

TROLDTEKT®
NATURAL
ACOUSTIC
SOLUTIONS

In this magazine you will find 20 buildings where the combination of design and acoustics creates first class international architecture.

TREND

04-05 A celebration of wood wool/
Interview with David Basulto

CULTURE

06-07 Close to nature and a play of colours
08-09 An urban transformation
10-11 Light and airy masterpiece

OFFICE BUILDINGS & SHOPS

12-13 The colourful circle in Jutland
14-15 House of knowledge in Sonderburg
16-17 Vision is created on Paper Island

HOUSING & PRIVATE HOMES

18-19 Urban renewal with solid materials
20-21 Colourful living

HOTELS & RESTAURANTS

22-23 Dining in the tower of power
24-25 A new Nordic welcome to the travellers
26-29 NOMA went down under for 10 weeks
30-31 Wine, wine, wine!

HEALTH & CARE

32-35 The healing power of good architecture

SPORT

36-37 Active holidays without barriers
38-41 Water and wellness in the calm
42-43 The sports hall is where people meet

SCHOOLS & EDUCATIONAL BUILDINGS

44-45 A bright new town within the town
46-47 Science in a circular setting

CHILDREN & YOUTH

48-49 Children's home of the future
50-51 A place for children of all ages

DESIGN SOLUTIONS

52-54 Good acoustics with a vibrant design

1. edition
October 2016

Publisher:
Troldekt A/S
Sletvej 2A
DK - 8310 Tranbjerg J
info@troldekt.dk

Editors:
Tina Snedker Kristensen
Publico

Photo:
Tommy Kosior
Force4 Architects
Thomas Mølviq
Helene Høyer Mikkelsen
Lendlease
Martin Schubert
Mikkel Frost
Jens Markus Lindhe
Torben Eskerod

Text:
Force4 Architects
Thomas Mølviq
Helene Høyer Mikkelsen
Christopher Sykes, Pressential LLP
Olaf Wiechers
Publico

Layout:
Tommy Kosior
INEO



MIX
Paper from
responsible sources
FSC® C041505

CLIMATE
COMPENSATED
PAPER



INSPIRATION

TROLDTEKT®

NATURAL

ACOUSTIC

SOLUTIONS

Working, learning, dining, living... No matter what purpose a building serves, the architectural quality, good acoustics and healthy indoor climate contribute to the best possible user experience.

This magazine introduces you to a range of different projects which have Troldekt acoustic solutions. These range from educational institutions and sports halls to world famous restaurants which contain some of the most extraordinary interiors imaginable.

On the following pages, you will also meet David Basulto, architect, chief editor and co-founder of ArchDaily, the world's most visited architecture website. He shares his thoughts on current trends in international building design.

Enjoy the inspirational tour!



A celebration of wood wool

Troldtekt A/S launched the WOOD WOOL AWARD in 2015, celebrating 80 years of the acoustic product Troldtekt. The purpose was to celebrate the use of wood wool in contemporary architecture.

Wood wool is a natural material which ensures good acoustics, a healthy indoor climate and unique aesthetics. The purpose of the WOOD WOOL AWARD 2015 was to honour contemporary architecture where wood wool based acoustic solutions support and enrich the architectural design.

The competition was open to architects and designers from all over the world, who were invited to submit one or more of their own projects with visible wood wool acoustic solutions. There was no requirement regarding the building's character or the manufacturer of the wood wool solution, but the project had to have been completed in 2012 or later.

The jury panel comprised three internationally renowned architects: Mikkel Frost, Co-founder and Partner at CEBRA A/S (DK), David Basulto, Co-founder and Editor in Chief at ArchDaily (CHL), and David Gianotten, Managing Partner-Architect at OMA (NL).



Raw natural materials create warmth and intimacy

David Basulto is an architect, chief editor and co-founder of the world's most visited architecture website, ArchDaily.com. Read his thoughts on current trends in international building design.

What trend in the choice of materials in architecture would you particularly highlight?

An interesting trend is the use of local materials, in a raw state. This is perhaps less known in developed countries, but in other contexts the use of raw materials – wood, artisanal brick, stone – that come from a nearby forest or quarry has led to an interesting aesthetic that inspires architects in other countries.

An example is the use of bricks in Paraguay by architects such as Solano Benítez or Javier Corvalán.

What impact can the choice of materials have on a building's expression?

Continuing with the raw state of materials, by combining them with building products you can achieve more warm interiors that

still maintain this raw aesthetics, but without appearing nude or uncomfortable.

An example is the cultural centre that recently won the WOOD WOOL AWARD. Here, the use of wood wool turns a space that is very raw into a comfortable space for its users.

Function and aesthetics – do architects want to combine these two factors?

It is easy to lose focus when specifying materials to comply with certain requirements – technical, energy, etc. You can end up with a mix that does not have a character. And this is an important challenge for architects. The real “less is more”-issue.

It is all about how to get a material to stay true to its function while being an element of the building's aesthetics. Take a



Winners of the WOOD WOOL AWARD 2015

A beautifully located nature and culture facility – and a modernised sports centre. These two buildings in Denmark and Germany were chosen as the winning entries for the WOOD WOOL AWARD 2015.

Force4 Architects in Copenhagen won in the category 'Manufactured by Troldekt' with the new nature and culture facility in Krik, on the north-west coast of Jutland.

The materials inside have been carefully selected. In respect for the natural beauty of the outside areas the space is kept as minimalistic as the exterior building. The Troldekt panels provide the room with not only great acoustic performance, but also a simple and natural interior cladding.

Force4 Architect's nature and cultural centre in Krik was one of the two winning projects in the WOOD WOOL AWARD 2015.

4a Architekten GmbH in Stuttgart won in the category 'Other manufacturer'. Their winning entry was a refurbished Sports Centre in Leonberg.

This project proves the durability of wood wool panels and the suitability of the material for use in sports halls and wet areas such as swimming pools. Furthermore, the wood wool panels in multiple colours are used not only as acoustic wall and ceiling cladding but also serve as decorative elements and direction finders.

ceiling for example that has to deal with installations, sound-proofing and acoustics. How can you achieve all these requirements in the simplest way possible?

How is the current focus on sustainability impacting on the choice of materials?

We are becoming more aware of our footprint, and with the amount of waste we see in the world we as architects are becoming more aware of the life cycle of our buildings.

If we can reduce this, by the scale of our work, we can surely have a positive and measurable impact in the environment. That is why choosing materials that have a low impact, that can help a building to perform better, or that are recycled, is crucial today.



David Basulto

David Basulto is an architect and chief editor and co-founder of ArchDaily, the world's most visited architecture website. Visit www.ArchDaily.com.



