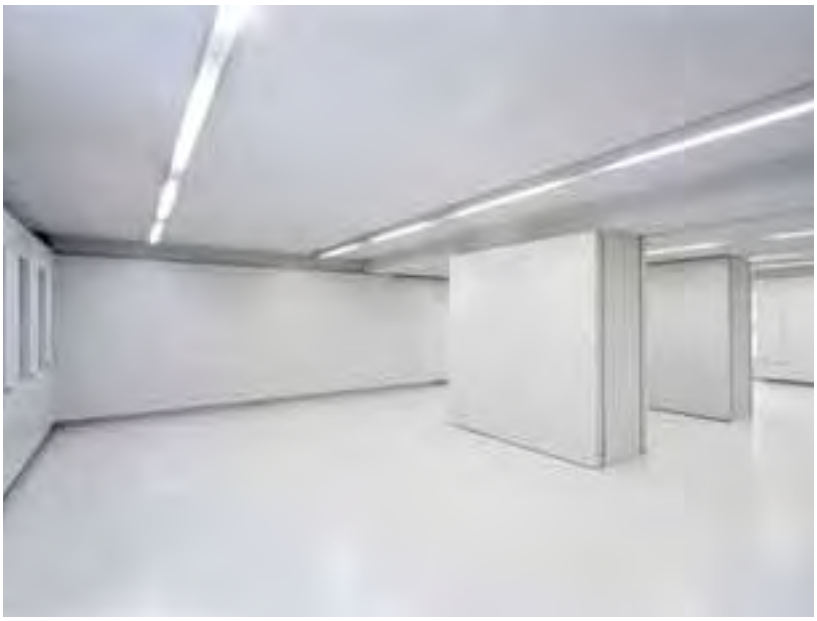
Bottega + Ehrhardt Architekten

In 2005 the regional offices for Baden-Württemberg of the Association of German Architects (BDA) took up residence in Stuttgart's "Zeppelin Square" complex, which underwent a complete facelift at the end of the 1990s. The premises include the so-called "flexiroom" – a platform for small-scale architectural exhibitions. The flexiroom's discreet grey surfaces provide an ideal backdrop against which exhibits can be set off to best advantage.

BDA offices with "flexiroom", Stuttgart, D

The wall elements can be opened up and slid around to produce rooms of varying sizes.

The versatility of this minimalist exhibition platform is not immediately apparent.



The new BDA offices in the centre of Stuttgart are decked out entirely in white and grey. Visitors access the former archive room, which is open to anyone with an interest in architecture, via one of the inner courtyards of "Zeppelin Square". The roughly 250 square metres of floor space are divided into two areas: The office area is accommodated in a side tract, while the large room directly behind the entrance serves as the exhibition venue. The room is divided up by two large wall panels in the middle. Flexible rotary and sliding elements which are anchored to the wall panels enable different room layouts and provide additional space on which to hang exhibits. A surrounding wallpapered backdrop in pure white, separated from the ceiling and floor by wide shadow joints, adds the sole colour contrast to the otherwise light grey room. Handleless wallpapered flaps in front of the window and door openings can be opened or closed as necessary. Additional openings in the side walls are closed by means of sliding shutters. These conceal a small library and a window looking onto the office area, which is the preserve of the office staff. This area is partitioned off from the exhibition area by a room-high cabinet. A defining element is the light grey, low-lustre epoxy resin flooring in a seamless finish. This flooring serves as a leitmotif throughout the entire "flexiroom", underscoring the room's homogeneity in conjunction with the light grey velour carpet fitted to the ceiling for acoustic reasons.

Owner:
BDA Bund Deutscher Architekten, Landesverband Baden-Württemberg, Stuttgart, D
Architect:
Bottega + Ehrhardt Architekten, Stuttgart, D
Location:
Friedrichstraße 5, 70174 Stuttgart, D
Sto products:
Epoxy resin floor coating
Applicator:
Fußboden Haag GmbH, Stuttgart, D

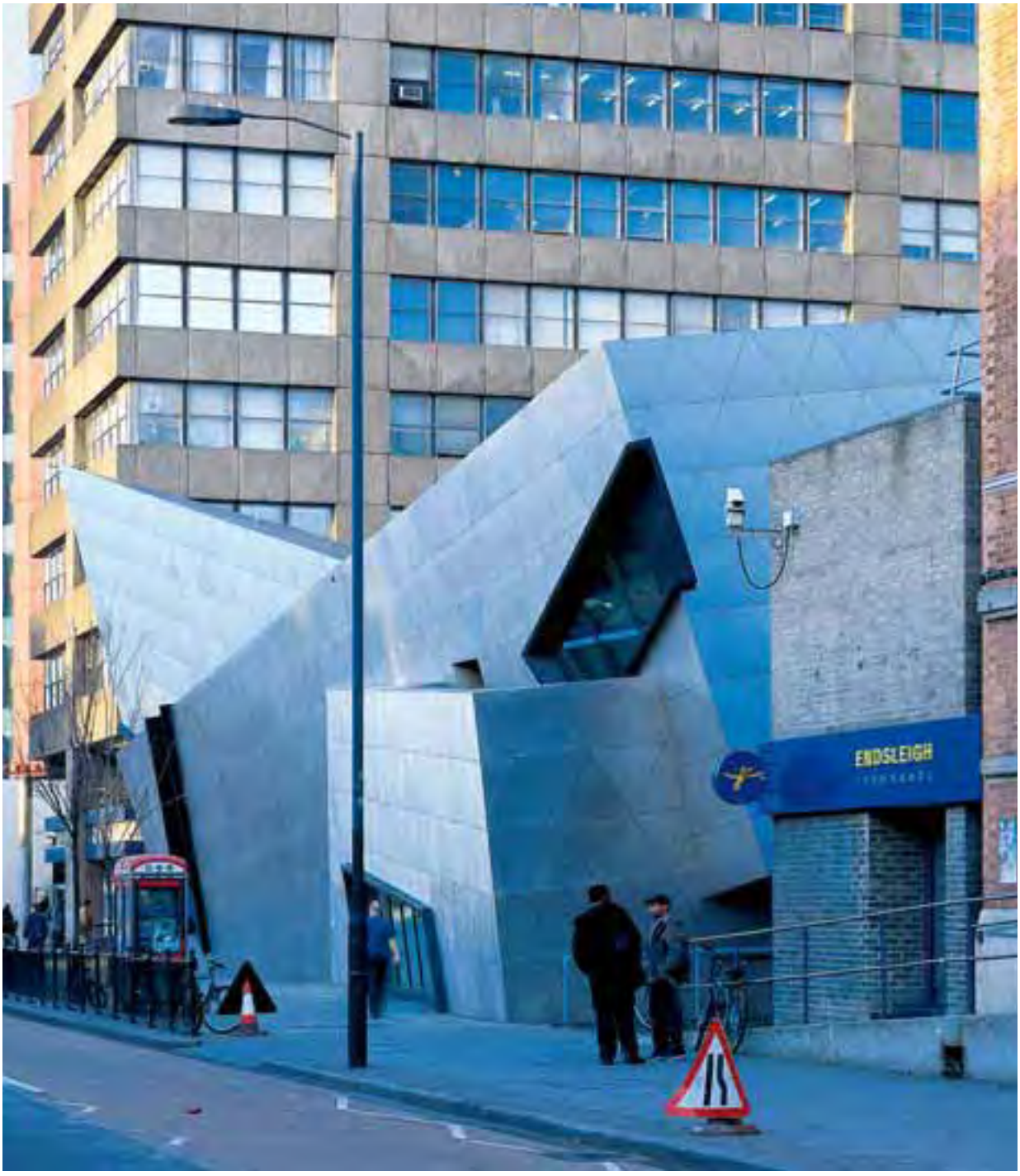
Photographs: David Franck, Ostfildern, D

Ground plan

Metropolitan University Graduate Centre, London, GB

Studio Daniel Libeskind

According to the architect himself, Daniel Libeskind's design for the Graduate Centre of the Metropolitan University in London was inspired by Orion, by far the brightest and arguably the best known constellation in our solar system. The constellational analogy is apparent not only in the building's exterior form, but also in the design of the ceiling grid inside.



Metropolitan University Graduate Centre, London, GB

Not a single wall or ceiling of the building is on an even keel.

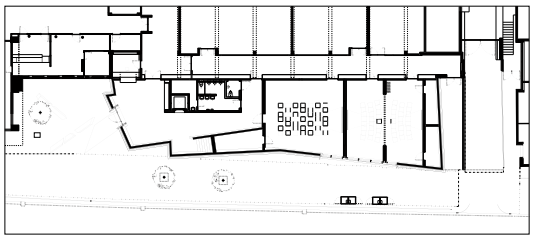
Aluminium strips in conjunction with the lighting form a graphic pattern on the ceiling which alludes to the Orion constellation.

Featuring his hallmark deconstructivist style, Daniel Libeskind's extension to the Metropolitan University in Holloway Road is surely the most striking building ever to grace London's district of Islington. The centre, which has been designed for further training programmes and courses of further study for university graduates, establishes an important interface between the public and the Metropolitan University. The centre is not the sole preserve of students – the premises can also be hired for functions by persons from outside of the university.

The building comprises three intersecting volumes which establish links with the urban setting and are also of symbolic significance. One structure establishes a link between the public, the new building and the university, the second alludes to the nearby underground link to the city centre and the third, more regularly shaped element incorporates the new building into the surrounding cityscape in Holloway Road. A small forecourt additionally emphasizes the interface between the new building and the existing university building. The building is entered on the ground floor, which accommodates several lecture halls that lend themselves to flexible usage. A generously dimensioned staircase leads up to the first floor, where a recreation area, a function hall and other rooms are to be found. A dominant feature inside the building is the acoustic ceiling, which is punctuated by a striking pattern of recessed downlights arranged along various axes. Large geometric openings in the building's outer shell provide for natural lighting. The shiny facade consists of stainless steel cladding featuring a polygonal pattern which produces an ever changing succession of different reflections.

Owner:
London Metropolitan University, London, GB
Architect:
Studio Daniel Libeskind, Berlin, D
Location:
Holloway Road 166-220, London N7 8DB, GB
Sto products:
Acoustic ceiling (StoSilent Panel Aluminium)
Applicator:
Aztec Solutions Ltd, London, GB

Photographs: Sto AG



Ground floor plan

Hochschule für Musik und Darstellende Kunst, (College of Music and the Performing Arts), Stuttgart, D

Wilford Schupp Architekten GmbH

The history of Stuttgart's "cultural district" in Konrad-Adenauer-Strasse began when the Alte Staatsgalerie was built back in 1837. The district's present-day appearance was shaped at the end of the 1970s above all by James Stirling and his partner Michael Wilford. Integral elements of this cityscape are the Neue Staatsgalerie and the music college – a building in which acoustics play a central role.

Hochschule für Musik und Darstellende Kunst, (College of Music and the Performing Arts), Stuttgart, D

Parquet flooring, white walls and clear lines lend the interior an atmosphere of "monastic simplicity" (Wilford Schupp Architekten).

The library is located above the plinth in the two-storey part of the tower.

The choice of facade materials, such as light sandstone, travertine and cream-coloured plastered surfaces, is not the only common feature linking the Stuttgart music college with the neighbouring "Staatsgalerie". The two buildings also complement one another in terms of formal design and their combined presence in the urban landscape to form an integral composition featuring a good portion of eccentricity and colour duly tempered by clear, geometric forms. The common ground is not always immediately apparent: the rotunda, for example – forming the "empty core" of the State Gallery – and the cylindrical tower of the music college form dynamic counterpoints.
The ten-storey-high cylindrical tower (1st construction stage) is the music college's eye-catching centrepiece, presenting an imposing figure in the direction of the city park and the city centre. Its conical base accommodates a concert hall, over which the library is located with a reading room and central skylight. The Senate Hall on the top floor is the college's prestigious showpiece, offering a panoramic view of Stuttgart together with the roof terrace. Following James Stirling's death, Wilford Schupp Architekten took the helm to design the second construction stage, comprising both the extension to the music college and the "Haus der Geschichte" museum, whose L-shaped ground plan rounds off the cultural district. At the same time, it also creates two new spaces in the middle of the district which are linked to the route taking in the museums. On a formal design level the new building cites its neighbour by way of its facade materials and colourful character. At the same time, its greater openness lends it a distinct character of its own. Inside, the new building is clearly a noisier environment than its counterpart. This makes it particularly important for the acoustics in the classrooms and halls to be in tune with the given requirements. The acoustic ceiling system from Sto comes in useful here, its sound-absorbing characteristics banishing any hint of undesired reverberation.

