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Copper of today

Welcome to a new issue of Copper Forum. Many of us associate copper metal with specific events or experiences in life. For some, copper may bring on impressions of beautiful architectural designs, for others, a feeling that copper creates magic...

Architect Alf Folmer tells in his article about a meeting with another architect, Einar Jarmund. When he asks Jarmund about his personal relationship to copper, Jarmund talks about a childhood memory of a shiny copper coin. Later on, copper would become an important part of the creation process at the architect firm he runs together with some colleagues.

We will also make a couple of stops on the Norwegian west coast and visit some new projects where copper turned out to be the solution to a successful design.

In Copenhagen, Denmark, you don’t have to search long to find world-class copper projects. Architect Henry Foss gives us his view of the new Royal Theatre.

Very soon, the jury for this year’s “Copper Award in Europe” will announce the happy winner. We will give you the entire hot list with the nominated projects for this year’s “Copper Award”. Here, we will all be able to find inspiration and get new ideas.

As usual, we visit exciting projects around Europe. We hope to give our readers a mix of impressions from both large and small projects, all with a common denominator: the use of copper to give the buildings character and expression.

We also try (like most others) to find signs of trends that will influence building style and adornment in the future. It is a bit of a mystery how trends come up; they sneak up on us and suddenly surround us in both architecture and fashion. The catwalk is an unerring trend barometer for the fashion conscious, and in those circles there is a lot of talk right now about how craftsman-like, thoroughly worked-out details are important ingredients and that the materials should radiate quality and beauty. Later, when I hear that the dark-red copper colour seems to be something many fashion designers use today, my guess is that copper as building material is about to step out on the architectural catwalk. This still remains to be seen.

Lastly, I would like to thank our readers for all your positive response to the magazine. Also, a big thank-you to those of you who have contributed with pictures and your own stories about how copper is used, in both large and small projects. Please continue to write to us. Happy reading!

Lennart Engström, Editor
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Live in Stavanger with a sea view, boathouse and mooring

These days, when you approach Stavanger, Norway from the sea, the lookout in the mast top will call “land ahoy” when he sees the new 12-storey tall buildings at the entrance to the harbour. When the new development Hinna Park in Stavanger was planned, the ambitions were high; this was to be Scandinavia’s most exciting office and residential area. Cultural multitude and preserving regional values were important parameters in the planning.

Centrally located in the area is Stadion Parken, a downtown development with a large range of commerce and services. Public transportation is also built out with frequent bus and train communication to facilitate transportation. Viking Stadion, the local sports facility, is also in the immediate surroundings. The city plan has focused on securing the balance between buildings, green areas and other common areas.

Hinna Brygge is one of the new developments, located on the lot bordering to the harbour entrance, and thus a landmark that marks the beginning of Stavanger’s new section. The proprietors are Kruse Bolig and Øgreid Eiendom. The buildings
are placed at dock level in the harbour area with water on three
sides and moorings at the dock for the tenants. Architects Hans
Jørgen Moe and Ingar Svinterud at Brandsberg-Dahl Architects
in Stavanger have designed and planned the project. The lower
level – dock level – serves as the entrance with common areas
and boathouses for those who have moorings at the dock. The
mooring to the building is made in connection with the public,
car-free waterside walkway. There is car parking in one of the
neighbouring buildings.

The project consists of two buildings that are reversed and
turned in relation to each other, in order to get an optimal view
from all apartments in both buildings. “It was important to us to
give the façades of the twin buildings different looks,” says Ingar
Svinterud, and continues, “The modules of the façade cassettes
are identical in the buildings but we selected different materials.
One building has façades in patinated copper, Nordic Green,
and the other will have façades in patinated zinc. The difference
in façade materials will bring variety to the development’s archi-
tectural expression and make the buildings more sophisticated.

We let the façade cassettes emphasize the horizontal, where
the strips with a shadowed seam on each floor give the façade
a nice play of colours and contrast the more prominent verti-
cal window area. The windows are designed and placed to
bring life and rhythm to the façade.”