Close to nature and a play of colours

The building's design and surfaces are modern yet it fits perfectly within its surroundings. Welcome to the nature and cultural centre in Krik.

Text and photos: Force4 Architects

The cultural centre stands as a landmark within the wind-swept landscape and functions as a base in which to enjoy and explore the raw and beautiful nature of the area. It provides new life and cultural opportunities to the Fjord and the town, inviting everyone to experience its beauty.

When the Centre was built, it was essential to acknowledge the context of the rural landscape of Thy National Park. The architecture is directly inspired by the old barns and warehouses that existed throughout the area many years ago.



A flexible interior space

The Krik building is formed as a reinterpretation of the simple and traditional pitched roof house. The majority of the building comprises a single large common open space that spans the entire length of the house. There is a centrally placed fireplace and an open kitchen. Each end has a section with changing room, bath and toilet.

From the large common room there is access to the bed loft. In a simple way, the interior space is flexible, well suited for different cultural events and can be used for smaller groups such as windsurfers, school classes or other visitors to Thy National Park.

The materials inside have been carefully selected. In respect for the natural beauty of the outside areas the space is kept as minimalistic as the exterior building. The material choice thereby represents a simple consistency and leaves space for the real attraction - the view. ■

Project: New nature and cultural centre in Krik, Denmark

Architects: Force4 Architects

Client: Thisted Municipality

Awards: Winner of the Wood Wool Award 2015 in the category "Manufactured by Troldekt"

Troldekt products:

Ceiling and wall panels: Troldekt acoustic panels

Colours: Painted white 101

Structure: Ultrafine (1.0 mm wood wool)

Edge design: Square edges, K0-N, installed with concealed KN-brackets





An urban transformation

The new main library is an intellectual oasis which appeals to all ages. Situated on the outskirts of town, Herning's old library had a very low profile. After 40 years, the building was also in need of refurbishment.

Text and photos: Thomas Mølvig, architect MAA

It therefore made sense to shift all the library's activities into the town centre, while at the same time rethinking its functions.

Instead of building new, the town council commissioned a team of creative architects to transform a run-down commercial property on the main pedestrian shopping street into a visionary cultural centre. Consequently, the original building was stripped down completely, so that only the supporting

concrete structures and decking remained. At the same time, several large square openings were created between the ground floor and the basement to let in more light and add volume to the rooms.

The result is a very successful library and meeting venue, which has been extremely popular from day one. Today, the building has been transformed. The facades have been opened up towards the surroundings through the use of large window



sections, and together with horizontal bands made from rusted Corten steel, they give the building a strong visual identity. In front of the entrance facade, a small square has been created, which is often used for markets and other activities.

Raw construction – refined interior

The building has four floors in all, which are beautifully linked by a circular staircase with an elegant wood finish. The atmosphere in the library is created by the informal interior and the solidity of the building. There are no formal service desks, and there is a relaxed air so people do not feel that they have to talk in muted tones. The street-level ground floor is like a public urban space, where anything can happen, and where everyone should feel welcome. However, this has called for careful acoustic regulation, which has been solved by partially cladding the ceilings with ultrafine-structure Troldekt panels which harmonise well with the

other materials. Thanks to a large skylight, there is plenty of daylight in the middle of the building, which creates a sort of centre. A wide ‘sitting stairway’ has been established where visitors can sit and read, and which also leads down to Dybet – The Deep – where 90 per cent of the library’s collections and materials are kept, while the first floor has a number of flexible rooms of varying sizes which can be used for meetings, studies and talks. The top floor houses the administration, boasting spectacular views of the town. ■

Project: Transformation of run-down commercial building into a new library at Herning Denmark

Architects: Kristian H. Nielsen & GPP architects

Client: Municipality of Herning

Awards: Winner of the Danish Retrofit Award, 2015

Troldekt products:

Ceiling panels: Troldekt acoustic panels

Colour: Natural grey

Structure: Ultrafine (1.0 mm wood wool)

Edge design: 5 mm bevelled edges, K5, installed with Troldekt screws





Light and airy masterpiece

This small art pavilion sits like a white sculpture in green surroundings, beautifully reflected in the waters of the lake. The trees, the water and the elegant building create a sublime scene of mutually supportive elements.

Text and photos: Thomas Mølvig, architect MAA

Here, in this remote region where he grew up, the Danish, world-renowned architect Henning Larsen created a discreet masterpiece.

Videbaek is a small town between Herning and Ringkoe-

bing in west Jutland. Several years ago, a number of local enthusiasts set their minds to raising the necessary funds to establish a flexible exhibition venue in the town park. The purpose would be a dynamic and vibrant place for contem-



porary art and local art rooted in west Jutland which and also be suitable for talks and concerts. Henning Larsen became involved and after a 5-year planning and construction period the art pavilion opened.

Architect Mikkel Hune MAA from Henning Larsen Architects says, "The exhibition venue has been conceived as a light and airy garden pavilion with simple details and informality. The open and transparent facade envelops the exhibition space, the café and the terrace which floats above the surface of the water. The ceiling is like a square-shaped cover for both the interior and exterior spaces."

Mikkel Hune continues: "Troldekt was chosen as it is a ceiling material which can be used both indoors and out while solving acoustic issues in one fell swoop with a uniform, demountable surface. The art pavilion is run by volunteers on a modest budget and hence robust and maintenance-free solutions were therefore called for". ■

Project: Art Pavilion Videbaek, Denmark
Architects: Henning Larsen Architects
Client: Vestjyllands Kunstpavillon Videbaek

Troldekt products:

Ceiling panels: Troldekt acoustic panels

Colour: Painted white 101

Structure: Fine (1.5 mm wood wool)

Edge design: 5 mm bevelled edges, K5, installed with Troldekt screws



The colourful circle in Jutland

The Innovest complex rises dramatically above the flat Danish countryside of the region west Jutland like an enormous circular sculpture in shades of red, orange and yellow.

Text and photos: Helene Høyer Mikkelsen, architect MAA

The building is inspired by the nearby heathland, the river Skjern Å and the flourishing business community in the area. Its soft organic form unfolds into a building on four levels, while a full height atrium welcomes visitors and gives a good impression of its character.

The building is home to entrepreneurs, businesses, the University Extension and facilities such as meeting rooms, an auditorium and a canteen. In addition to offices, the utility company Ringkøbing-Skjern Forsyning A/S (which supplies water, wastewater, street lighting and bioenergy) also has warehousing and stores for equip-

ment. The aim of having such a wide range of functions is to create synergies between the various occupants.