Owner:
Finance Ministry of Baden-Württemberg, Stuttgart, D
Architect:
Wilford Schupp Architekten GmbH, Stuttgart, D
Location:
Konrad-Adenauer-Straße 28, Stuttgart, D
Sto products:
StoSilent Panel 2000 acoustic panel system
Applicator:
Eugen Schwarz, Ausbau + Fassade, Stuttgart, D

Photographs: Roland Halbe, Stuttgart, D

Ground plan

Pavilion for the State Garden Show, Weil am Rhein, D

Zaha Hadid Architects

Zaha Hadid's second building in Weil am Rhein, after the fire station for Vitra, goes by the name of "Landscape Formation One". The dynamic form of the "bundle of paths" (in the architect's own words) is modelled on landscape formations such as river deltas, glaciers and mountain ridges. The interior spaces are correspondingly complex – a case for Sto's acoustic ceiling system.

Pavilion for the State Garden Show, Weil am Rhein, D

The 140 metre long pavilion consists of a pure cast-concrete construction.

The conference rooms are situated in the timber section which is docked to the building at ground level.

The 1999 State Garden Show in Weil am Rhein provided London architect Zaha Hadid with an opportunity to realise her second project in the town, in collaboration with planners Mayer Bährle from Lörrach. The 140 metre long pavilion forms a dominant feature in the flat landscape between the towns of Weil to the north and Basel to the south. Its form is modelled on natural formations: Zaha Hadid refers to river deltas and glacier flows as sources of inspiration. During the show the pavilion served to present the federal state responsible for organising the event. It was then used as an exhibition and conference building for the "Trinationales Umweltzentrum" ("Tri-National Ecological Centre"). The building consists of a bundle of long, streamlined volumes with linear access ways. It is for the observer to decide where the building begins and ends. Is the extravagant form swallowed up by the landscape, or is it slowly emerging from it?

A ramp-like path cuts through the structure's central axis, running along the entire length of the building. The building accommodates an exhibition area extending over two levels and a café with terrace. Offices and conference rooms are situated in the long timber section which projects out from the building at ground level. The residual space which extends over a very long area on the ground floor houses the utility and sanitary rooms. The gently curved south-east facade is the building's showcase side. The large pavilion hall is also situated here, with several entrances. Large expanses of glass lend the expressive all-cast-concrete structure a dynamic character. Acoustics are a tricky matter in such long rooms. As the surfaces were to be kept smooth and the corners as sharp as possible – in typical Zaha Hadid style – StoSilent Panel was used to create surfaces which absorb sound while also underscoring the straight-lined character of the building's design.

Owner:
Weil municipal authorities, D
Architect:
Zaha Hadid Architects, London, GB
Location:
Mattrain 1, Weil am Rhein, D
Sto products:
StoSilent Panel acoustic Panel system
Applicator:
Plattenhardt und Wirth GmbH, Grenzach-Wyhlen, D

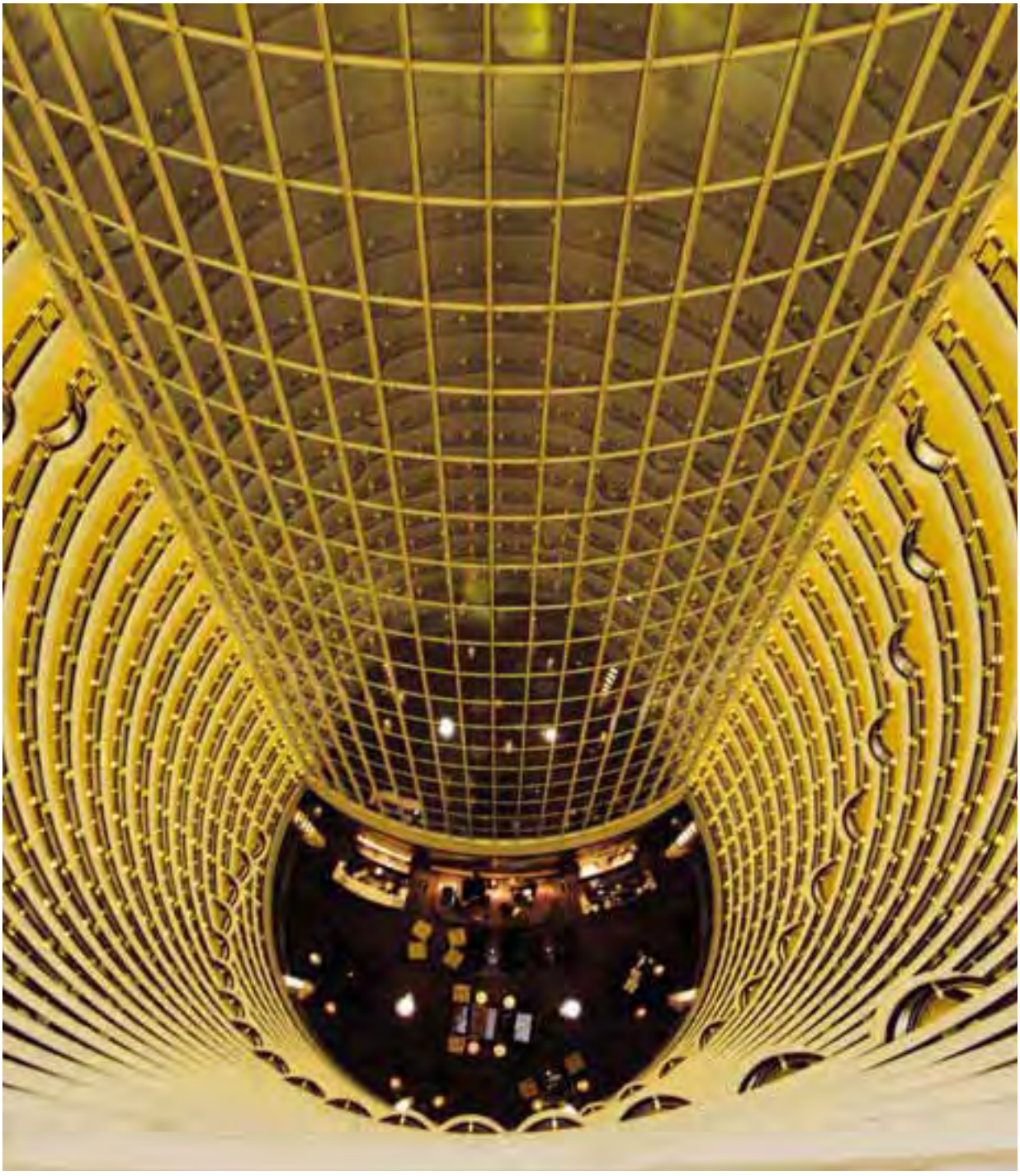
Photographs: Christian Richters, Münster, D

Sections

Jin Mao Tower, Shanghai, CN

Skidmore, Owings & Merrill

Jinmào Dàshà – the golden, magnificent building – is the Chinese name for Jin Mao Tower in Shanghai. It does full justice to its name, its towering, stepped steel and glass facade evoking China's pagodas, which are used for the most part as reliquaries. Its proportions are also spiritual – based on the Chinese lucky number eight.



Jin Mao Tower, Shanghai, CN

Jin Mao Tower soars above the Shanghai skyline.

All the suites offer a view of Shanghai's skyline. The facades are inclined outwards, in keeping with the building's pagoda-style design.

When the top and the base of the 421 metre high Jin Mao Tower are lit up at night, the building's pagoda character becomes particularly apparent. The shadows produced by the projections in the building's facade then create a rhythmic pattern in which the different colours of the sky are projected during the day. In keeping with the temple theme, the tower is surrounded by a landscaped yard which is intended to offer visitors refuge from the hectic streetlife in Shanghai's financial district of Pudong. Similarly to the pagoda analogy, the fact that the entire building has been designed on the basis of the Chinese lucky number eight is also attributable to the quintessentially Chinese blend of business and spirituality. Load transfer is effected via eight pairs of giant columns as well as via the building's core, for example. The ground plan itself is reminiscent of a wind rose pointing in eight wind directions. The building comprises a total of 88 storeys. The top 38 floors house a superlative five-star hotel belonging to the building's owner, Grand Hyatt Hotel. The Grand Hyatt Shanghai boasts not only the highest hotel rooms anywhere, but also the largest atrium in the world – extending through all 38 floors, and measuring 27 metres in diameter and 152 metres in height. The 555 suites are arranged around the atrium, which shines in gold and yellow. The suites offer an impressive panoramic view over the Chinese metropolis. The most dramatic view is to be enjoyed from the highest suite, which is also the largest, at 285 square metres. China's late president Deng Xiaoping would no doubt have enjoyed staying here. In keeping with the "eight" theme, the decision to build the tower was taken on the president's 88th birthday.

Owner:
Grand Hyatt Shanghai, CN
Architect:
Skidmore, Owings & Merrill, LLP, Chicago, USA
Location:
Century Boulevard, Shanghai, CN
Sto products:
Interior paints
Applicator:
Engineering Dept. of Grand Hyatt

Photographs: Grand Hyatt, Shanghai, CN

Ground plan, hotel storey

Foreign ministry, Prague, CZ

AVC Praha spol. s.r.o.

The Czech foreign ministry is located in the Prague district of Hradschin. It is housed in Czernin Palace, which was built by Francesco Caratti between 1669 and 1692. Throughout its existence, the palace has experienced numerous phases of destruction and conversion and different forms of use. The former residence of Count Czernin has now been restored once again and brought into line with the latest acoustic standards with systems from Sto.

Foreign ministry, Prague, CZ

The Czech foreign ministry is housed in the grand surroundings of Czernin Palace. It was once the residence of the Bohemian envoy in Venice.

In the course of the restoration process, parts of the wall and ceiling surfaces in the large hall were fitted with acoustic systems.

Czernin Palace (Cerninsky palac), one of the most beautiful and monumental baroque palaces in Prague, is situated opposite the Loreto complex, one of Prague's Catholic pilgrimage sites. Its 150 metre long facade is structured by a colossal order of 30 Corinthian half columns which reveal Andrea Palladio's influence. Originally begun by Italian architect Francesco Caratti in 1668, construction work on the palace was completed by Giovanni Battista Maderna and Domenico Rossi in 1692, though the interior was not finished until 1718-1722. In 1924 Pavel Janák was commissioned to convert the complex for the Czech foreign ministry, which moved into the building in 1929. Janák also restored the building's grand hall to its original state, false ceilings and partition walls added in the 19th century having altered it beyond recognition. In the course of the most recent restoration in 2003, the "acoustic" lining of mineral wool, canvas and a coating of latex paint proved inadequate. In order to reduce the reverberation times in the large hall, the walls and part of the hall's ceiling were lined with the StoSilent Panel acoustic system. As the new lining was only installed on those surfaces to which the old insulating material had been applied, the hall retained its original appearance after the renovation process.

Owner:
Foreign ministry, Prague, CZ
Acoustic design:
AVC Praha spol. s.r.o., CZ
Location:
Loretánske nám. 5, Prague, CZ
Sto products:
Acoustic ceiling and wall system (StoSilent Panel)
Applicator:
David Ranek, Prague, CZ

Photographs: Sto AG

Turning Torso, Malmö, S

Santiago Calatrava SA

Santiago Calatrava's apartment tower in Malmö's western dockland area measures 190 metres in height. The highest high-rise building in Scandinavia and the second-highest apartment tower in Europe offers a panoramic view over Öresund sound, the strait between Denmark and Sweden. Interior designer Monica Dare has designed an apartment on the 43rd floor – in a colour scheme fully in keeping with the apartment tower's setting.

Turning Torso, Malmö, S

A leaf pattern on the bedroom ceiling is intended to impart a feeling of lying in the shade of a tree.

Each level is turned at an angle of 1.6 degrees in relation to the level below; the exterior walls are inclined at an angle of up to seven degrees.