The first building, with the patinated copper façade, was
finished in the spring of 2007 and the twin building is es-
timated to be ready for moving-in in the autumn. In spite
of the relatively highly priced apartments in Hinna Brygge,
the sales have gone like clockwork. “We sold all apartments
within 14 days,” says the local real estate agent. This is not
surprising, who would not want to live in a building with
patinated copper façades , a sea view, boat house and mooring
right outside your window?
The storage-office building complex of Brochem Metal is an example of realization, in which different kinds of façade cladding materials have been used on particular buildings of the complex. Elevations of the storage building belonging to the complex are clad with grey, steel-faced sandwich panels, while the office building façade, on the other hand, is covered with yellow-beige structural plaster and pre-patinated copper sheet, which gives the building a representative character. The elevation elements made of copper sheet were purposely constructed with the use of different installation techniques. Such a design was intended to demonstrate and familiarize future clients with various possibilities of copper application on façade and elevations. Part of the façade is covered with prefabricated, diagonally laid, copper shingles. The cladding of pillars that support the angular elements of the construction was installed using a special technique, in which copper strip is wound spirally around a pillar. Part of the façade over the pillar and the small roof over the balcony were both laid using an angled standing-seam technique. Installation of the copper façade required high professional qualifications, accuracy and precision of the façade contractor, which demonstrate to clients the skill level and construction potential of the company.

Headquarters of the Brochem Metal company situated on Szkolna St, Robakowo, near Poznań

A storage-office building complex of Brochem Metal, which can serve as a company trademark, is an example of a project where many different façade cladding techniques have been used to demonstrate the great potential of the company in carrying out a variety of metal-construction works.
Architecture: Mgr inż. arch. Katarzyna Pucek
Building design: CONSTRUCTA PLUS, Poznan
General Contractor: CONSTRUCTA PLUS, Poznan
Façade work: BROCHEM METAL, Poznan
Copper/product:
Product: TECU® Patina
Manufacturer: KM Europa Metal AG, Osnabrück, Germany
Quantity: 500 m²
Address: Robakowo, ul. Szkolna
Completion: 2006
Proprietor: BROCHEM METAL Sp. z o.o.
Conversion of a pump house

The town of Trondheim, located at the mouth of river Nid in the middle of Norway, has long been associated with shipbuilding and fishing. However, over the last few years, the old shipyards and industrial buildings had to make room for a brand new section of the city with both residential and office buildings, many of them designed with a futuristic, modern form language.

In the centre of this new harbour development is the Dock House. In the early industrial era, the Dock House represented the artery of the shipyard activities. From here, water was pumped into and out of the docks in the town’s at the time largest workplace, Trondheim Engineering Workshop (Trondheims Mekaniska Verkstad, TMV). However, in 1983 the Workshop closed down, the pumps became silent and the activities in the Dock House ended.

Today, after many “slumbering” years and the start of a decline, the building has come to life again. Following strong commitment and cooperation between NTNU (the University), trade and industry and the local music interests, it was decided to turn the old Dock House into the country’s most modern concert stage, and not only a stage, but also the Trondheim base for chamber music and jazz.

Architects Svein Skibnes and Go Brandstadmoen were commissioned to transform the building into its new function. High demands were put on both acoustics and architectural solutions. It was important to try to integrate parts of the old brick building with all its history with a new addition that had to meet today’s requirements of function and standard. Finally, the solution was to build additions in both ends of the building.

Concerning material for the addition that would be connected to the old brick facade, the choice fell on prepatinated copper, Nordic Green, which ensures a soft and natural transition. A new copper-strip covering for the roof was included in the transformation. Part of the floor on the ground floor is glass, and one can still look down at the old engine room with its pumps and couplings. The metal work was performed by Bakco A/S in Trondheim.

The Dock House is again an important part of everyday life in Trondheim. After external and internal remodelling, the building has been transformed into a cultural pump house.
The interior of Bodega Café, Żydowska Street, Poznań

As intended by the architect, the gleaming golden-brown hue of preoxidized panels that cover the interior walls of the Café corresponds in a unique way with the colour of the coffee that is served here; the interior seems to be filled with the aroma and flavour of the “potion”.

“Bodega Café” is absolute proof that the right choice of material plays an extremely important role when it comes to creating the ambience of a place. The interior walls of the café were covered with irregular prefabricated cassettes made of copper sheet TECU® Oxid. The cassettes were then abraded around the edges in order to remove the layer of oxidation.