It's interesting to discover how in many ways the natural environment has been incorporated into the design, influencing the building's sustainability, shape and what it contains. For example, parts of the roof are planted with locally growing flora while the atrium features a water-pool as well as a stunning plant wall which rises up alongside the main stairway. Bamboo has also been used for the stairs and vertical wood strips on the walls around the building, which is currently being certified by the German Sustainable Building Council (DGNB).



Troldtekt, which is manufactured in Troldhede, not far from Innovest in Skjern, has been used on all the ceilings. For example, in the central part of the curved office areas, black Troldtekt has been juxtaposed with white to create a striking contrast. For Peter Refsgaard Iversen, an architect at Aarstiderne Arkitekter, it was important that the indoor environment would be characterised by tactile materials such as this. The curved corridors are characterised by a dynamic sense of space, while the wood strips, glass walls, concrete floors and Troldtekt ceilings combine to create a stunning and harmonious look. ■

Project: New headquarter for Innovest in Skjern, Denmark
Architects: Aarstiderne Arkitekter
Client: Ringkøbing-Skjern Forsyning A/S

Troldtekt products:

Ceiling panels: Troldtekt Plus acoustic panels

Colours: Painted white 101

Structure: Fine (1.5 mm wood wool)

Edge design: Square edges, K0, installed with Troldtekt screws



House of knowledge in Sonderburg

150 years ago, the countryside west of Sonderburg in Denmark was the scene of the famous Battle of Dybbol. Today, the city is far more peaceful and the entire harbour front is changing character into a thriving urban district.

Text and photos: Thomas Mølvig, architect MAA

The world-renowned American architect Frank Gehry has designed a grand master plan for the city's 'face' on the waterside. Together with commercial and residential property, it includes a hotel, cultural centre, parks and much else. Several different consortia are involved in the development but all the designs are based on Gehry's idea of expressive, staggered buildings.

Office C is a building designed by Schmidt Hammer Lassen architects which stands right on the water's edge. The facades are clad with 2,800 square metres of bronzed aluminium cassettes which project a special golden hue and distinguish the building from its surroundings.

The interior is tasteful and simple with an inner atrium which is not large but feels generous because of its high ceilings. Here, Troldekt natural wood acoustic panels with fine structure have been used on the sides of the balconies as well as on ceilings throughout the building, ensuring a pleasant acoustic environment that complements the exclusive architecture.

Office C has five tenanted offices which all share a joint reception, canteen and various meeting rooms at ground floor level. The roof terrace is also shared and from there are spectacular views across the city, including a glimpse in the distance of the 1864 wartime entrenchments. ■

Project: New office building at the waterfront in Sonderburg, Denmark

Architects: Schmidt hammer lassen architects

Client: BMC AE A/S

Troldekt products:

Ceilings and wall panels: Troldekt acoustic panels and Troldekt Plus panels

Colour: Natural wood

Structure: Fine (1.5 mm wood wool)

Edge design: 5 mm bevelled edges, K5, installed with Troldekt screws and K5-FN, installed with concealed T-profiles





Vision is created on Paper Island

COBE is one of Denmark's most successful firms of architects, making a name for themselves with a string of impressive projects. The creative ideas unfold in an informal atmosphere.

Text and photos: Thomas Mølvig, architect MAA

In February 2016, COBE won the competition to draw up a master plan for a completely new district on Paper Island in Copenhagen.

By coincidence, it is also the place on the harbour front where the company has established itself in a large and basic warehouse, just opposite the Royal Danish Playhouse and a stone's throw from the Opera House.

Paper Island, actually called Christiansholm, was where for many years the Procurement Association of the Danish Press kept its large stocks of gigantic paper rolls in vast storage halls closed off to the public. It all changed radically in 2013 when the paper storage facility was shut down and the island was taken over by enterprising people, creating a plethora of cafés, designers, Copenhagen Street Food, showrooms and innovative businesses of all kinds.

It stands to reason that an architectural practice like COBE flourishes best in a space which is designed for intensive use. Here, there are no carpets, rugs or tasteful art adorning the walls. Instead, an air of informality pervades the building which is more reminiscent of an artist's studio or workshop. In the basement, there is a canteen and exhibition, while the impressive army of employees occupy open plan spaces on the first floor. Various areas and meeting rooms are screened off with glass walls.

The grey concrete walls are completely bare and untreated and together with the white-painted Troldekt panels create an atmospheric setting for drawing office activities. Here, an important part of Copenhagen's future is being developed and in a few years time Paper Island will be one of the biggest attractions in the capital. ■

Project: Office, COBE Architects, Paper Island, Copenhagen, Denmark

Architects: COBE Architects

Troldekt products:

Ceiling panels: Troldekt acoustic panels

Colour: Painted white 101

Structure: Coarse (3.0 mm wood wool)

Edge design: Square edges, K0, installed with Troldekt screws





Urban renewal with solid materials

The upgrading of the entire Loevvangen estate in Noerresundby, near Aalborg in Denmark, is North Jutland's biggest residential renovation project. Here, the monotonous architecture of 815 flats has been improved and given an inspiring new identity.

Text and photos: Helene Høyer Mikkelsen, architect MAA

The residents moving back have found it both exciting and almost hard to recognise their old homes.

The buildings have been given a new, well-insulated brick exterior and varied window designs that add depth to the facade. All the popular and well-used balconies have been extended and enclosed in glass, with their ceilings clad in Troldekt acoustic panels, as are the soffits of the access walkways. The panels not only greatly improve the acoustics but, being a robust material, add a very attractive textured finish to the flats, while dark bricks enhance the overall architecture and appearance of the housing estate.

The green areas between the buildings have also been revamped, with new pathways laid. At the end of one path lies Loevvangen's new communal building, .

The communal building, welfare facilities and a garage are situated around a courtyard area which is designed for communal activities. Its dynamic design houses a café, residential-social taskforce and other facilities. Unlike the resi-

dential buildings, the communal building is clad in wood, which lends a completely different feel and separation from the rest of the development. Here, Troldekt panels have also been specified for all the ceilings in the three buildings around this outdoor area, ensuring good acoustics, warmth and inviting interiors. ■

Project: Retrofitting of 815 residential units, Loevvangen, Noerresundby, Denmark

Architects: Kærsgaard & Andersen A/S

Client: Sundby-Hvorup Boligselskab, afd. 12

Troldekt products:

Ceilings: Troldekt acoustic panels

Colour: Painted white 101

Structure: Ultrafine (1.0 mm wood wool)

Edge design: 5 mm bevelled edges, K5, installed with Troldekt screws



Colourful living

Aesthetics and an inviting feel are the stunning features in the main atrium, from where residents access their flats. Welcome to the housing association Ringgården's youth housing project at the port of Aarhus.