The Turning Torso was declared a new landmark in the town of Malmö at its official inauguration in August 2005. The idea for the skyscraper stems from a sculpture by Spanish architect and artist Santiago Calatrava depicting a turning human body. Johnny Örbäck, a former chairman of the board of directors at Swedish housing association HSB, was so fascinated by this sculpture that he commissioned Calatrava to design the skyscraper.
The apartment tower is based on an integrally cast foundation consisting of 5,100 cubic metres of concrete. The building's core consists of a concrete pipe with an internal diameter of 11.60 metres and a wall thickness which tapers from two metres on the ground floor to forty centimetres on the top floor.

Vertical access is provided by three high-speed lifts inside the pipe. From outside the concrete core is supported by a steel frame which is reminiscent of a fish-bone.
The tower possesses a total of 54 floors, each with 400 square metres of floor space. From top to bottom, the slender structure turns by 90° around its own axis. It breaks down into nine segments of five storeys each, with a set-back intermediate level between every two segments. Stockholm interior designer Monica Dare has designed an apartment in the tower which is known as the "Glimmering flat": a light and airy interior affording breathtaking views of the sea. Monica Dare's concept centres on three main colours. Turquoise finished in a metallic effect evokes water glistening in the sun. White establishes a link with the fresh air at the seaside. Individual elements in rich red lend the rooms a warm atmosphere. The oiled oak flooring is a standard feature of all the apartments.

Owner:
HSB Malmö, Malmö, SE
Architect:
Santiago Calatrava SA, Zurich, CH
Interior designer:
Monica Dare/Malaremästarna, Stockholm, SE
Location:
Western dockland, Malmö, SE
Sto products:
Interior plasters and paints (StoDecolit, StoColor Latex 3000, StoColor Metallic)
Applicator:
Sven-Olle Ekstrand Målerikonsult AB, Staffanstorp, SE
Photographs: Ole Jais, Helsingborg, SE

Ground plan of 43rd floor

Sto Info Factory, Stühlingen, D

Arno Design GmbH
Wilford Schupp Architekten GmbH

A small number of features of historical and architectural value are all that remain of the large complex which once housed Sto's production plant here. The former industrial facility has given way to a presentation centre which invites visitors to discover the Sto company at first hand. Communication features, historical insights, product libraries and a notable exhibition make the Info Factory a treasure trove of new ideas.

Sto Info Factory, Stühlingen, D

Charles Eames' "Wired Chairs" and four gigantic "XXL Dome" lamps by Ingo Maurer shape the look of the cafeteria in the entrance area.

In order to enhance the effect of the Sto paints which feature in the individual areas, a neutral tone has been chosen for the interior design throughout the building.

Two 16 metre high lime kilns from the 19th century measuring almost six metres in diameter provide an impressive entrance portal to the Sto Info Factory. The external walls of the two lime kilns in the entrance area, which is also used as a venue for special events, are finished in rich brick red and serve as a projection surface for motifs depicting Sto's history. In this way, visitors are provided with visual information on Sto AG before they even set foot in the actual building. Facilities inside the building include computer workplaces with internet access and a cafeteria whose rich dashes of colour illustrate the variety of the Sto colour range.
Various routes lead visitors from the entrance area to the Sto materials library and the area of Sto product development. One of the lime kilns harbours further information on Sto's history, while the other bathes visitors in a coloured light shower. After passing between the two kilns, visitors enter directly into a bright yellow cube in the middle of the building. Eight 1.6 metre high metal baskets hang from the natural-finish concrete ceiling here, containing literature and screens for video presentations of the latest developments from Sto. Striking black supporting columns of a historical concrete silo allude to the former usage of the present-day Info Factory. Material libraries in deliberately minimalist colour schemes flank the product development area on both sides. One side of the room presents facade systems and model set-ups, while the other focuses on colours, surface finishes, textures and plasters. The exhibition area covering around 300 square metres is situated at the rear of the Sto Info Factory, taking in the complete scope of the Sto product range and the creative potential it offers. The display system comprised of U-shaped cubes in varying sizes showcases the individual topics to maximum effect. A further attraction in the showroom is a turbine dating from 1923 which is still able to generate 300,000 kW of power today.

Owner:
Sto AG
Architects:
Wilford Schupp Architekten GmbH, Stuttgart, D
Interior design:
Arno Design GmbH, Claus Neuleib, Munich, D
and StoDesign, Stühlingen, D
Location:
Ehrenbachstraße 1, Stühlingen, D
Sto products:
Complete Sto product range

Photographs: Sto AG

Ground plan

European Parliament, Strasbourg, F

AS. Architecture-Studio Paris

The facade of the European Parliament is dominated by glass and steel. Inside, colourful touches such as the wood-lined wall of the plenary chamber or the smooth, red polished plaster finish on the walls of the corridors offer the politicians a welcome respite from the often protracted debates.

European Parliament, Strasbourg, F

The raised top at the corner of the building makes the parliament building appear longer than the ground plan actually suggests.

The large plenary chamber is dominated by the colour blue, which stands for constancy and dedication, has a calming effect and is conducive to objectivity – ideal conditions for successful debates.

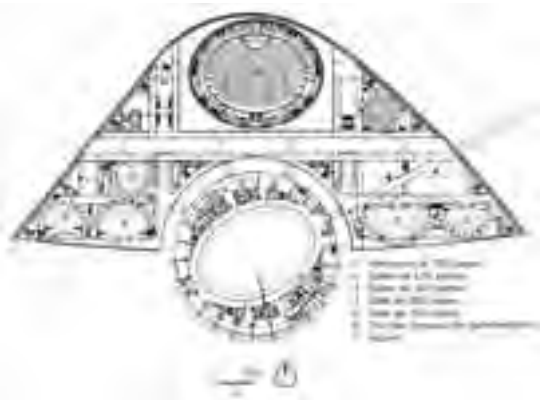
The glassy seat of the European Parliament rises monumentally at the confluence of the Ill and the Rhine-Marne Canal in the French city of Strasbourg. The curved, semi-circular structure, whose highest point is accentuated by a dome, fills the entire site on which it stands, extending right down to the banks of the waterways. The aim of the construction project was to bring together under one roof the institutions of the European Parliament, which were previously spread over Strasbourg.

This prestigious project was preceded by a design competition in 1991 which was won by Paris firm Architecture Studio. The architects achieved the feat of building a small town within the space of 200,000 square metres, the centrepiece of which is the plenary chamber in the front part of the building. One week each month, this chamber is the venue at which 735 MPs from 25 nations meet, with space for over 600 spectators in the upper galleries. The complex also houses a total of 18 conference rooms, 1133 offices, a media centre and four restaurants.

The transparent character of the parliament building symbolises the openness of European democracy. Even uninvolved passers-by are involved in the political happenings inside: countless lights in the wooden ceiling of the plenary chamber burn more brightly, the more heated the MEPs' discussions grow.

Owner:
SERL
Architects:
AS. Architecture-Studio, Paris, F
Location:
Quartier de l'Europe, Quai du Chanoine Winterer, Straßbourg, F
Sto products:
Decorative interior coatings, interior paints
Applicator:
Ets. Kleinmann SA, Ets. Gratzeisen, Ets. Ennesser, Ets. Schwartz, Ets. Debuche, F

Photographs: Sto AG



Ground floor plan

Rocco Forte Group deluxe hotel Villa Kennedy, Frankfurt/Main, D

Architecture office Porphyrios Associates / Architektengruppe GHP

A hotel thrives on its service and its interior character. Accordingly, the Rocco Forte Group accords great importance to harmonious interior design in its deluxe hotel in downtown Frankfurt. Furniture, wall and ceiling colours are all key factors which require due consideration here in order to create an inviting and appealing hotel atmosphere.

Rocco Forte Group deluxe hotel Villa Kennedy, Frankfurt/Main, D

The harmonious colour schemes for the walls and furniture and the modernly appointed hotel rooms create an individual and congenial atmosphere.

The harmonious earth colours in the lounge provide a cosy and relaxed setting.

On the southern banks of the Main in downtown Frankfurt lies the Villa Kennedy – the first German luxury hotel of the Rocco Forte Collection. Despite its central location, it offers a perfect retreat from the hustle and bustle of the city. With the former Villa Speyer dating from 1904 at its heart, the hotel features an attractive and tranquil inner courtyard with terrace which is also the central point of the complex, connecting the three newly built wings. The original villa now accommodates the reception area and the larger suites. Wooden floors and mirror walls in the entrance areas of the rooms exude a luxurious, cosy atmosphere. The interior design in the Villa Kennedy aims to merge clear lines with various materials, textures and colours so as to emphasize individual areas. The Italian restaurant "Gusto" with its columnar architecture offers a dining experience in the special atmosphere of the courtyard in the warmer months.

The 850 square metre wellness area "Villa Spa" extends over four levels and features a 15 metre long swimming pool with relaxation zone, whirlpool, sauna and Turkish steam bath, a yoga and Pilates studio, a fitness room and eight treatment rooms. For business people the hotel offers seven conference rooms – five with connecting doors – for between 6 and 40 guests. A 326 m² ballroom is available for large-scale parties and events.

Owner:
Fay Projects GmbH, Frankfurt am Main, D
Architects:
Architecture office Porphyrios Associates, London
Architektengruppe GHP, Oberursel, D
Interior design:
Martin Brudnizki under the direction of Olga Polizzi, London, UK
Location:
Kennedyallee 70, Frankfurt am Main, D
Sto products:
Acoustic systems, interior paints, internal insulation, creative interior finishes, lacquers
Applicator:
Raum + Schrift, NBL Neuberger Innenausstattung, Chemnitz, D
Photographs: Sto AG

Mendelssohn House, Leipzig, D

Torsten Markurt

After Felix Mendelssohn Bartholdy's death in 1847 his former home threatened to fall into disrepair. Instead, an extensive renovation project preserved Mendelssohn's abode and restored it to its former glory – with a little help from creative interior and exterior coatings from Sto.

Mendelssohn House, Leipzig, D

Mendelssohn Bartholdy lived and worked for some time in this late classicist building from 1844 in downtown Leipzig.

Following the restoration, the corridor also displays its original paintwork and wooden floor boards.

Famous German composer Felix Mendelssohn Bartholdy led an itinerant life. He took up his final place of residence in Leipzig in 1845, in a building dating from the same year in Goldschmidtstrasse. He lived with his family on the first floor of this building until his death in 1847, composing works such as his "Elias" oratorio here. In response to plans to demolish this culturally important building at the end of the 20th century, the International Mendelssohn Foundation was founded on the initiative of Prof. Kurt Masur, with the aim of preventing the house from becoming completely dilapidated and collecting money to fund an extensive renovation. In 1997, 150 years after Mendelssohn's death, the building was opened as a museum in the composer's honour. As an authentic site of music history in Leipzig, the house in which Felix Mendelssohn Bartholdy lived and died harbours numerous treasures and recaptures the atmosphere from the composer's lifetime with original items of furniture, letters and notes in his own hand, first editions of various works, watercolours and portraits. A historical garden with summer house provides a definitive exterior setting. The building has been reconstructed and renovated according to the original plans, preserving its original substance. Much evidence of the style of cultivated home living in the 19th century has disappeared in Leipzig as valuable materials have been removed in the course of renovating historical houses. In contrast, important examples of Biedermeier housing architecture have been preserved in an excellent state of repair on all floors of the Mendelssohn house. On entering the house, the visitor has a rare opportunity to relive the world of the 19th century. The music salon of the Mendelssohn family is additionally used for matinee concerts every Sunday.