As a result, delicate reflections of light appeared on them, warming up the atmosphere of the interior. In addition, the cassettes became optically three dimensional.

It is worth emphasizing that the combination of simplicity and functionality of the interior with the highest quality of construction work creates the unique harmony of this place. Because of this the modern design is not overwhelming, and all one desires is to have yet another cup of coffee.

Interior design: Mgr inż. arch. Ewelina Jankowska, Poznan
Interior works: BROCHEM METAL, Poznan
Copper / product: Product: TECU® Oxid
Manufacturer: KM Europa Metal AG, Osnabrück, Germany
Quantity: 50 m²
Address: Poznań, ul. Żydowska
Completion: 2005 Proprietor: Private
Omni directional building
a Haarlem landmark

Pré Wonen housing corporation commissioned a building for its own “back office” activities that could potentially accommodate other tenants as well. The building stands alongside the motorway approach road and is surrounded by roads on three sides. This is reflected in the design of an omni-directional building with a compact, rounded form and a facade clad with copper. The interior is organized around a central atrium, where the vertical and horizontal circulation routes are clustered. The facade displays a rhythmic pattern of generously proportioned windows. Together with the atrium, two large openings in the facade guarantee sufficient daylight inside the building.

Pré Wonen commissioned the design of a building that would be suitable for various offices and business functions, so that other businesses or organizations could be accommodated besides the housing corporation itself. At this busy location near Velserbroek, the building presents itself prominently in various directions. It is surrounded on three sides by the approach roads to the motorway and the motorway itself, while for deliveries it can be accessed from the remaining side via a local road. Unlike many projects at high-profile locations, the Pré Wonen building therefore has no front or rear; it is omni-directional.
Inspired by the lineation of the surroundings roads, the building has a rounded outline. This is accentuated by the copper shell of the facade with rows of floor-to-ceiling windows. From one floor to the next the alignment of the rows of fenestration is staggered. The detailing of the windows shows restraint – they are set in aluminium frames with a copper trim. The rhythm of the facade’s articulation is interrupted by a couple of two-storey spaces, the entrance foyer and the conference room, which are prominently manifest in the facade thanks to their surrounds of white concrete. These openings allow even more daylight to stream into the building.

The generous incidence of natural light ensures a pleasant working environment inside. The heart of the building is a generously proportioned atrium with a glass roof. This is the spatial pivot where the greater part of the internal circulation is clustered and where the building’s users encounter each other. The atrium is ideally suited to all kinds of representative functions, such as presentations, exhibitions and meetings. Arranged around it are the floors of office space with a standard ceiling height, which can be arranged as traditional offices or as an ‘office garden’. A circle of office cubicles divides the atrium from the remaining office space, thus forming an acoustic buffer.

The architect is KCAP in Rotterdam, the Netherlands. Website www.kcap.eu

Copper cladding by Ridder Metals in Hoorn, the Netherlands. Website www.riddersystems.com

Material used: circa 1300 m² plain copper, thickness 0.7 mm.
Architecture from

Austria  Holland  Belgium  Luxemburg

Spain  Switzerland  Czech Republic

Germany  United Kingdom  Finland

Greece  Hungary  Italy  Norway  Poland

Sweden  Denmark  Russia  France

www.copperconcept.org
The Royal Theatre in Copenhagen

The construction of the new Royal Theatre has progressed to the point that you can now get an idea of its size. This is not a small building.

The building principle is two box-shaped bodies of a house, one low and stretched-out, and on top of it a tall, smaller box. When you put together the expression “stretched out” with the fact that “low” here means about the height of a five-storey building, you get a sense of the magnitude. The lower part stands out in dark brick with a surrounding band of windows. The upper part is a closed copper-clad box, easily six-stories tall.

The building is the third large flagship in the entrance to the harbour whose purpose it is to demonstrate the nation’s high cultural ambitions, and like the other two, the Royal Library and the Opera, it has functions that not least require a location by the water. Its mission is to give people not just a view but a cultural view. In fact, the buildings would have functioned in a basement, as long as it had electric lights.

The interesting thing with these colossal buildings is their interplay with the surroundings. The library becomes an additional part of an area with large, sloping shapes. The opera house is situated on an island with the back against its closest neighbours, which are long and low buildings. The theatre, however, is located level with buildings of average height, and being close gives it the impression of being very solid. It is still missing the large walkway that will be suspended above the water and serve as the main entrance, and make it possible for visitors to walk around the building.