Text: Helene Høyer Mikkelsen, architect MAA
Photos: Helene Høyer Mikkelsen & Martin Schubert

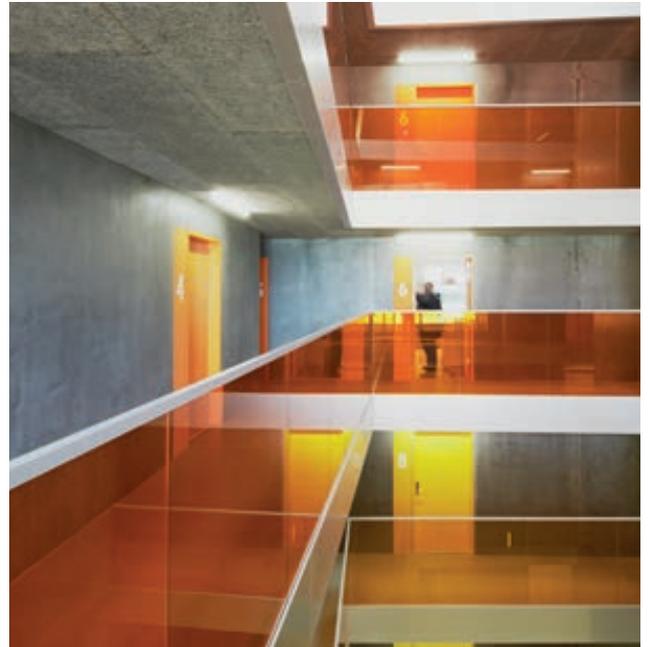
With supreme precision, a space has been designed where the colours on the glass panels are graded and change to create a highly attractive area quite unlike the shaft-like access areas of many apartment blocks.

The six storey block is, in many ways, tailored to the port environment, designed with concrete facades and for minimum energy consumption. However, its location has also inspired a design which is packed with contrasts and asymmetry. Two striking features are the angled cut-outs on the roof and the large corner communal balcony halfway up, emphasised in bright red. Red is also used for the personal lockers in the entrance which leads into the atrium and the communal kitchen on the ground floor.

Full of contrasts and a sense of dynamism

Peter Dalsgaard, architect with Cubo Arkitekter A/S, expresses his thoughts on the atrium. "We wanted to create something which offers an experience full of contrasts in relation to the exterior and a very pleasant and attractive space."

Here, shapes, colours, light and sound are all important elements. With its distinctive colours, the space is infused with a fine sense of dynamism seldom seen in atria. The light floods in at ground floor level, from skylights above and also from the balcony on the third floor. The acoustics are subdued because the ceilings are lined with Troldekt, which prevents long reverberation times and thereby ensures a calm and friendly atmosphere. The grey Troldekt panels also add a textural quality, contrasting well with the coloured glass panels. ■



Project: New student housing, Vulkanen, at Aarhus Harbour, Denmark
Architects: Cubo Arkitekter A/S and Terroir ApS
Client: Boligforeningen Ringgården
Awards: Aarhus Municipality Architecture Award 2013, Australian Award for International Architecture, Residential architecture 2015

Troldekt products:

Ceiling panels: Troldekt acoustic panels
Colour: Natural grey
Structure: Fine (1.5 mm wood wool)
Edge design: Square edges, K0, installed with Troldekt screws



Dining in the tower of power

Christiansborg Palace in the heart of Copenhagen is an imposing building and a symbol of absolute power. It is the centre of democracy, housing the Folketing (Danish parliament), the Prime Minister's Office and the Supreme Court.

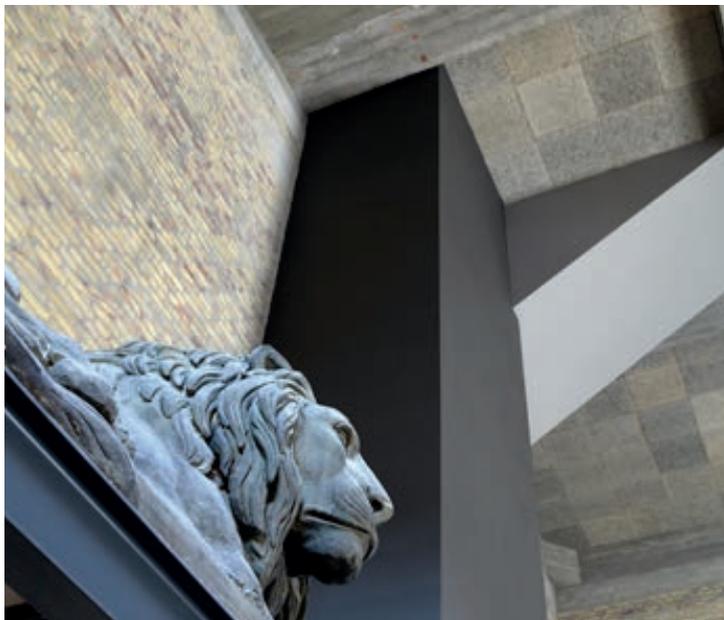
Text and photos: Thomas Mølvig, architect MAA

The previous Palace burnt down in 1884 and the current building was built between 1906-1918. The 106 metre tall central tower is Copenhagen's highest point and an indispensable part of the city's beautiful skyline.

The tower exterior was renovated by 2009, when the copper cladding was replaced and part of the basic concrete structure repaired where it was heavily corroded. During the restoration, architects Henrik Levinsen and Dorthe Andersen became aware of the potential for the large tower room. This amazing space has an 11 metre high ceiling and was used to store statues, historical architectural models and gigantic lion figures, all layered with years of dust.

Mogens Lykketoft, the speaker of the Folketing, became enthusiastic about the architects' discovery and the idea that it might be possible to establish a public restaurant in the tower. Consequently, the financial resources were allocated and the major task of transforming the room, ready for its new role, commenced. The project faced many technical challenges and workmen had to meet stringent controls to minimise disruption to the Parliament.

In June 2014, Taarnet opened as an extremely popular restaurant for 100 diners with renowned chef Rasmus Bo



Bojesen in charge. It also provides free access to a viewing platform offering panoramic views of Copenhagen's rooftops. In clear weather, Sweden can just be seen in the distance.

About 130 sqm of Troldekt 60 x 60cm panels in natural grey with coarse structure have been used on the ceiling to improve acoustics and reverberation from the hard walls and noise from the diners. ■

Project: Restaurant Taarnet in the tower of the Danish Parliament building, Copenhagen, Denmark

Architects: Henrik Levinsen and Dorthe Andersen, Folketinget's Administration

Client: The Danish Folketing

Troldekt products:

Ceiling panels: Troldekt acoustic panels

Colour: Natural grey

Structure: Coarse (3.0 mm wool wool)

Edge design: Square edges, K0, installed with Troldekt screws



A new Nordic welcome to the travellers

The international airport at Aalborg is both a commercial success and an architectural gem. Now, a stylish and modern hotel has been built adjacent to the elongated terminal building.