Owner:
Internationale Mendelssohn-Stiftung e. V.
Architects:
Torsten Markurt, Lützschena-Stahmeln, D
Location:
Goldschmidtstraße 12, Leipzig, D
Sto products:
Interior and exterior coatings, silicate coatings, etc.
Applicator:
Malerbetrieb Heil, Markkleeberg, D
Uni Bausanierung GmbH, Bad Lausick u.a., D

Photographs: Internationale Mendelssohn-Stiftung, Sto AG

Products and systems

Textures and surface finishes from smooth to very coarse · Design studies · Interior paints
Interior plasters · Decorative coatings · Wall and ceiling coverings · Acoustics
Internal insulation · Floor coatings · Lacquers and stains

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Colour variety, according to the StoColor System and other colour systems
The 3-level principle behind the StoColor System: The human colour perception area,
the colour wheel with 24 basic tones, the five colour rows

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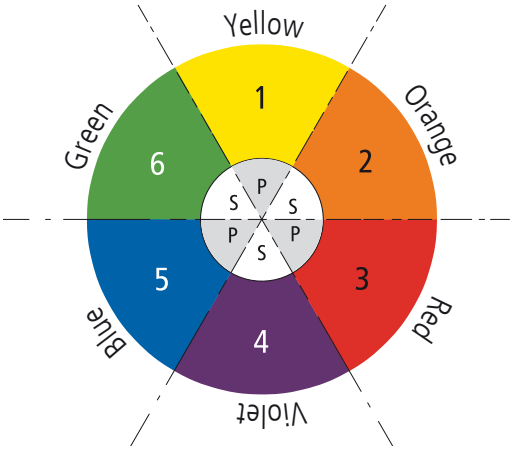
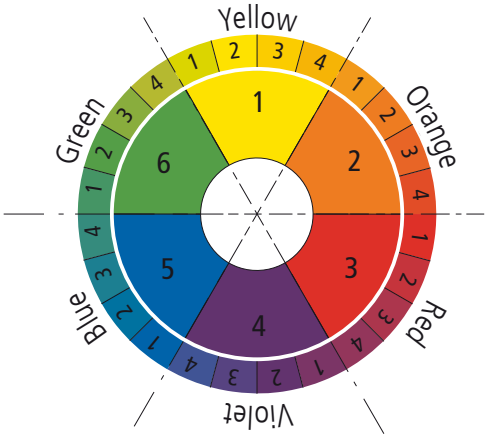
The StoColor System –
emotional and functional

All matter and energy is colourless. Colour only arises as a sensory perception in the human brain. The StoColor System explicitly takes account of this duality of human perception and the aesthetic aspects of architectural colour design.

The principle of the same-colour triangle (multiple tinting with white, grey and black) results in 772 colours. 28 grey shades bring the total number of colours in the StoColor System to 800. The various shades are geared to the human perception of colour, rather than to any strict colorimetric system. Sto is not restricted to its own colour system, however – virtually all colours from existing systems, such as NCS, Pantone, RAL, British Standard, etc. can be mixed according to individual requirements.

Simple and creative –
The 3-level principle behind the StoColor System



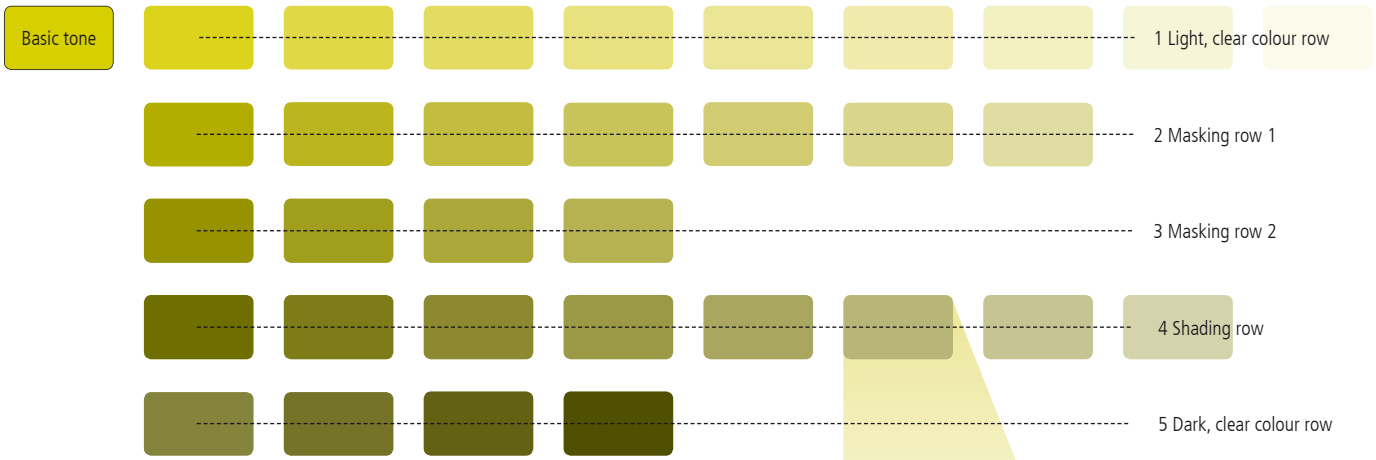


Level 1
The human colour perception area

The human perception of colour primarily distinguishes between yellow, orange, red, violet, blue and green. This perception model forms the basis of the StoColor System.

Level 2
The colour wheel with 24 basic tones

Six colour areas, consisting of the primary and secondary colours yellow, red, blue, orange, violet and green, form the basis of the StoColor System. Each of these colours is differentiated into four hues to produce a 24-part colour wheel – the basic tones.



Level 3
The five colour rows of the 24 basic tones

Each basic tone has five colour rows which are tinted according to the principle of the same-colour triangle.

Make-up of the colour rows:

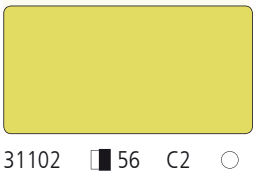
1 **Light, clear colour row**
Basic colour tinted towards white

2 **Masking row**
Basic colour tinted towards grey

3 **Masking row**
Basic colour tinted towards grey

4 **Shading row**
A colour shade of the light, clear colour row mixed with a colour shade of the dark, clear colour row.

5 **Dark, clear colour row**
Basic colour tinted towards black



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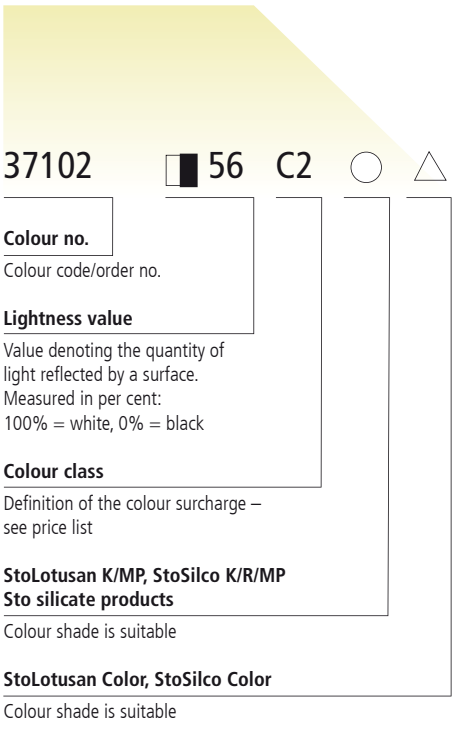

Colour no.
Colour code/order no.

Lightness value
Value denoting the quantity of light reflected by a surface.
Measured in per cent:
100% = white, 0% = black

Colour class
Definition of the colour surcharge – see price list

StoLotusan K/MP, StoSilco K/R/MP
Sto silicate products
Colour shade is suitable

StoLotusan Color, StoSilco Color
Colour shade is suitable

StoColor presentation media –
simple and persuasive

Professional colour design requires not only a well-balanced colour system, but also the certainty that the evolved design concept can actually be realised precisely as envisaged. The presentation media are designed with this in mind. The main emphasis here is not on colorimetric or theoretical considerations. The primary aim is to develop design tools which are applicable to the most diverse architectures, styles and colour materials.

Comprehensive service materials, from the CD-ROM to the colour sample box, provide architects with ideal support in their planning and consultation work.

Orders and information:
infoservice@stoeu.com or telephone: +49 7744 57-1131

Colour fans
The basic tool for choosing colours and combinations of colours. Separating indices sort the colour system into six perception areas. The key items of information are provided on the relevant leaves.

Colour edition
Six colour fans for planning colour schemes. Each fan presents one of the six perception areas. Each individual leaf presents a colour shade over its entire area, to enable the combination, comparison and selection of shades. Each fan additionally includes the grey rows, representing them over the entire area of the leaves, in the same manner as the colour tones.

Colour sample box
The sample box assists the designer in evolving colour schemes and collages. It contains all the colour shades of the StoColor System, with each shade presented over the entire area of a relevant A5 leaf. The shades are systematically sorted into the six perception areas by separating indices. Additional leaves can be ordered for each individual colour shade.

CD-ROM colour ranges
Digital colour ranges for the following computer programmes: Adobe Photoshop, Corel Draw, Micrografx Picture Publisher, Nemetschek Allplan FT, Arcplus, ArCon, AutoCAD and ArribaCAD; the CD also contains the RGB and Lab values of the StoColor System.

Products and systems

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Bills of quantities

Support in project planning · Useful internet links

1.1
1.2
1.3

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Room acoustics · Seals of approval · Rules and standards · Glossary

Further information

Specific information and brochures from Sto

Bills of quantities
On plan with Sto

The use of software for planning and tendering purposes is very important to you in your daily work. At www.sto.de, heading Architects under Bill of quantities you will find all the Sto specifications for entering in your AVA programme or for use in word processing programmes such as MS Word.

- **Tendering assistant**
  The tendering assistant is an ideal swift and simple tool for displaying specifications. The user-friendly navigation system takes you to the individual areas of Facades, Interiors and Concrete, enabling you to view, print and download selected text modules.

- **Download in GAEB90 KE81 format**
  GAEB is the established import format in the area of AVA programmes. You will find the Sto specifications in GAEB KE81 format on the internet at the Sto homepage, www.sto.de.

- **Download as Excel spreadsheets**
  If you do not use AVA software, you can download all our texts from our homepage in MS Excel spreadsheet format.

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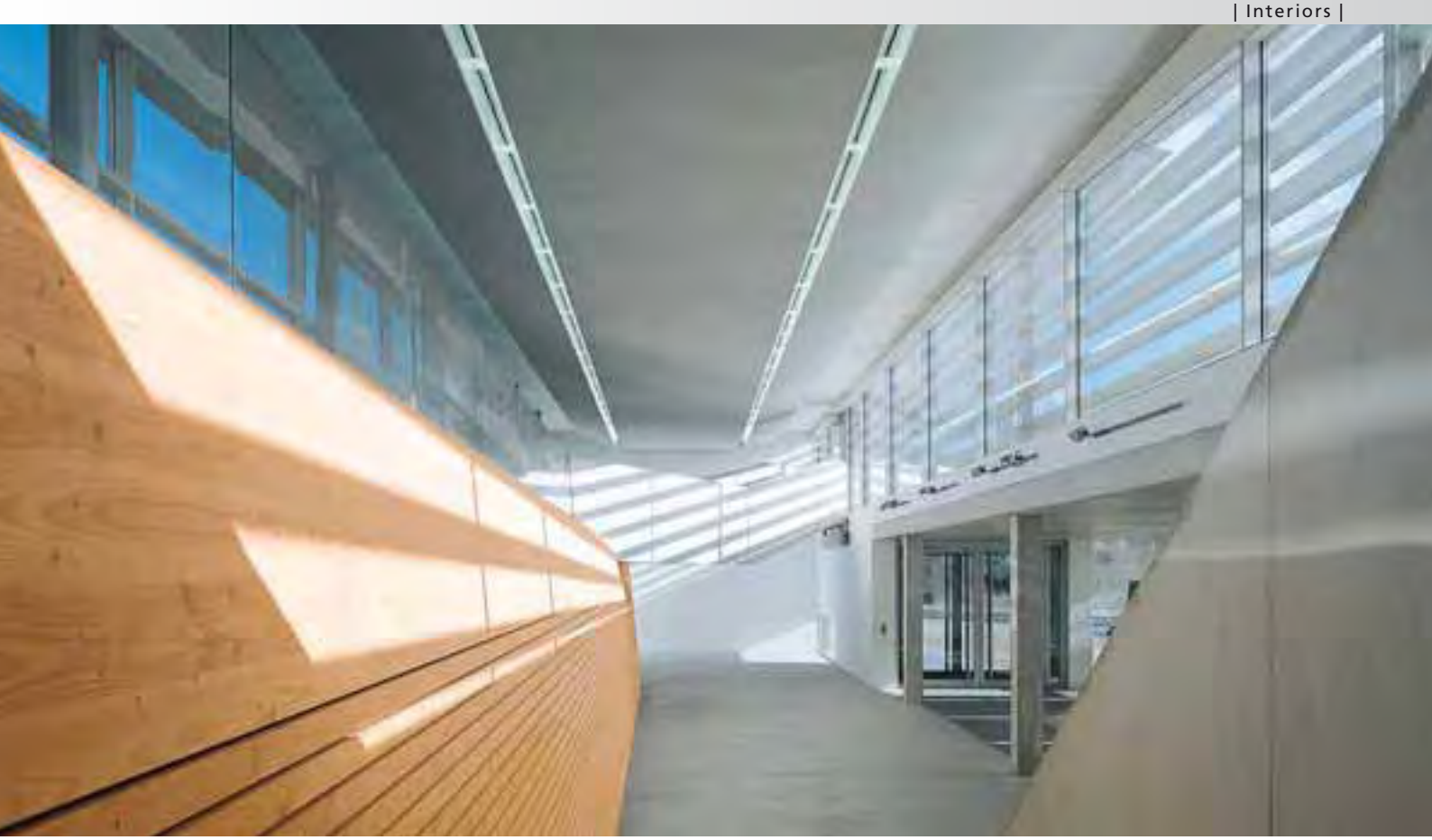


Background information Interiors

It is to be noted that the details, illustrations, general technical information and drawings contained on the following pages only represent general suggestions and details which serve solely to outline the essential modes of functioning of the products concerned. No dimensional exact tolerance applies. The applicator/client is responsible for verifying the applicability and completeness of the system in the specific construction project concerned. Adjacent trades are shown in schematic form only. All specifications and details are to be adapted according to the on-site situation and do not constitute detailed or installation planning for the respective trades. The technical specifications and information on the products which are to be found on the technical data sheets and in the system descriptions/approvals must be observed.