Before the theatre was built, a newspaper article described the ramp or walkway as “balancing on the border between land and water and giving visitors a pleasant feeling of insecurity.” Before it has been built it is difficult to imagine the building’s appearance in the urban landscape.

The ramp will wind around the corner towards Sankt Annas Plats at a width outside the facade that the building can support, and it is a pity, as this will make it harder to design the bridge to suit all kinds of city traffic, that really should have been built a long time ago as an extension of the site, to lead to Christiansholm and further on to Holmen and Dokön. It is an expression of public administrative madness that decent road communication to “civilization” were not built before Holmen became the site for institutions that thousands of people must have access to.

You have to cross the water – or take the ferry boat out on the water – to get an overall picture of the theatre building. Not a bad sight! The building has both strength and elegance. The copper box produces a dark silhouette against the city sky. When it oxidises – or, if it oxidises, as the vertical surfaces will be hit by acid rain from all directions, but the elegant checked pattern with marked collections will help – it will slowly look bigger, as a light shape is more prominent than a dark (a lady’s “small black
dress” is not smaller than other dresses, but black makes you look slim). But at the same time it will give a lighter impression, as a light shape will be camouflaged by the changing sky.

At the moment the box looks so huge that the dome of the Marble Church looks small in comparison, but this will change, especially since the theatre tower, in spite of its checked pattern, is free from details, while the dome – “the big-bellied matron” as an author fondly called it – has both seams and windows.

Theatres thrive in the dark. The characteristic of the building is that it looks dark during the day but glows at night with its illuminated string of windows and the large walkway that casts its reflection in the water.

History can – like in a play – have a happy ending.
Old coin inspired the use of copper in architecture

One of Norway’s most prominent architects, Einar Jarmund (45), remembers when he as a young boy played a game where a copper coin was thrown against a wall. The player whose coin landed closest to the wall won the other players’ coins. “I especially liked the five-öre coin with the picture of a moose. When I rubbed it the moose began to shine and the copper came to life. It was magic. Since then I have strong feelings for the material and I have frequently used it in my work”, says Jarmund.

I visit the architect firm Einar Jarmund/Partners on Hausmansgata 6 in Oslo. The partners are Håkon Vigsnes (45) and Alessandra Kosberg. The firm has 14 employees. At the time for my visit the two partners are away on travel.

Jarmund shows me the spacious office on the seventh floor. On one wall there is a large photo showing the firm’s biggest copper project, the 8,500 m² research facility on Svalbard. The project has the day before been sent to the European Architectural Awards the day before to participate in the international contest for the most important architectural project where copper has been used.
A new, bold architecture

Recently, a special exhibition at La Galerie d’Architecture in Paris closed. It displayed the firm’s projects that have received the most attention. The bold architecture, that has given the firm international status and made it one of Norway’s foremost architect firms, received much attention.

I have studied the exhibition catalogue carefully and reviewed all projects. I notice a wealth of design ideas and expressions. From pointed to round, square, crystal cut, slanted rooms and carved-out volumes. No one project is similar to the other. This is exciting!

I ask Jarmund: “You are three partners. When you are commissioned for an assignment, how do you begin your work and what brings you to the first outline?”

“We discuss the project back and forth and the one who feels strongest for the project will begin sketching. After that we continue the discussion within the group. We analyze the assignment and try to look at problems from different angles.”

Jarmund points out that the partners have their own individual form language and personal opinions, and they must objectively try to convince their colleagues objectively. The continuing discussions are often very productive and the result is good architecture.

Transferring history

“I am of the opinion that each project should be built upon a historical foundation, which will be transferred to present time and given today’s form language”. To illustrate his words, Jarmund proudly shows photos of the plan for the Norwegian Defence Ministry headquarters, built at Akershus fortress in Oslo that originates from the 17th century. Here, the grounds are permeated by history and tell of Norway’s proud medieval inheritance that is classified as Norway’s national treasure.

Jarmund tells me that the project has been one of the firm’s most interesting and complicated tasks. The huge, old brick buildings had to be linked with buildings of modern design.