Text and photos: Thomas Mølvig, architect MAA

Bühlmann Airport Hotel is part of the Familien Bühlmann group which comprises four hotels in north and west Jutland. Each hotel is different, with its own distinguishing features and characteristics.

At Aalborg, the pale grey building rises like a rectilinear sculpture from the car park area. The vertical window sections emphasise the building's height and contribute a dramatic effect, especially when darkness falls and the hotel is lit up from within. The concrete facades are constructed with a subtle plank texture which adds character to their large expanse. This simple yet fine detail makes the building more welcoming while adding a touch of exclusivity.

The hotel foyer is divided into three interconnected areas comprising reception, breakfast café and lounge. The style is pure 'new Nordic' with a pleasant relaxed feel. The rough plank effect is repeated on the concrete wall in the lounge, creating an appealing raw look. Together with the uninterrupted fine structure Troldekt acoustic ceilings and the grey-black floor, a sense of unity is created throughout the entire ground floor.

The hotel offers a total of 64 double rooms at reasonable prices and there are already plans to expand the capacity with an additional 52 rooms. It is also possible to book offices on a daily, weekly or monthly basis, something not previously seen at hotels in Denmark. ■

Project: New Airport Hotel, Aalborg, Denmark
Architects: Bjørk & Maigaard ApS
Interior design: Designbrokers/Danielsen Arkitekter
Client: The Bühlmann family

Troldekt products:

Ceiling panels: Troldekt acoustic panels

Colour: Natural wood

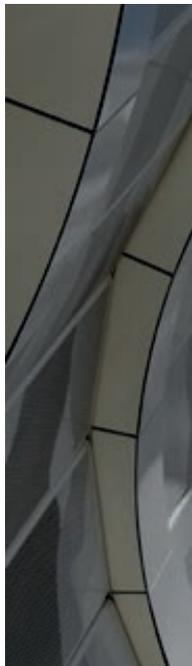
Structure: Fine (1.5 mm wood wool)

Edge design: 5 mm bevelled edges, K5-FN, installed with concealed T-profiles





AALBORG AIRPORT HOTEL
FAMILIEN BÜHLMANN



NOMA went down under for 10 weeks

The NOMA Pop-up Restaurant at Barangaroo near Sydney in Australia was most unusual - unusual because it was designed to operate only 10 weeks, just like another temporary one which popped-up for a short time in Tokyo.

Text: Christopher Sykes, Presential LLP
Photos: Lendlease

It was the initiative of famous Chef René Redzepi and his Danish team, designed and built in a few months by the Australian Design and Planning collaboration, lead by Lendlease and principal architect Darren Kindrachuk.

The restaurant covered about 500 sqm including the main kitchen, serveries and the dining area as well as an out-

door preparation space and guest lounge. With space for only 56 diners, 27,000 disappointed visitors were left on the waiting-list!

The idea of the restaurant was to interpret NOMA's bespoke culinary creations and give them a unique Australian identity. References to elements of the Australian landscape,



as well as René's in-depth investigation and sourcing of natural Australian ingredients, also provided the foundation for the underlying design theme of Land and Water. Materially, Land was interpreted by the use of rammed earth, charred/charcoal surfaces and dark colour selections, deep within the restaurant. The notion of Water was suggested in the control of natural light and shadows, glass surfaces and spatial volume expressed on the frontages of the restaurant.

References to NOMA Copenhagen and the Danish origins of the restaurant and its Chef were subtly incorporated in the restaurant design. In this context, the review of materials and furnishings included only a limited number of selected Danish sourced options, chosen for their outstanding quality, performance and aesthetics. For example, the dining furniture was designed by Carl Hansen while the ceilings were lined with acoustic panels from Trolldtekt, widely specified in Denmark and worldwide to reduce noise and create a quiet and peaceful environment. ■

Project: NOMA's 10 week's pop-up restaurant, Barangoo, Australia

Architects: Lendlease

Client: NOMA restaurant, Australia

Trolldtekt products:

Ceiling and wall panels: Trolldtekt acoustic panels

Colour: Painted black 207

Structure: Ultrafine (1.0 mm wood wool)

Edge design: 5 mm bevelled edges, K5, installed with Trolldtekt screws



POP-UP FACTS:

- 4:** times Noma has won the title of World's Best Restaurant
- 5:** world ranking Noma currently holds
- 10:** weeks Rene Redzepi and crew fed Australia
- 75:** Noma staff members making the nearly 16,000 km trip
- 56:** seats in the pop-up restaurant
- 10 to 12:** courses served per meal
- 5,600:** total number of seats available for the pop-up duration
- 90:** seconds it took for reservations to book up entirely
- 27,000:** people were left out wanting a reservation
- 485:** Australian dollars per person for a seat (approximately \$339 USD)
- 2.7 million:** estimated Australian dollars paid up front for all reservations





Wine, wine, wine!

S'vinbar is located on a corner opposite the former monastery in Aarhus. A delightful sun-drenched spot where people bump into each other on foot or bicycle.

Text and Photos: Helene Høyer Mikkelsen, architect MAA



The chairs are taken outside when the weather is fine, or you can watch the world pass by through the large windows that overlook both streets.

S'vinbar only serves wine, but from an impressive wine list. While the wine is the main focus, the venue also has a great atmosphere for socialising. Wine and glasses also dominate the interior, and stand out in the otherwise rustic interior.

The black Troldekt acoustic ceiling panels also contribute to the convivial atmosphere in the wine bar. Perhaps you'll have an extra glass after all! ■

Project: New shop and wine bar in historic building in the city of Aarhus, Denmark

Client: S'vinbar

Troldekt products:

Ceiling panels: Troldekt acoustic panels

Structure: Ultrafine (1.0 mm wood wool)

Colour: Painted black 207

Edge design: 5 mm bevelled edges, K5, installed with Troldekt structure screws



The healing power of good architecture

The very detailed planning process for the psychiatric regional hospital in Slagelse was characterised by innovation and a desire to construct a first class complex which supports care and recovery. The building now holds a DGNB certificate.

Text and photos: Helene Høyer Mikkelsen, architect MAA

The materials used are solid and familiar, such as brick, wood, concrete and cement-bonded wood wool. Troldekt ceiling panels in natural wood have been used throughout most of the complex, ensuring good and pleasant acoustics as well as a healthy indoor climate. New LED light fittings are neatly incorporated into the ceiling surface while about half of the hospital has been fitted with Troldekt ventilation with natural ventilation in the remainder. In ceilings with no ventilation fittings, the surface appears calm and very elegant.