Contents

Pusteblume-Zentrum in Cologne, D
(Franken + Kreft Architekten, D)

Interiors

Feel-good interiors

Ongoing technological advances have brought vast and widespread changes to home living in the past 100 years, raising standards beyond recognition in the process. As ever, homes need to be functional – but congeniality plays a key role, too. Apart from a room's proportions, important factors here also include light, temperature, the use of colour and the textures of the surfaces. Health and environmental aspects are additional considerations which have acquired increasing importance in recent years.

Everyone has their own individual requirements. As such, there is no one universal home design concept to suit all needs. Some favour sleek solutions in muted colours, while others prefer bolder, more colourful alternatives. The way we design a buildings interiors is ultimately a matter of personal taste. As a manufacturer of products for interiors, this makes it all the more important for us to offer a diverse portfolio which leaves plenty of scope for individual planning and design options.

This brochure provides a concise overview of the key topics relating to the choice of interior products – from colour, surface finishes and light through the indoor climate and a healthy home environment to room acoustics and the protection of building substance. A glossary provides brief explanations of key terms. Further support is available from our Sto Planning Service.

Colour

Setting the tone

Colours influence our feelings, actions and judgements. Although everyone reacts differently, colours can be classified in terms of certain general perceptions. This knowledge is used in medical therapy as well as interior design, for example. Gentle, calming colours are commonly predominant in waiting rooms at doctors' surgeries, while fresh colours can liven up drab factories.

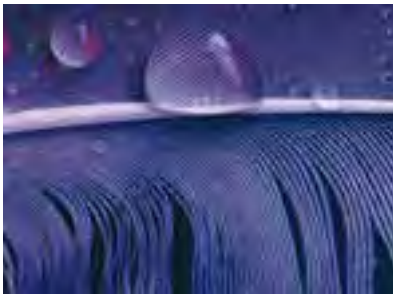
Red
Associations: Strength, vitality
Actions: Stimulating, activating
Effects: Strengthening, fortifying

Orange
Associations: Pleasure, joy **Actions:** Vitalising, encouraging **Effects:** Conducive to pleasure, relaxation, light-headedness, relief

Green
Associations: Hope, contentment, calmness **Actions:** Harmonising, promotes concentration **Effects:** Balance, steadiness, commitment

Yellow
Associations: Warmth, openness, light-heartedness **Actions:** Cheering, instils a happy frame of mind
Effects: Liberating, encourages profligacy

Blue
Associations: Constancy, devotion, calm
Actions: Calming, relaxing, promotes a matter-of-fact approach **Effects:** Composure, absorption, reserve



Purple
Associations: Power, authority, dignity
Actions: Uplifting **Effects:** Strengthening, fulfilling

Violet
Associations: Dissatisfaction, self-centredness **Actions:** Regenerative, stimulates the subconscious
Effects: Austerity, melancholy

Colour
A different picture every time

A pale green exudes a cool and elegant character.

Every colour has a different effect on the human psyche, and every individual has their own favourite colours. Notwithstanding these psychological influences and personal preferences, colours also influence the architectural character of a room in a diverse variety of ways.

Apart from the psychological effects of colours in rooms, their physical effect also plays a major role. Colours containing a high proportion of red exude a warm atmosphere, for example, and also perform a signalling function. A room featuring a bold red colour thus appears warmer, but also smaller. When blue is predominant, a room appears cooler, reserved and unobtrusive. A room painted in a subtle blue or turquoise appears larger, because blue is the colour of depth, but at the same time cooler.

The photographs on this page clearly illustrate how easily the effect of the same room with the same furnishings can be altered simply by choosing a different colour composition.

Bold and expressive: Red brings the wall to the fore.

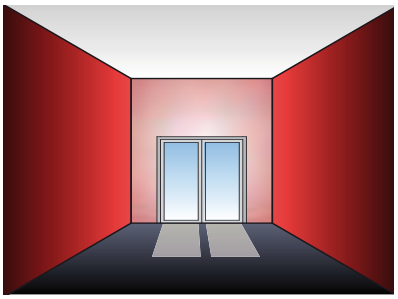
A tone-in-tone finish provides for a very refined air, the delicate yellow adding a touch of warmth.

Discreet and reserved: A darker and lighter blue combined.

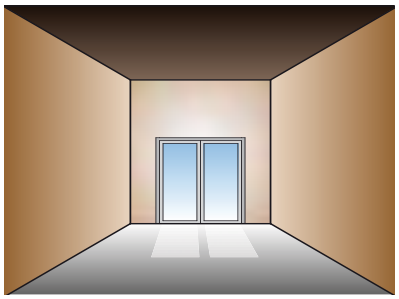
Colour
The right composition

Among a host of other factors, the sense of space in a room is determined by its proportions. Colour influences how these proportions appear to the eye. Depending on the colours used to embellish a room, it will appear wider or narrower, shorter, longer, higher or lower. Colour thus has an amazing capacity to alter our sense of space.

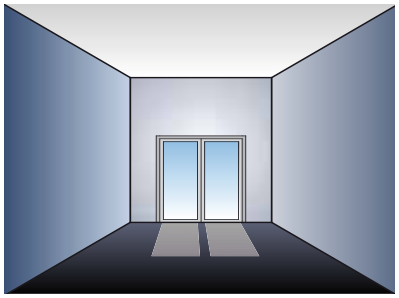
The darker side walls narrow the room. The end wall is lighter, the ceiling white. The room appears longer, narrower and higher.

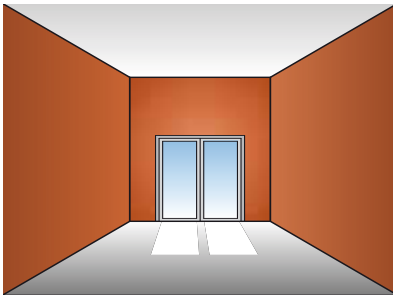


The dark ceiling makes the room appear lower. An ideal design variant in particular for apartments with high ceilings in older buildings.

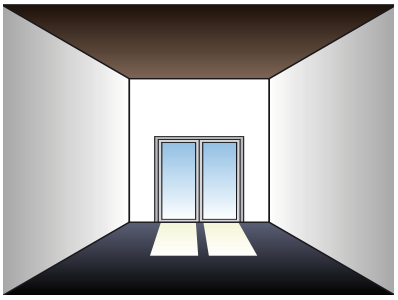


The dark floor, the light walls and the even lighter ceiling correspond to the natural sense of space. The light blue of the walls makes the room appear wider, while the white ceiling opens it up at the top.

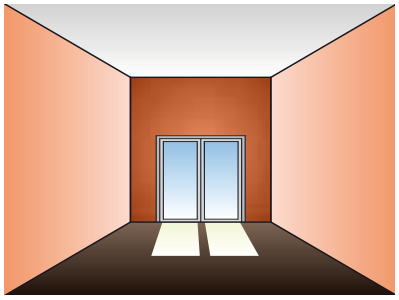




All walls are finished in a rich colour. The floor is light, the ceiling remains white. The room appears to be narrower and higher.



The darker ceiling and the even darker floor make the room appear lower. The light side and end walls lend it greater width.



The end wall is coated in a warm, rich colour, the walls feature a lighter shade. This makes the room appear shorter. A variant which benefits long and narrow corridors, for example.

Texture and surface finishes

Shaping the face of interiors

Every room exudes its own special character. Similarly to colours, textures and surface finishes also play a crucial role here, through their capacity to communicate elegance, naturalness, lightness and a host of other impressions.

Glossy, marbled surfaces embody a prestigious and elegant character, for example. Rough or trowelled plaster, on the other hand, comes into its own in the country-house style. A cloudy coating or ragrolled finish lends a room a light touch and is commonly used as a counterpoint in rooms containing a large amount of technical equipment. A room finished in rich, monochrome colours appears heavier and more robust. Such a design approach lends stability to a corridor containing a large number of doors, for example. As a general rule, the finer the surface finish and texture, the more refined a room will appear. The coarser they are, the more antiquated and down-to-earth the effect will be.

Light
Gloss and whiteness

The high whiteness of Sto paints is illustrated by the single-coat interior dispersion paint StoColor Rapid, for example, which generally only requires one coat in order to cover the old colour.

Whiteness and gloss levels are key factors in interior design. They can provide rooms with a refined, gloss look or a discreet matt finish – and all in various degrees of whiteness.

The degree of whiteness influences the effect of the room. Rooms should thus be designed according to their location in the ground plan: Rooms in the north in warmer whites with a touch of yellow, rooms in the south in cooler whites with a touch of blue.
As the "darker" shades of white are not immediately striking but are nevertheless perceived subconsciously, the different degrees of white also provide an effective means of playing with a room's proportions.
The different gloss levels, ranging from high gloss to matt, also result in varying degrees of whiteness. Feel-good effects or special highlights can thus be created according to the intensity of the gloss level. The high hiding power of Sto paints additionally enables swift and effective overpainting of the old colour.

A room finished all in white brings out the radiant whites of the walls even more effectively.

The high whiteness of the walls in contrast to the dark flooring lends the rooms in the Eurotheum in Frankfurt, D, a pleasantly light and airy character.

Light
Natural and artificial light

The character of a room can be greatly altered by means of both natural and artificial light. In addition to a knowledge of the use of artificial light sources and the possibilities they offer, this also calls for an understanding of the incidence of natural light throughout the seasons.

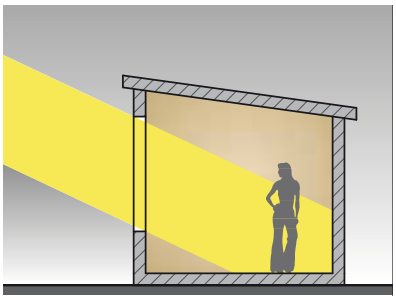
In designing a building's interior, due consideration must always be given to the light in both the summer and the winter. The flatter light of the winter shines into rooms at a substantially lower angle than summer light – at least as far as the direct light emanating primarily from a southerly direction is concerned. Direct light from a northerly direction is not to be expected at any time of the year – one reason why shed roofs always face north.