“This was a difficult task, especially due to the involvement of the military, antiquaries, archaeologists, industry, bureaucrats and others. Many different interests and two different worlds – then and now, openness and seclusion; it all had to work together”. Jarmund gets excited: “The starting point was architectural simplicity and few materials. Brick dominates in the existing buildings. Thus, a brick building was necessary in order to link the buildings together. We decided on brown brick, copper and glass. Copper was the obvious choice, as it harmonizes perfectly with brick and is maintenance-free. Glass was the natural material to achieve openness”.

Jarmund suggests that I visit the Norwegian Defence Ministry’s headquarters. This is a strictly military area with high surveillance. He phones the military headquarters and arranges for me to meet Even Enge at the headquarter gates at 10 a.m. the following day.
Architecture and criminology – the same thing

We continue our discussion about architecture and different trends over time. Swedish architects Jarmund admires the most are Gunnar Asplund and Peter Celsing. Celsing for the openness in glass and copper of the Cultural Building in Stockholm and for the seclusion of the Bank of Sweden in black stone and copper.

I ask Jarmund if he has a particular architectural philosophy. “It is a constant searching for truth. I try to create architecture in the same way as an author of detective novels solves a complicated murder case. It has to do with collecting bits and pieces, research and analyze to solve a murder (architecture). When the mystery is solved all the pieces are in place, and you have a good detective story or good architecture. I admire detective-novel author Henning Mankel and work almost in the same way”.

Tactile copper

We talk about copper. “As a young boy I collected five-öre copper coins and liked to feel the structure of the surface. The moose on the coin began to come to life. Since then I have a special liking to for copper”. Jarmund proudly tells of the copper facades on Svalbard. He suggests that I take a look at a new detached house built in copper outside Oslo.

Our conversation moves on to the new architect college in Oslo (OAH), which was designed by his firm. An old workshop and laboratory building for the electricity board has been rebuilt and extended to become an ultra-modern facility for training architects and designers. He wants me to look at this facility as well, which makes three projects for me to see the following day.
Military office and invisible bunker
At ten o’clock the following day I’m waiting outside the entrance of the Norwegian Defence Ministry. Inside, the country’s military secrets are hidden. The guard building is new and looks like a modern detached house or tank. Even Enge shows up and gives an order to the guards, and I squeeze through the narrow, rotating iron gate. We walk over to the main entrance, a five-meter-high, compact double door of copper. The facility is impressive. Old buildings are linked to modern transparent buildings of glass and copper.

What we can’t see is the heavy technical security devices in the building. They are hidden in strong concrete constructions, built to withstand sabotage and explosions, all hidden behind a wall of glass; an invisible bunker and architectural magic.

Closely followed by Enge I begin taking pictures. The facility is an outstanding combination of new and old, brick, copper and glass. A group of military officers with gold on their shirt shoulder straps come out to smoke a cigarette. When I have finished taking pictures of the details in the facility interior I thank Enge and squeeze back out through the narrow gate.

Photographing prohibited
As I walk around looking at the facility from the outside, a uniformed man comes up to me and says in a stern voice: “Photographing is prohibited in this area”. He asks for my name, age and address, and what my business is there, notebook and pen ready. I show him my papers and refer to commander Enge at the Defence Ministry. The officer suddenly salutes me and says: “Then there is no problem, you may continue taking pictures”.

I resume taking photos of the secret military facility. In my own and architectural writers’ opinion, the Norwegian Defence Ministry is an example of modern Norwegian architecture at its very best; outstanding modern architecture, woven into old architecture in a historical milieu. The facility expresses seclusion and openness, past, present and future, all at the same time in an organic entity. Instead of being made into a museum, the history of Akershus fortress is activated and brought to life thanks to the outstanding architecture.
The copper house

The copper house is called Björnsen/Sund and the location is Asker outside Oslo. The house is not visible from the road, as it is situated on the inside of another building on an airy and idyllic lot. It is like entering another world and time. The copper house is like a closed sculpture with narrow openings for windows. The architectural style can be classified as neo-functionalism. When the house was newly built the copper was reddish-brown and shiny, airy and light, and reflected the surroundings and the sky. Today, the building has a dull brown patina that gives it weight and a down-to-earth feeling. The facades are entirely clad with one-storey-high copper strips. Pronounced vertical seams give the façade a nice structure. Copper, wood and simplicity make the house timeless. In contrast, the new neighbouring house is built in Tyrolean style that belongs in the Alps and a different time; an architectural culture shock unheard of. Life is full of surprises.