The varied textured finishes of the materials establish an engaging feeling, while the colours, carefully chosen by the Danish artist Malene Landgreen, successfully enhance and interest the senses of the occupants. The building has been certified by the German Sustainable Building Council (DGNB), attaining the silver level. ■





Project: New psychiatric hospital, GAPS, Slagelse, Denmark
Architects: Karlsson Arkitekter/VLA i/s
Client: Region Zealand
Awards: WAN Award "Health" 2016 Shortlist, World Architecture Festival 2016 "Health" Finalist

Troldtekt products:

Ceiling panels: Troldtekt ventilation
Colour: Natural wood
Structure: Fine (1.5 mm wood wool)
Edge design: 5 mm bevelled edges and rebate and groove, K5-FN, installed in concealed T profiles





Project: New sports and holiday resort for people with disabilities, Musholm, Slagelse, Denmark

Architects: AART architects

Client: Danish Muscular Dystrophy Foundation

Awards: WAN Award "Sport in Architecture" 2016
Shortlist, A+Awards "Recreation Centers" 2016 Special Mention

Troldtekt products:

Ceiling panels: Troldtekt Plus panels clad with wood strips

Colour: Painted white 101

Structure: Fine (1.5 mm wood wool)

Edge design: Square edges, K0, installed with Troldtekt screws

Active holidays without barriers

The Musholm Bay Holiday Resort in Denmark is a rare example of the perfect harmony which can be achieved between architecture and its surrounding landscape. The place is also recognized as one of the most innovative holiday resorts for people with disabilities.

Text and photos: Thomas Mølvig, architect MAA

The latest addition, designed by AART architects, sets new standards for sporting facilities combined with accessibility and spatial harmony. Because it is constructed in concrete and clad in zinc and larch wood, the structure will age and patinate beautifully in silver-grey shades.

From the main entrance, you either walk towards the restaurant and the residential units, which face the coast, or turn right towards the new circular multi-purpose hall. The first large room on the ground floor is also suitable for conferences or performances of different types. A gently inclining ramp around the perimeter of the building provides access to the upper levels. The very large sports hall, which can be divided with folding partitions, has climbing facilities, a zip wire and equipment for all kinds of sporting activities.

Large square skylights allow natural daylight to flood into the hall where the architects deliberately chose a very distinctive design for the suspended Troldekt acoustic ceilings. These create an undulating landscape, broken with straight patterns formed by solid wood beams. In addition, the lighting is beautifully integrated with the rest of the architecture – an altogether elegant solution which is pleasing to the eyes and the ears.

The design of the multi-purpose hall has been recognised internationally. The project was exhibited at the Architecture Biennale 2016 in Venice and nominated for the WAN Sport in Architecture Award 2016. It was built with funding from the Danish Labour Market Holiday Fund, Realdania, the A.P. Møller Foundation, the Municipality of Slagelse and the Danish Muscular Dystrophy Foundation. ■



Water and wellness in the calm

Gigantium is a sports and event centre in Aalborg which certainly lives up to its name, having a floor area of nearly 34,000 sqm. It comprises a very large swimming pool complex together with skating rinks, sports hall and concert venue.

Text and photos: Thomas Mølvig, architect MAA

Designed by architects Kjaer & Richter, the exterior is clad in aluminium composite boards which give the building a beautiful finish, reflecting the colour of the sky and enhancing its wave-like shape. The curving facade is a strong and easily recognisable visual element, providing the Gigantium complex with a dramatic face to the world which emphasises its role as a venue for sports and games.

The swimming pool is divided into two sections. The first section backs onto the skating rink and the new foyer where it houses all the pool's service functions such as ticket sales, café, changing rooms and wellness suite. The other section embraces the four main pools, three of which are situated under the all-embracing roof, and has views of the landscape to the south and east.

An overview of the entire pool

Elsewhere is a family sauna constructed from attractive in-situ cast concrete and which has a view of the entire hall. Wellness is on the top floor with spas, sauna, steam baths and cold tubs. This floor also houses conference rooms with space for large parties.

The daily manager of the swimming pool – Morten Hvilsum Larsen – is thrilled with his new sports centre. “Our lifeguards enjoy working in this beautiful building where a lot has been done to provide a good overview of the entire pool area. In the old days, acoustics were often a problem in swimming pools but fortunately we now have Troldekt cement bonded wood wool on all the ceilings and some of the walls. This reduces noise levels significantly, which is great for staff as well as visitors.” ■

Project: Gigantium, new sports and event centre in Aalborg, Denmark

Architects: Arkitektfirmaet Kjaer & Richter A/S and KPF Arkitekter A/S

Client: Municipality of Aalborg

Troldekt products:

Ceiling panels: Troldekt acoustic panels

Colour: Natural wood

Structure: Fine (1.5 mm wood wool)

Edge design: 11 mm bevelled edget, K11, installed in ready made roof elements











The sports hall is where people meet

The architects behind the Kibaek Sports Hall have connected the old sports hall with the new and created a modern and open environment.

Text and photos: Helene Høyer Mikkelsen, architect MAA

The starting point is a new main entrance and café from which visitors can easily find their way to the many different activities on offer. Architect Rune Bay from Thorup Gruppen calls it "The new town square".

In addition to the existing sports hall, meeting rooms, a large fitness room and a smaller gym for practicing yoga or gymnastics have been built. From the square by the entrance, you can enter the new hall which can be divided into several sections or can be used for large events. Everywhere in the building, the atmosphere is light, open and transparent. As in any sports hall, sound absorption is always very important and here the Troldekt ceilings produce exceptional good acoustics. The panels are also carried through on the ceilings at different floor levels and in the various function rooms.

A sculptural expression

The appearance of the building is very strong with its large facade and pleated roof. All this contributes space within and gives it an almost sculptural expression. Rune Bay explains

that the "pleats" are a functional part of the architecture: "The existing building and the new are connected by the pleats but we also knew that the broken surfaces on the walls and ceilings would break up the sounds within." The large "facade pleats" also open up the building and ensure that plenty of light is free to flow into the hall and entrance area. In the evening, you can look through the windows and see everything that is going on inside. In this way, the sports hall functions as a new and very visible meeting place for the town. ■

Project: Kibaek Krydsfelt new sports centre, Denmark

Architects: Thorup Gruppen

Client: Kibaek Krydsfelt

Troldekt products:

Ceiling panels: Troldekt acoustic panels

Colour: Natural wood

Structure: Fine (1.5 mm wood wool)

Edge design: 11 mm bevelled edges, K11, installed with Troldekt screws





A bright new town within the town

Aarhus Social and Healthcare College has moved to a new building in the Aarhus suburb of Skejby. The materials support the architectural objective of creating a sense of community and human scale where you are never far from the central activity.