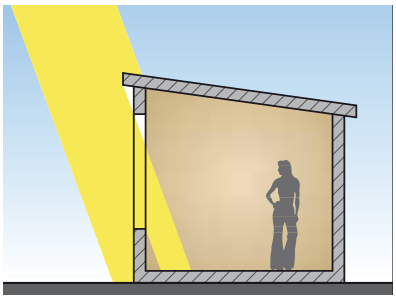
Artificial light provides a more individual means of controlling the indoor light situation. Apart from the intensity of the light source, the level of lighting depends to a substantial extent on the reflectance of the illuminated surfaces. Reflectance is defined as the percentage of the incident light which is reflected by a surface. Dark surfaces reflect only a small proportion of light, while light surfaces are more reflective. The maximum reflectance of dark wood panelling or a rich wall colour stands at 26 %. Light wood panelling or a lighter wall colour reflect around 50 % of the incident light, while white walls have a reflectance of 85 %. BGI 650 (recommendations of the employers' liability insurance association on safety at the workplace) recommends the following reflectance levels in rooms with computer workstations:

- Ceiling:
  0.7 to 0.9 (70 % – 90 %)
- Walls:
  0.5 to 0.8 (50 % – 80 %)
- Flooring:
  0.2 to 0.4 (20 % – 40 %)
- Working surfaces:
  0.2 to 0.7 (20 % – 70 %)

Illuminance is defined as the luminous flux which falls on a certain surface from a light source. It is measured in lux (lx). Illuminance is the most important technical parameter when planning lighting installations. An illuminance of at least 500 lux is required at computer workstations, for example. The illuminance and the colouring of the ceiling, the floor and the walls are the key factors determining the impression of brightness created by a room or individual surfaces. Illuminance is measured using a luxmeter or light meter. The basic lighting in a room is calculated as the mean value of uniformly distributed measurement points, generally at a height of 0.85 m. At workplaces, measurement is carried out directly at the place of work while the employee is working.

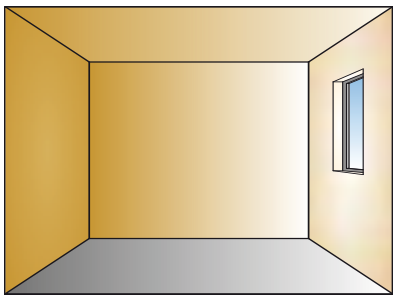
In the winter the room is fully exposed to the sunlight. Even when the sun is shining, the level of lighting in the room is only half that of a cloudy summer's day.

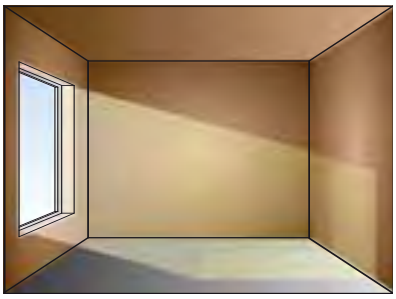




In the summer the angle of incidence of the incoming light is much steeper. The sun barely shines into the room.

A north-facing room with small windows appears larger and brighter in delicate pastel shades.



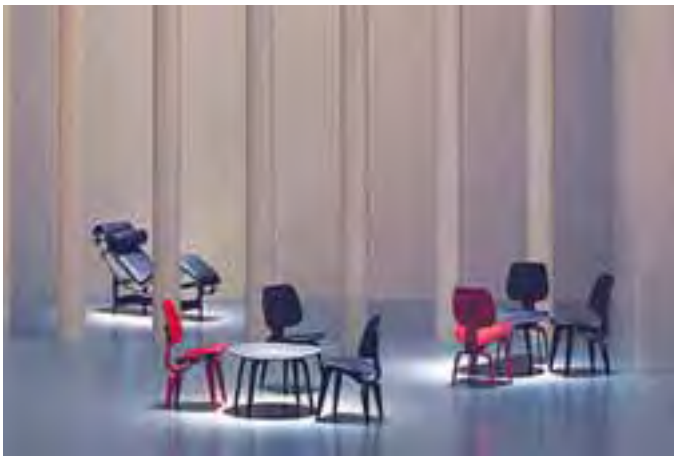


Large south-facing windows allow plenty of light into the room, whose darker colours suit the scenario well. At the same time, due consideration must be given to the heating effects of such strong sunlight.

Light
Light where it belongs

Apart from ensuring a room is sufficiently bright inside, lighting can also be used cleverly to alter a room's proportions.

Uniform, direct or indirect lighting serves to alter the effect of a room and influence its proportions in terms of height, depth and width. Several dynamically controlled light sources in a room can be used to create a versatile and atmospheric setting. A number of example lighting set-ups and their effects are presented below by reference to a model scenario.



When the light is aimed directly at the furniture, it emphasizes the latter's shapes, colours and textures.

A well illuminated yet intimate atmosphere can be attained by focusing the lighting directly on the spaces in between the furniture, rather than on the furniture items themselves.

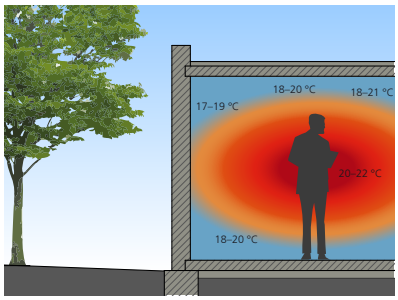
Projecting the light solely onto walls or the ceiling makes the room appear higher, while the other features in the room retreat into the background.

Directing the light at only a certain part of the furnishings accentuates the space concerned, while everything else retreats into the half-shadow.

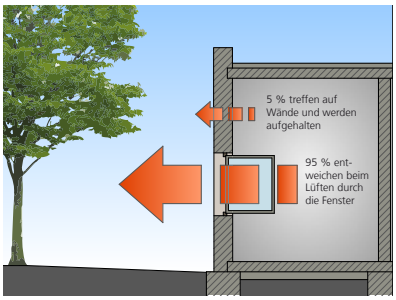
Source of photographs: Zumtobel

Indoor climate
Comfortable interiors

Interior comfort is determined not by the air temperature alone, but also by temperature differences and subsequent air movement.



Window ventilation accounts for 95 % of moisture exchange in buildings.



Health and well-being are affected by numerous external factors – smells, sounds, temperatures, humidity, air movements, as well as the incidence of mould and electrosmog. Paints, coatings, acoustic and insulation systems which have been tested to confirm that they are harmless to the health and environmentally compatible are able to help establish a good ambient interior climate.

A well-balanced relationship between surface temperature and room temperature is important to our sense of wellbeing in a room.

The term "breathing walls" is often heard – but no such thing exists! As a rule, air exchange does not occur through the external walls. Rather, the term generally refers to vapour diffusion. As a rule, only 5 % of moisture diffuses through the building's envelope, while the remaining 95 % is released through the windows into the outside environment.

Comfort

Prerequisites for a good ambient interior climate are:

- Perceived temperature 18–21 °C
- Ambient room air temperature 20–22 °C
- Wall surface temperature 17–19 °C
- Floor temperature 18–20 °C
- Maximum air movement 0.2 m/sec
- Temperature differences of no more than 3 °C in vertical direction
- Ceiling temperature 18–20 °C
- Relative air humidity approx. 50 %

Perceived temperature

Our skin serves as a form of continuous heat exchanger. At an ambient room air temperature of 20 °C, a normally clothed person has an average skin temperature of 33 °C. The temperature difference between the surface of the body (skin) and the environment results in a continual loss of body heat. This takes place in various ways:

- Through evaporation (sweat, breath)
- Through heat conduction (primarily via the feet to the floor)
- Through heat transfer (air passing by the surface of the body)
- Through thermal radiation between the body and the walls

Contrary to the common assumption, the temperature we perceive is not identical to the ambient room air temperature but is the mean of the ambient room air temperature and the wall surface temperature.

Air movement

In closed rooms, air is continually in motion (convection) as a result of warm (light) air rising and cold (heavy) air falling. This air movement is not generally noticed when the velocity is below 0.2 m/s. When the difference between the temperature of a surface and the ambient room air temperature exceeds 3 °C, however, the air cools to such an extent that the air movement becomes noticeable. In layman's terms – it gets draughty!

Royal Theatre (Koninklijk Theater Carré) in Amsterdam, NL (Greiner Van Goor Huiten Architecten bv, NL: StoSilent Cool)

Cleanliness

Apart from looking unsightly, mould can also cause illnesses. Reason enough to nip it in the bud. The StoSil In interior paint from Sto offers natural protection here, making it ideal for children's rooms and bedrooms and the perfect solution for allergy sufferers. Apart from offering protection against mould, it is also free of preservatives, totally free of solvents and plasticisers and particularly low on emissions, as confirmed by the natureplus® seal of approval. The hygiene products from Sto also come into their own when surfaces are subject to stringent cleaning requirements. The StoColor Latex interior paint, for example, stays firmly in place on the wall even when surface disinfectants are required.

Feel-good factors

- Mould protection without chemical additives
- Walls that "breathe" – in that they are diffusion-open and absorb moisture (sorption capacity)
- No allergic potential thanks to absence of preservatives
- Solvent- and plasticizer-free, low-emission
- Confirmed by reports and certificates from natureplus® and TÜV
- StoColor Latex is washable and resistant to most common surface disinfectants

Air

We spend over 80 % of our time in indoor environments which we design with colours and textures to enhance our sense of wellbeing. Apart from looking good, the products employed for walls, ceilings and floors should also be free of harmful substances. All products should always be free of solvent and plasticiser content – according to the principle that where there are no harmful substances in the first place, they cannot pose a danger. StoClimasan Color, for example, is the first interior paint to actively clean the room air using normal interior lighting (no sunlight necessary). The cleaning process begins as soon as you switch on the light. Using a photo-catalyst StoClimasan Color breaks down organic substances from the air on a continuous basis, thus eliminating unpleasant odours. The upshot is fresh air and a verifiable improvement in the ambient interior climate!

Feel-good factors

- Improved room air without chemical additives
- Unlimited efficacy
- Solvent- and plasticizer-free
- Especially low on emissions
- Confirmed by numerous reports and certificates

Sound

Visual and acoustic impressions induce moods and feelings and have a special influence on the way we experience our surroundings. A sense of comfort is induced via the senses. This calls for acoustic systems with multifunctional concepts for ceilings and walls which meet all the given aesthetic, acoustic and climatic requirements. The StoSilent Top system, for example, is an acoustics-enhancing, seamless ceiling system with an ultra-fine coating whose perfectly co-ordinated system components guarantee the best possible audibility and optimised reverberation times. StoSilent Top presents a stylish and aesthetic face and enables a virtually smooth and seamless surface finish.

Feel-good factors

- Improved room acoustics
- Reduced reverberation (echo) times
- Ambient interior climate regulated with the StoSilent Cool cooling/heating ceiling system
- No noise
- No air circulation
- Germ-free
- Scope for individual room design with the Sto acoustic systems

In the cold winter months it is particularly important for the design of a building's interior to establish a comfortable indoor climate.

Aesthetics

Colours, textures, surface finishes and materials influence our feelings, our well-being and, in turn, our health and our quality of life. It depends almost exclusively on a room's design whether it appears oppressive or congenial, large or small, light or dark. Sto products offer unlimited means of realising room concepts according to individual preferences and needs. The Linea di calce collection, for example, has been inspired by Mediterranean flair and is modelled on traditional Italian techniques. The textures and surface finishes conjure up a relaxed and harmonious atmosphere reminiscent of a holiday in Tuscany. The natural, lime-based Linea di calce products additionally regulate the ambient interior climate.

Feel-good factors

- The right use of colour is crucial to a genuine sense of well-being
- Textures and surface finishes support architectural styles and the building's environments
- The light conditions inside rooms are the starting point for all design considerations – Sto ensures that everything appears in the right light

Warmth

Cold external walls are the antithesis of home comfort. When the wall's surface temperature is more than 3 °C lower than the ambient room air temperature, the air cools so severely that it drops by more than 0.2 m/sec, giving rise to the impression of a constant draught.
As a general principle, thermal insulation should be applied to the outside of external walls. This is the best means of ensuring an ideal ambient room temperature. In assessing energy efficiency aspects, the building should be considered as a whole, however. The cellar ceiling is often ignored, giving rise to a gap in the building's envelope. Up to 10 % of heating energy may be lost in this way. StoTherm ceiling insulation provides for downward insulation too, in the interests of energy conservation and warm feet.

Feel-good factors

- Sto provides external and internal insulation to ensure the ideal feel-good temperature in buildings
- The StoTherm ceiling insulation additionally provides for warm feet
- Insulation systems are kind on the environment – and kind on your wallet

Safety

High-voltage power lines, satellite, radio, television and mobile phones all generate electric or magnetic fields and emit high-frequency electromagnetic waves. The possibility that this may constitute a hazard for humans is growing increasingly likely. It is thus advisable to take preventive action when designing walling, in order to prevent radiation from entering into the building. Sto-Shield Mesh AES can be used here to provide protection from radiation. Rooms such as bedrooms or children's rooms can be easily shielded in this way. For safety's sake.