The Architect College

I have time to visit Maridalsvägen 39. The old front door opens up to a modern building. This is OAH, Oslo Arkitekt Högskola (Oslo Architect College), designed by Jarmund’s firm. The place buzzes with life. Future architects and designers carrying models and drawings disappear into the different departments. Students stand in groups engaged in lively discussions. On the ground floor the graduating classes are exhibiting their final projects. There are models, drawings and photos of projects that astonish the initiated. The works show the architecture of tomorrow, projects that are based not only on technique and function, but also on sociology, life quality and philosophy. The proposals have titles like “The added room in the city”, “In the middle and outside” and Differences, spaces and meetings."
The architects of tomorrow

I peek into the study hall where students draw, build models and create virtual rooms on their PCs. In another part of the college the floor is filled with models, the result of an exercise assignment of a detached house. Several students work on their models that soon will be reviewed. I ask if anyone plans to use copper. Yes, there is one model in copper colour that stands out in the collection.

It is time for the review in the nearby lecture hall. The students bring their models and show plans, sketches, perspective and images digitally on a big screen. One by one the students present and motivate their proposal. Teachers and students ask questions and make comments. The room is filled with creativity and enthusiasm.

I have to leave for a meeting. After that I will take a plane to Stockholm. I am sad to leave the elite of tomorrow’s architects, many of them with an awareness for copper.
Internationally reputed contemporary Spanish architecture hides a lot of less well known yet really notable smaller works of art besides public buildings advertised widely such as the MUSAC. Sometimes it is worth giving up a little of our snobbism and search around a bit in Moneo or Calatrava in the portfolios of smaller studios.

The house having the logo-like form does not wish the merge with the detached houses of the dusty little town.

The unusual building massively protrudes from its usual green belt surroundings.

It gives unrealistic view when walked around.
The young architect couple, Bernalte Patón and José Luis León Rubio coming from the Castilla la Mancha region, Don Quixote’s home scattered with windmills, have already proved their talent several times. They attract the attention of the professionals and the skilled with their simple but excellent solutions. They have won a number of national and international awards with their buildings of “slight significance”. Their architectural concept is always very strong, they do not get lost in the details.

Recently several buildings designed by them have been featured in Hungarian professional magazines (OCTOGON, ALAPRAJZ), like a small thermal bath, a detached house, an extension to a vineyard building, all of them from the town of Ciudad Real some 2 hours from the capital, from the site of the architects.

This notable detached house is their first implemented work in Madrid followed by several other orders inspired by the success. They designed the house for a person having a leading post in the media for whom it was taken for granted that his home should follow the latest trends thus matching his exhilarated lifestyle. The unrealistic mass formation of the house born as the solution shows a sort of potential view of the future …

The “copper tape” turning from outside above the kitchen island in one space with the living room draws the line of the gallery where the study corner is placed in a belvedere-like position. From the intermittent floor of the study a ram-like terrace leads to the bedroom block forming secondary mass, repeating the lower “tape” spiral as a façade forming element.
The designer concept was inspired by the busy lifestyle of the customer. The owner’s attitude of being in one place with one foot and in another with the other inspired the basic idea of the concept method partly reflecting airplanes’ high industrial design and partly their ethereal features.

The bigger part of the house has been implemented by being hoisted from the ground with a console construction. Viewed from the street you can see a wound metal tape. The block playing essential role in the structure made of raw concrete is made with blade walls but it hides a passage way. It provides an aesthetically neutral and homogenous background for the main premise protruding like a contemporary artistic relief with exclusive copper plates and special glass panels letting light through but hindering transparency, the contour of which thus has become a façade forming element in an extraordinary way.

The residence having this novel look entirely meets the demands for functionally as the layout of the premises follows a logical system. The adjoining of the different floors provides for favourable living circumstances.

The construction materials once applied in an industrial medium rightly justify through this example the advantages hidden in the widescale use of them, which may ensure that today nothing can limit your imagination. It should be pointed out that in architectural solutions the formation limits of all construction materials are being expanded, whether it be metal, concrete, glass or wood itself. When development leads to the 3D way of thinking of computer designs concepts already exist that are simply impossible to implement using traditional methods like designs drawn in 2 dimensions or to be built from bricks.