Text and photos: Helene Høyer Mikkelsen, architect MAA

Despite being located in Skejby, which is dominated by a new large scale hospital complex, the College is situated next to a number of small saddle-roofed buildings. It is based on a similar concept with its departments linked and jux-

tailed in new ways and interspersed by courtyards. The saddle roofs with skylights add a special touch to the complex, tying in with the neighbouring buildings and flooding the interiors with natural light. The buildings are pale brick



while the materials inside combine to form warm, welcoming and robust surfaces and the different colours on doors and some walls help people to find their way around.

The mix of materials and colours has been chosen to reflect the diversity of students from widely differing cultural backgrounds. "The College is intended to be a town within a town. You arrive in the central hub which gives you a good view of the surroundings and from there you can embark on a journey of discovery through the 'squares, highways and byways,'" says Sune Nielsen, a partner and architect at Cubo Arkitekter.

Interesting roof angles and skylight

This hub is centrally positioned in the complex, a natural place to congregate and the link with all the various levels and departments. The 'sitting stairs' and the galleried walkways offer good views of life in the building while the interesting roof angles and skylights create a sense of depth while at the same time emphasising the human scale.

Project: New Aarhus Social and Healthcare College, SOSU, Skejby, Denmark

Architects: CUBO Arkitekter

Client: Århus Social- og Sundhedsskole

Troldtekt products:

Ceiling panels: Troldtekt acoustic panels

Colour: Natural wood

Structure: Fine (1.5 mm wood wool)

Edge design: 5 mm bevelled edges, K5, installed with Troldtekt screws

Troldtekt has been used throughout the College not only to ensure good acoustics in the open and high ceilinged rooms but also to create a particularly intimate and warm atmosphere. ■

Science in a circular setting

Circular buildings always attract attention – so does the extension to VID Gymnasier in Grenaa. The tower combines an impressive visual identity with modern sustainable technologies.

Text: Thomas Mølvig, architect MAA
Photos: Thomas Mølvig and Tommy Kosior

The VID Gymnasier in Grenaa boasts a round extension to house its science rooms. This white two storey building, with its horizontal line of windows, may look quite modest when viewed from outside but is very dramatic inside where its shape can be fully appreciated.

Here, its roundness determines the school's visual identity with laboratories, workshops and classrooms ranged around the perimeter while the central section provides a communal space with leisure areas. From the centre, there is an amazing view up through the open floors because the stairways have been offset to maximise the visual effect of the tower's volume. At the top, there is access to a roof terrace which can also be used for outdoor teaching.

The ceilings play a key role in the design experience, having been lined with 1,150 sqm of white painted Troldekt panels. All are cut in wedge shapes, narrow at the centre and wider where they abut the outer walls. Together

with the integrated light fixtures, this creates a beautiful harmony in both the atrium and the classrooms.

This is a low energy class 2020 building designed with a major focus on sustainability, including solar cells and a vertical ground heat system. ■

Project: New upper secondary school,

Viden Djurs, Grenaa, Denmark

Architect: Friis & Moltke A/S

Client: Viden Djurs

Troldekt products:

Ceilings panels: Troldekt ventilation

Colour: Painted white 101

Structure: Ultrafine (1.0 mm wood wool)

Edge design: 5 mm bevelled edges, K5, installed with Troldekt screws







Children's Home of the Future

The "Children's Home of the Future" is located in the Kerteminde region of Denmark on the east coast of the island of Funen. This is a pioneering project for an entirely new type of 24-hour care centre for disadvantaged children.

Text: Dipl.-Ing. Olaf Wiechers
Photos: Mikkel Frost, architect MAA & Helene Høyer Mikkelsen, architect MAA



The brainchild of CEBRA, the renowned Aarhus-based Danish architectural firm, it combines the safe environment of a traditional home with new ideas and concepts of what a children's home is and which needs it should meet.

The starting point for the design of the "Our House" project are the familiar basic shapes of the typical Danish home - the classic pitched roof and gable windows. On the one hand it expresses these shapes in a novel and playful way which gives the building a striking appearance while, at the same time, its architectural language signals a safe and cosy living environment.

The building comprises four interconnected houses. These not only reduce the building's overall size but also create varied, self-contained units for the different groups of resident. The shape is emphasised by the striking pitched roofs, window piercings and extensions which grow in and out of the individual sections. The spaces resulting from this concept are very flexible in terms of their layout, furnishings and use, depending on the needs and activities of the residents. The close proximity of the various units means that staff can always be nearby and this also makes everyday work routi-

nes more efficient. The primary aim of this concept is to free up more time for care of the children and the creation of a place that feels more like a home and less like an institution.

The architects' focus on natural building materials also contributes greatly to user satisfaction and well-being. For example, Troldekt acoustic panels, made from natural wood and cement, are used throughout. Clearly, the need for pleasant acoustics was the key reason why these panels were specified for the ceilings. ■

Project: New children's home, Kerteminde, Denmark

Architects: CEBRA A/S

Client: Kerteminde Municipality

Awards: Shortlist for 2015 EU Prize for Contemporary Architecture, Mies van der Rohe Award

Troldekt products

Ceiling panels: Troldekt acoustic panels

Colour: Natural wood

Structure: Fine (1.5 mm wood wool)

Edge design: 5 mm bevelled edges, K5, installed with Troldekt screws and K5-N installed with concealed KN-brackets



A place for children of all ages

Børnekulturhus Ama'r has been a complex project in many ways, involving a long construction process. However, it was worth it resulting in a magnificent building which encourages children's play and discovery among its unusual shapes, spaces and rooms.

Text: Helene Høyer Mikkelsen, architect MAA

Photos: Helene Høyer Mikkelsen, Jens Markus Lindhe and Torben Eskerod

Gravity has been put to the test in the first children's cultural centre on Amager, where nothing is as you would expect – perhaps because children have been asked to make suggestions for its interior! Dorte Mandrup Architects, in cooperation with Nøhr & Sigsgaard Architects, found solutions for the creative and technical challenges which the building's brief required. Troldekt panels have been used on all ceilings – including the flower meadow, which has been printed on the Troldekt panels. The meadow is upside down together with a couple of Martians (also upside down). The building's very complicated structural shape is reflected in the sloping ceilings, which add good acoustics in all the rooms.

Designed for different activities

Architecturally, the children's culture centre is very unified with a unique identity, while containing a myriad of flexible and connected rooms of varying size.