Feel-good factors

- Sto-Shield Mesh AES provides reliable protection from electrosmog

A healthy living-environment

No quarter for mould

The indoor air should be exchanged in the proper manner: Ventilate by opening facing windows for 1–5 minutes several times a day or air for 5–10 minutes as an immediate measure.

The microclimate inside and outside of a building is rarely the same. During the cold time of the year in particular, temperature differences of 30 °C and more may prevail between the indoor and outdoor environment. The external walls play an important role here, forming the boundary between these two zones. Incorrect design and usage are likely to give rise to problems.

To prevent moisture from becoming deposited on walls, every room must be adequately heated.

A minimum spacing of 5 cm should be observed between furniture/curtains and walls.

In cases of mould damage caused by defects in a building, the specialists who are called in will renovate the affected area as well as eradicating the underlying defect. Commonly, however, the problem is not water entering into the building from outside but the moisture which occurs inside rooms. Specific measures can be taken here to deprive mould of the conditions it needs in order to flourish.

The right way to ventilate

As a result of showering, washing, cooking, drying laundry as well as plants and other sources of moisture, up to twelve litres of water are released into the room air every day in a three-person household. This moisture should ideally be discharged as it arises, or immediately afterwards. To this end, bedrooms should be aired in the morning, living areas at regular intervals and kitchens and bathrooms directly after moisture arises – and with the doors closed.

The right way to heat

Warm room air is able to absorb more moisture than cold room air at the same level of relative humidity. Heating is thus an effective means of counteracting mould. Rooms which are not in use should also be heated at a minimal level, in order to prevent the walls from becoming cold.

The right interior finish

Floors, walls, ceilings and furniture in living areas are made of diverse materials whose absorption capacity varies enormously. Diffusion-open materials are able to compensate peak moisture levels in rooms, while impermeable surfaces such as tiles, glass, plastics and layers of varnish do not possess this capability. This leads to moist surfaces, providing ideal conditions for mould. Using paints and plasters from Sto's interior silicate programme is an effective means of preventing mould. These products do not contain preservatives or plasticisers. They are tested and approved by the TÜV Technical Control Board and bear the natureplus® seal of approval.

Common causes of mould
• Excessively high air humidity
• Inadequately insulated outside surfaces
• Wrong choice of building materials
• Fungal spores in the air colonise woods, adhesives, gypsum plaster boards, fabrics, paper
• Water damage resulting from leaking roofing or damaged water pipes
• Rising water (stratum water, ground water)
• Incorrect heating or ventilation

A healthy living-environment
Harmful substances and fogging effect

Not just unsightly: The dark grey deposits resulting from the fogging effect also impair the quality of life in the home

Many harmful substances impact on a healthy indoor climate, some also affecting the look of the home. The phenomenon of "black" homes, resulting from the so-called fogging effect or magic dust, has been much talked about since the mid-1990s. What is this exactly, and how can it be avoided? And what is the good of perfectly designed walls, if they give off harmful substances and pollute the room air?

Possible causes of the fogging effect
Plasticisers: These may occur in paints, laminate and PVC flooring, furniture, adhesives, primers.
Causes on buildings: Defects such as cold bridges, cracks and leaks in the masonry.
Incorrect heating: Homes which are not heated sufficiently during the heating period are particularly vulnerable.
Inadequate air humidity: The air humidity should be between 30 and 65 per cent.

Fogging effect

Dark grey deposits often form on the walls of new, refurbished or renovated homes during the first or second heating period. They are typically to be found first and foremost where the most pronounced air movement prevails, such as around radiators, windows and curtains and at spots where the surface temperature is lower than on the ceilings of rooms, for example. These oleaginous coverings usually appear within the space of a few days and consist primarily of deposits of household dust and low-volatility organic compounds – so-called plasticisers. In order to avoid the risk of the fogging effect, paints, plasters, adhesives, primers, furniture, floor coverings etc. containing plasticisers should be avoided, using only physiologically harmless qualities instead. Most Sto products for interiors are low on emissions and free of solvents and plasticisers, thus helping to avoid the fogging effect.

Harmful substances

There's no accounting for taste. But there's no disputing the importance of quality and well-being, either. Interiors free of harmful substances are crucial to such well-being. It is thus important to know that dispersion-based interior coatings break down into three categories: Conventional qualities, solvent-free qualities and TÜV-approved qualities. Conventional qualities contain organic solvents which enter into the room air as the paint dries. These are only used in low-cost coatings to form surface films. Sto offers such coatings for very special applications only. As the name suggests, solvent-free qualities are free of organic solvents on the surface. They may contain low-volatility solvents and plasticisers, however, which will pollute the room air over a very long period. Reason enough for Sto to avoid the use of solvent-free qualities completely. The TÜV-approved qualities (tested and approved by the TÜV Technical Control Board), on the other hand, are low on emissions and totally free of solvent and plasticiser content. They do not contain any of the stated substances or any similar substances. This makes them superior to the similar "Blue Angel" standard, which tolerates residual traces of solvents. Regular checks by the TÜV Technical Control Board confirm the specified quality. Sto thus recommends the TÜV-approved quality standard for interiors products.

Protecting building substance

The right way to insulate and protect interiors

Insulating the cellar ceiling provides for a good energy balance, and ensures warm feet into the bargain.

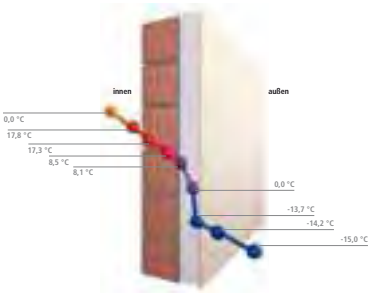
A much discussed yet clear-cut case: Wherever possible, thermal insulation should be installed on the outside of buildings which are in continual use. Lower heating costs, reduced susceptibility to cracking and improved heat storage are the advantages. Equally, the prevention of condensation water protection must also be considered in the context of the correct form of termal insulation.

Thermal insulation

When installing thermal insulation it is important to consider the building as a whole. External insulation is generally chosen whenever possible, as it offers many advantages over internal insulation. External insulation entails a favourable temperature progression, for example. Temperature influences on the masonry are extremely minimal and temperature-induced cracking can be avoided. In addition, no thermal bridges arise, as continuous ceilings or lintels are also insulated. With external insulation, the wall retains its heat storage capacity but does not heat up excessively in the summer. Despite the many advantages of external insulation, internal insulation must not be entirely overlooked. Its usages are not restricted solely to renovation projects, when external insulation is ruled out for space reasons or when the facades of protected historical buildings cannot be altered. The internal insulation of cellar ceilings and the undersides of roofs is actually one of the most important contributory factors to efficient energy conservation. Insulating the cellar ceiling alone can cut energy costs by up to 10 %. Professionally installed insulation also ensures a pleasant temperature for the floor of the living area and prevents the "cold feet syndrome" that occurs when the floor is substantially colder than the warm room air. Internal and external insulation together result in an effective building envelope which provides for a pleasant ambient interior climate and reduces energy costs into the bargain.

Protection from condensation

The formation of condensation water is deemed to be harmless when the key requirements such as thermal insulation and stability are met. Certain conditions need to be met to this end. The water which accumulates inside a building unit during the dew period must be released back into the atmosphere during the evaporation period, for example. On roof and wall constructions a total surface-related condensation water mass of 1.0 kg/m² must not be exceeded. If condensation water occurs at areas of contact with a layer without any capillary water absorption capacity, however, a surface-related condensation water mass of 0.5 kg/m² must not be exceeded. In the case of wood, on the other hand, an increase in the mass-related moisture content of more than 5 %, or of more than 3 % for timber materials, is inadmissible. However lightweight wood-wool boards and laminated lightweight boards are exempted from this stipulation.



Temperature progression in the part of a building with external insulation.

Moisture from outside must not penetrate into the masonry, but moisture inside a building must be allowed to diffuse through the building's envelope and into the outside environment.

Sound protection and room acoustics

A treat for the ears

Canon/Cancom in Jettingen-Scheppach, D (Wolfgang Ott, D: StoSilent Top)

Good room acoustics have a substantial influence on people's well-being, as sound waves act directly on the central nervous system. Acoustic stimuli can improve a persons powers of concentration or provide for relaxation, while noise may have the opposite effect. The growing trend towards the use of sound-reflecting materials in buildings reduces the proportion of absorbent surfaces, making acoustic systems all the more important.

effects of "noise"	
effect	**dB**
vegetative reactions (heart rate, blood pressure etc.)	> 60 dB (A) awake > 30 dB (A) asleep
sleep disorder	> 40 db (A)
concentration disorder	> 55 dB (A) intellectual activity > 70 dB (A) office
hearing disorder (due to noise exposure)	> 130 dB (A) pulse "noise" > 80 dB (A) permanent level

The term "noise" generally denotes disturbing or harmful sound. Disturbing noise causes changes to the vegetative system which are manifested by symptoms such as sleeplessness, lack of concentration or diminished physical and/or mental powers. Harmful noise effects, on the other hand, give rise to impaired hearing, first and foremost in the form of noise-induced hardness of hearing (which is also one of the most common recognised occupational diseases). Both pleasant and disturbing noises are transmitted by sound waves. A distinction is made between airborne and structure-borne sound, defined respectively as fluctuations in air pressure and mechanical vibrations of an elastic medium. The essential difference being that sound is propagated in air in the first instance and in solid matter in the second.

In rooms containing hard and smooth materials, such as metal, glass and marble, sound reflections or reverberation may result in loud and unpleasant acoustics. Sounds become unclear and the spoken word becomes incomprehensible. This is particularly disorientating and unpleasant in rooms full of people. This problem is counteracted by sound absorption, which involves damping sound by converting the impacting sound energy into heat in an open-pored medium, as a result of which it is "swallowed up". Sound insulation, on the other hand, prevents sound waves from spreading through isolating building elements by reflecting the sound back to where it originates from.
Sto acoustic systems and plasters can be used to avoid unpleasant background noise, regulate reverberation times and absorb a major proportion of the sound that arises in rooms.

Disturbing noise is absorbed by several layers in the Sto Acoustic Spray Plasters.

The low weight of products from the StoSilent system makes them ideal for suspended wall and ceiling constructions.

Seals of approval

Guaranteed quality

Quality label	Description
	TÜV Technical Control Board label – "physiologically harmless and production monitored" The corresponding testing and inspection has confirmed that the applicable TUV SÜD test standard is met in full.
	TÜV Technical Control Board label – "low-emission, nonyl phenol-free and production monitored" The corresponding testing and inspection has confirmed that the applicable TUV SÜD test standard is met in full.
	Quality mark for environment-friendly, healthy and functional building products and furnishings in Europe. Certified products must contain at least 85 % renewable and/or mineral raw materials.
	Austrian eco label – a guarantee for environmentally friendly products and services This label is only awarded to such products as are proven to be environment-friendly, to possess adequate suitability for use and to offer an adequate standard of quality.
	The "Blue Angel" label for standard and wood-chip wallpaper Based on ecological and health aspects, taking into consideration the origins of the raw materials, the percentage of recycled paper and the employed materials and substances. The criteria exceed the statutory requirements.
	Physiologically harmless textiles Eco-Tex standard 100 is an eco label for textile and clothing products. It regulates the analysis of harmful substances which are suspect in the context of human ecology.
	Compliance mark Confirms the manufacturer's compliance with the national technical approval and/or the general test certificate issued by the building inspectorate.
	Wissenschaftlich-technische Arbeitsgemeinschaft für Baudenkmalpflege und Altbauerhaltung (Technical/scientific study group for the preservation of historical monuments and old buildings) Products bearing this logo have proven effective for renovation purposes and meet the requirements of the study group's respective specification sheets.
	Protection from electromagnetic fields Products bearing this label afford protection from immediate dangers and are also suitable for preventive measures.

Rules and standards
Statutory requirements

Standard	Description
EN 13300	Interior coating materials
EN ISO 11654	Sound absorbers for use in buildings – Rating of sound absorption
DIN EN 20354	Measurement of sound absorption in a reverberation room
DIN 4102	Fire behaviour of building materials and building components
DIN 4104	Thermal insulation
DIN 4109	Sound protection in building construction
DIN 18041	Audibility in small to medium-sized rooms
DIN 18168	Light ceiling linings and soffits
DIN 18181	Gypsum plaster boarding in building construction
DIN 18182	Accessories for the installation of gypsum plaster boards
DIN 18202	Tolerances in building construction
DIN 18350	Plaster and stucco work, VOB contract regulations, Part C
DIN 18363	Painting and decorating work, VOB contract regulations, Part C
DIN 18558	Organic plasters
VDI 2058-3	Assessment of noise at the workplace
VDI 2569	Sound protection and acoustic design in offices
VDI 3755	Sound insulation and sound absorption of suspended ceilings
ArbSchG	German act on industrial health and safety
ArbStättV	German workplace regulations
Specifications issued by the German federal panel for paint and the protection of material assets (BFS)	
Specification sheet no. 2 issued by the IGG (panel on gypsum plasterboard at the German federal association of the gypsum and gypsum plasterboard industry)	Filling and sealing of gypsum plasterboard/surface qualities
Reference building regulations	
Directive 86 / 188 / EEC	Protection of workers from the risks related to exposure to noise at work

Glossary

Air movement
In closed rooms, air is continually in motion (convection) as a result of warm (light) air rising, e.g. at radiators, and cold (heavy) air falling, e.g. at cold walls. When this air movement exceeds a velocity of 0.2 m/sec it is perceived as an unpleasant draught.

Airborne sound
Airborne sound consists of sound waves which propagate in the air. The opposite is structure-borne sound.

Allergen-containing dust
Allergens can accumulate in household dust. For the most part, these allergens take the form of mites, mite excrement and mould. The mites, which are between 0.1 and 0.5 mm in size, live predominantly in mattresses, carpeting and upholstered furniture. The excrement from these mites is whisked up with the dust and thus enters into the respiratory tracts together with mould spores. This dust triggers allergic reactions in some people.

Building materials classes
Building materials are classified according to their fire behaviour:
A – non-combustible building materials
A1 – no organic content, no verification required
A2 – organic content, verification required
B – combustible building materials
B1 – of limited combustibility
B2 – of normal combustibility
B3 – easily inflammable

Capillary conduction
Capillary conduction involves water being transported in fine capillary conductors to the hydrophilic walls of the capillary tubes as a result of interfacial tension. The forces acting on a capillary and the rate of transportation in a water-filled capillary tube increase strongly as the capillary diameter decreases, whereby the resultant pressure has an adverse effect on the surrounding building materials.

Coefficient of permeability, μ
The coefficient of resistance to water vapour diffusion in accordance with DIN EN ISO 12572: 2001 CDI indicates how many times greater the resistance of a material is in comparison to a layer of stationary air of the same thickness at the same temperature.

Condensation
Condensation forms on walls, ceilings, etc. when the surface temperature of these units is too low or the room air humidity is too high. When condensation forms in rooms a danger of mould and spore formation arises. Points at particular risk are the corners of rooms, fixed-in ceilings, balconies, walls etc. and furniture with large surface areas positioned at outside walls.

Convection
Heat transport due to the flow behaviour of liquids and gases (fluids). Fluids heat up on warm bodies and release heat again on cold bodies. When temperature differences prevail in a room, the air is circulated automatically (free convection). When a uniform temperature is established in a room, the flow stops.

Cavity insulation
Insulation between two walls (load-carrying wall and facing masonry). Mineral wool or polystyrene are generally used as the insulating material.

Dew point/condensation water formation
The dew point is the air temperature at which the relative air humidity attains a value of 100 %. On the humidity level exceeding this limit, precipitation occurs (condensation water).

Direct illumination
Light radiates in one direction straight onto an object, e.g. a table, emphasizing the shape, colouring and texture of the object concerned. A dazzling effect may arise and heavy shadows occur. The brightness distribution is disharmonious and the

depth of space is less apparent. The overall spatial impression is lost.

Energy conservation ordinance (EnEV)
The EnEV is the successor to the thermal insulation ordinance (WSchV). It entered into force on 1 February 2002. The EnEV stipulates the insulation standards for new and existing residential buildings and defines how the primary energy, final energy and heating energy requirements are to be calculated and what limits must be observed.

Fire resistance classes
The fire resistance class indicates how long a building unit will retain its functional effectiveness before succumbing to fire. Customary fire resistance classes are F30, F60, F90, F120 and F180, for example. The identifying letter here stands for walls, ceilings, columns, joists and stairs. The number specifies how many minutes the building unit will retain its function in case of fire. Other identifying letters include T for doors and flaps, G for fire glazing and window elements and L for ventilation ducts and lines.

Fogging effect
Black-grey deposits of household dust and low-volatility organic compounds (plasticisers) on walls and ceilings. They are commonly to be found where the most pronounced air movement prevails, such as around radiators, windows and curtains and at spots where the surface temperature is lower than on the ceilings of rooms, for example.

General perceptions (colour)
Colours influence our feelings, actions and judgements. Although not everyone reacts in the same way to a colour, certain general perceptions can nevertheless be defined for different colours. Red is associated with strength and vitality, for example, while blue communicates constancy, devotion and calm. This knowledge is used in medical therapy as well as interior design, for example. Gentle, calming colours are thus commonly predominant in waiting rooms at doctors' surgeries, while fresh colours can liven up drab factories.

Gloss level
The gloss level of a surface indicates how much light it reflects. The scale ranges from matt to high gloss. Matt surfaces become more glossy, the more they are touched.

Heat conduction
Transfer of kinetic energy (= heat) from one molecule to another. The capacity to conduct heat is dependent on the matter concerned and its structure.

Heat transmission coefficient/ U value
Heat transmission which takes place through every square metre of a building unit of known thickness when the temperature difference between the air on either side of this wall is 1 K (kelvin). The smaller the U value, the better the thermal insulation of a building unit.

Heat transmission loss
Heat loss through solid bodies or building units such as roof, ceilings, cellar, windows and external walls.

Heat transport/heat flow
Flow of thermal energy through a building unit due to a temperature difference from the warm to the cold side (generally from the inside of a building to the outside).

Heating degree days
Measure to calculate the heat consumption of a heating period. Result of the number of heating days multiplied by the difference between mean outside temperature and mean ambient room temperature.

Hydrophobicising
Hydrophobicising (water-repellent finishing) entails treating the surface of a building with a coating or impregnating agent to reduce the building material's capillary absorbency.

Illuminance
Illuminance is defined as the luminous flux which falls on a certain surface from a light source. It is measured in lux (lx). The workplace guidelines recommend various levels of luminous intensity are recommended for rooms and outside areas, according to the type of activity involved.

Indirect illumination
The light is directed solely at reflective wall or ceiling surfaces. No dazzle occurs, as the light source is above eye level and is shielded from the observer. The shadow effect is weak and the luminosity is distributed harmoniously. The spatial effect is retained. Surface textures are barely discernible and highlights are lost.

Mould
Group of lower plants without chlorophyll (fungi). They colonise various materials, forming "mould" on the surface as a visible accumulation of microscopic fruiting structures. They are generally characterised by strong growth, releasing large quantities of spores into the room air. Inside buildings, mould is virtually always attributable to raised moisture levels. These may result from defects such as cold bridges, incorrect thermal insulation or inadequate ventilation. Mould can trigger allergic reactions in the form of runny noses, sore eyes or breathing difficulties.

Organic solvents
Hydrocarbon compounds – see Solvents.

Osmosis
Osmosis provides for the transport of water in building materials when areas of different salt concentrations meet. Water migrates from zones of lower salt concentration to zones of higher salt concentration, in order to equalise the salt concentration.

Perceived temperature
Our skin serves as a continuous heat exchanger. The temperature difference between the surface of the body (skin) and the environment result in a continual loss of body heat. As result of this heat loss, people perceive a temperature which corresponds not to the ambient room air temperature, but to the mean of ambient room air and wall surface temperature.

Plasticisers
Also known as high-boiling solvents. Low-volatility solvents whose boiling point is over 250 °C. They are contained in products such as paints, lacquers, vinyl wallpapers, carpet adhesives, carpets, laminates and insulating foams.

Rated airborne sound attenuation
Measure defined according to DIN 4109 for evaluating sound insulation, frequency-corrected to form a reference curve. With (R'w) or without (Rw) due consideration of side effects.

Reflectance, degree of reflection
Apart from the intensity of the light source, the level of lighting in an interior depends to a substantial extent on the reflectance of the illuminated surfaces. Reflectance is defined as the percentage of the incident light which is reflected by a surface. Dark surfaces reflect only a small proportion of light, while light surfaces are more reflective.

Relative air humidity
Air normally only contains a fraction of the maximum possible moisture. The relative air humidity is equivalent to the water vapour present in the air divided by the maximum possible water vapour mass. It is expressed as a percentage.

Seals of approval
Seals of approval, quality labels or quality marks are graphic or written markings on products which are intended to provide information on the quality of the product concerned and which often possess a special renown. They are also commonly referred to as "test marks" or "marks of conformity". While no strict distinction applies between the various terms, quality labels are intended to define a special utility value or comfort, while test marks

or marks of conformity tend to refer rather to verified compliance with characteristics of relevance to safety. These two areas may also overlap.

Solar energy gains (windows)
Energy gains from solar radiation. Such gains may be taken into account when calculating annual heating requirements in accordance with the energy conservation ordinance (EnEV).

Solvents
Substances which are liquid at room temperature, which evaporate readily and which absorb other substances in fine dispersions. Their boiling point is below 250 °C. The simplest solvent is water. As it is difficult or impossible to dissolve many products in water, organic solvents are used (hydrocarbons). Solvents evaporate during and after application and are taken in via the respiratory tracts and the skin.

Sorption capacity
The capacity to absorb moisture from the air and to release it again at a later juncture.

Sound absorption
The sound in a room is damped when the impacting sound energy is converted into heat in an open-pored medium, as a result of which it is "swallowed up". The employed unit of measure is absorptivity, α_s.

Sound insulation
Prevention of the propagation of sound waves by means of isolating building elements. The majority of the sound is reflected back from the interface concerned to its place of origin. The employed unit of measure is sound attenuation, Rw.

Structure-borne sound
Structure-borne sound consists of sound waves which propagate in a solid body. Vibrations and earthquakes belong to this sound category. The opposite type of sound is airborne sound.

Surface film formation
or surface drying involves the formation of a thin, dry film on the surface of a coating, in contrast to complete drying throughout the entire thickness of the coating. Depending on the mode of hardening of the binder employed for the coating, this surface film forms in less than an hour or over two full days.

Thermal bridge, thermal bridging
Localised points in walls and covers which have a lower level of thermal insulation and a subsequently higher level of heat loss, e.g. window lintels, columns, shutter boxes, corners of buildings, etc.

Thermal conductivity
Specifies the quantity of heat which passes through a surface of a 1 m thick material at a temperature difference of 1 kelvin (1 °C) in steady state. The lower the thermal conductivity, the better the material's insulating effect.

Thermal expansion
Change in length of a fixed building unit as a function of the temperature.

Insulating plaster render
Plaster with lightweight aggregates (e.g. polystyrene pellets, perlite) to increase the thermal insulation.

Thermal radiation
Transport of energy from a warmer to a colder body via the emission and absorption of electromagnetic waves in the non-visible infrared range.

Thermography
Non-contact method to identify thermal bridges on completed buildings using an infrared camera.

Uniform illumination
Rather than directly illuminating an object, such as a table, or indirectly illuminating wall or ceiling surfaces, the entire room is subjected to a uniform level of illuminance, e.g. by means of spherical opal lamps. Such a light setting lacks the highlights which can be achieved with direct illumination, however.

Water absorption coefficient, W
W,24 indicates how many kg of water are absorbed by 1 m² of a building material in 24 hours (DIN EN ISO 15148: 2002 CDI).

Water vapour diffusion
When the gaseous water molecules (water vapour) contained in the air migrate (diffuse) in the direction of lower vapour pressure, e.g. from the humid room air through building units to the dry outside air, this is referred to as water vapour diffusion.

Whiteness
The degree of whiteness defines a surface's remission capacity (diffuse, omnidirectional reflection of light waves in particular). It is ascertained after conversion according to various formulae, such as whiteness according to Berger, whiteness according to CIE or whiteness according to DIN 6167. The richer the colour of a paint, the less important the whiteness becomes.

Workplace guidelines
Workplace guidelines contain exact definitions, interpretations and explanations of certain legal terms in the German workplace regulations. These in turn form part of the German act on industrial health and safety, implementing EU regulations on industrial health and safety.

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