"It has been important while designing the centre's many different rooms to ensure that they are mutually connected visually and linked by the dynamic ceilings and wall surfaces," says Anders Brink, architect at Dorte Mandrup Architects. The children's culture centre offers daily work-

shops and events open to all children so therefore the rooms have been designed to cater for changing functions and activities and the materials used are durable and sustainable. ■

Project: New children's cultural centre, Ama'r, Copenhagen, Denmark

Architects: Nøhr & Sigsgaard Architects & Dorte Mandrup Architects

Client: Copenhagen estates

Awards: Buildings Award 2013 from the City of Copenhagen, WAN Education Award Best Education building in the world 2014, AIT award 2014.

Troldekt products:

Ceiling panels: Troldekt Plus panels

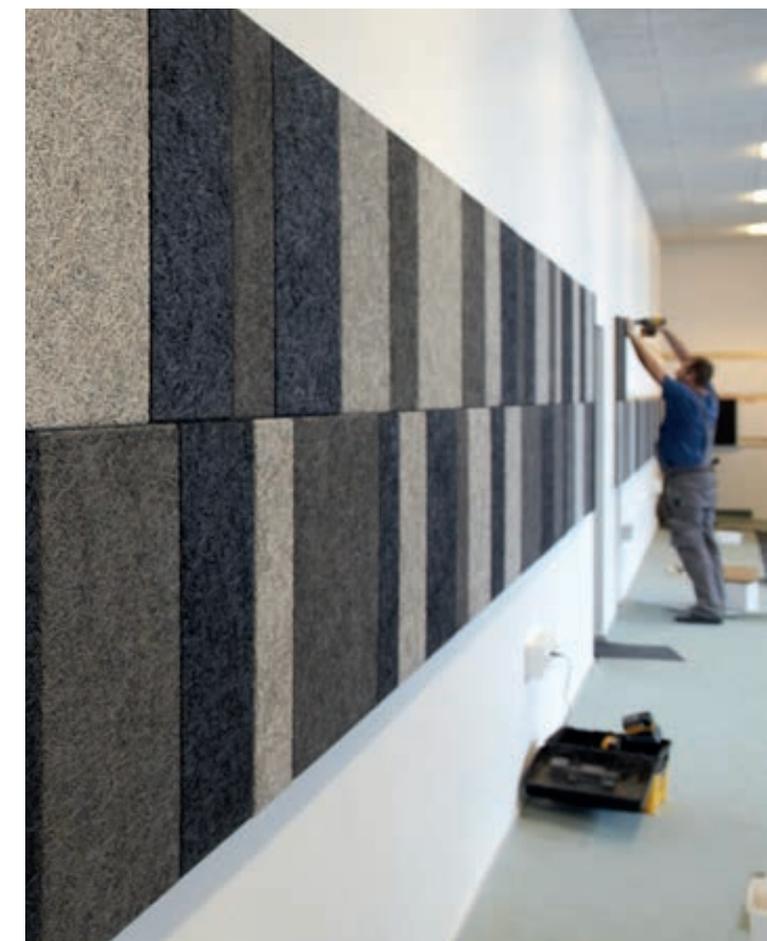
Colour: Painted white 101

Structure: Fine (1.5 mm wood wool)

Edge design: Square edges, K0, installed with Troldekt screws

Decoration: Troldekt decoration, flowers







Good acoustics with a vibrant design

Acoustics have a major effect on indoor climate in modern offices. However, for most people, aesthetics also play a role.

Troldtekt offers several design solutions that allow developers and consultants to give the classic acoustic panels a unique and vibrant design.

Troldtekt cement-bonded wood wool is an honest material with a natural and characteristic look. The variety of colours, structures, edge designs and suspension systems permit a wide range of customised solutions.

Troldtekt has gone one step further by launching new design solutions. The Troldtekt wave, Troldtekt mosaic and Troldtekt rhomb are some of the design solutions that combine good acoustics with unique design – e.g. in office environments.

All three design solutions offer the same good acoustic, fire-protective and indoor climate properties as the classic Troldtekt acoustic panels. The entire range of Troldtekt acoustic panels is Cradle to Cradle certified in the silver category, whether 'natural' or painted in Troldtekt standard colours.

Troldtekt® rhomb



Troldtekt rhomb are Troldtekt acoustic panels with CNC-milled pattern which adds an element of three-dimensionality to the wall: Close up you experience a beautiful, repeating pattern of surfaces, while from a distance the wall will appear as a formation of cubes in perspective.

With Troldtekt rhomb mini, we have scaled down the 3D pattern formed by Troldtekt rhomb into a single element: Each element is 60 cm wide, and CNC-milled grooves create the effect of a three-dimensional cube.



Troldtekt® wave



Troldtekt wave is a wave-shaped acoustic panel designed to give ceilings or walls a sculptural, three-dimensional look. The undulating surfaces create a sense of movement, reinforcing the simplicity and honesty of the material.



Troldtekt® mosaic

Troldtekt mosaic allows the architect to create a distinctive graphic look on wall surfaces. With Troldtekt acoustic panels in varying panel widths, the architect enjoys a high degree of freedom when it comes to designing a unique look.



GOOD ACOUSTICS FOR MORE THAN 80 YEARS

At Trolldtekt A/S, we believe that acoustic comfort and a healthy indoor climate are key elements of high-quality buildings. Since 1935, we have manufactured Trolldtekt acoustic panels from the natural materials wood and cement. We design, develop and manufacture the panels in Denmark – from local materials and under state-of-the-art and eco-friendly conditions.

The sustainable choice

Our range of natural Trolldtekt acoustic panels has achieved Cradle to Cradle certification in the “Silver” category. This certifies that Trolldtekt contains no hazardous substances and therefore can be returned to nature as compost. At Trolldtekt, we share the holistic approach of the Cradle to Cradle concept and are therefore implementing it in our long term business strategy. When choosing Trolldtekt products for sustainable buildings, specifiers can be assured that Trolldtekt can provide assessors and auditors documentation for the international sustainable building certifications LEED, BREEAM and DGNB.

Intelligent architectural solutions

The vision of Trolldtekt is to be a trendsetter within intelligent acoustic solutions with focus on a sustainable indoor climate. Therefore, we continuously develop new special products for modern architecture in close cooperation with architects and building consultants. Every other year, we also present the Trolldtekt Award to the international architectural or design student who best applies Trolldtekt in a different and innovative way.

An audible difference

Today, Trolldtekt acoustic panels are among the leading and preferred solutions for ensuring high quality sound environments. Our panels clad ceilings and walls in offices, commercial and industrial buildings and in public facilities such as schools, kindergartens, cultural centres, sports centres, swimming pools as well as private residences. Trolldtekt makes a real audible difference, not least in minimalist architecture where good acoustics are often challenged by the extensive use of hard surfaces.