Future leads to architecture with amorphous sculptural features represented by Zaha Hadid and Frank O. Gehry.
AWARDS SHORTLIST ANNOUNCED

In the last issue of Copper Forum we announced a major Awards programme focusing on architectural projects around Europe using copper in all its forms. With judging now complete, architect and consultant to the ‘European Copper in Architecture Campaign’ Chris Hodson reviews projects shortlisted by the judges, ahead of the announcement of winners in September.

The Copper in Architecture Awards is a design-led competition that started in the UK but has developed to include recognition of the best recently completed buildings in the UK. While this is only the second time that a European award has been included, it has developed fast – not just in terms of the increasing number of entries but particularly with the quality of projects submitted. So, the judging panel of leading architects faced a major challenge in choosing between so many excellent buildings. But eventually six entries were shortlisted from the 31 European entries and these are discussed here in no particular order.
A new Theatre in Vicar, Almería by Carbajal + Solinas Verd Arquitectos takes a typically Spanish, lively approach to cladding flat surfaces, using a combination of brass, bronze and plain copper strips. The building consists of a series of rectangular masses with either a horizontal or vertical, regular cladding pattern. The entire building is raised on a plinth to generate a series of public spaces - maximising combinations of light and shade – where the copper cladding theme is continued. The classical reference continues with a great ‘portico’ framing the entrance. For the judges, it was the innovative use of different surfaces introducing new colour combinations to copper cladding that distinguished this building. In the strong Spanish sun-light the effect is simply stunning.
In the north of Norway, very different climatic conditions influenced the design of Jarmund/Vigsnæs AS Architects' Svalbard Science Centre. An addition to an existing university and research facility, it is the largest building in Longyearbyen and Spitzbergen. At first, the long, low, faceted profile of the building seems arbitrary - or perhaps a response to the angular faces of the surrounding mountains. But the geometry is also driven by practical considerations surrounding the flows of wind and snow through the site. A limited palette of materials - essentially timber and copper - has been used inside and out, with copper handrails and reception desk mirroring the exterior cladding.

With a complex programme and such a challenging environment to accommodate, architectural design could easily have taken second place but this is a beautiful building set against the mountainous arctic snowscape.
A nother example of high quality architectural design in an unexpected situation is the Skive CHP Station in Denmark. The first of its kind in the world, this is a full-scale pilot project for the new biomass technology and will therefore attract visitors and have a symbolic role. The plant is located on a ridge along a main road and is highly visible in the urban landscape from the fjord, the town and the nearby residential areas. The building’s designers C. F. Møller Architects wanted to use ‘simple shapes and distinctive details to signal “power station” – shorn of the usual familiar building features such as doors, windows or storey divisions.’ The judges saw this project as an exemplary utility building designed with a real architectural response, superb quality and careful detailing, while still retaining a functional aesthetic.
In complete contrast, Lands Architetture’s Une Boîte Moirée project – a modest scale copper box in the Swiss countryside - provides a working, living and contemplation space. Rich combinations of copper cladding and perforated screens – some sliding to suit the occupier’s needs – play a major role in realising the architects’ intentions of achieving: ‘pure matter from outside, surprising light in the landscape inside. Presence and transparencies. Landscape is the dominating element, the voice inspiring the architecture.’ This intriguing building sits like a jewel in its dramatic mountainous setting.
Copper combined with transparency and light is also a central theme of Wandel Hoefer Lorch Architekten’s new Jewish Centre in Munich. The synagogue is the central building of a balanced group, and consists of a closed, rusticated stone base with a light steel and glass lantern rising from the centre, cloaked in a veil of woven bronze mesh. The choice of materials has symbolic relevance informed by Jewish culture but is also very effective architecturally. This deceptively simple elegance particularly impressed the judges and the building’s beauty is apparent both during the day and at night.
Simplicity and clarity are also characteristics of **KUMU, the new main building of the Art Museum of Estonia in Tallinn**, despite a complexity of requirements to be met. To reduce the impact of this large building, its designers Vapaavuori Architects set it into the hillside setting. A curved wall unifies the plan, enclosing a courtyard externally and dividing functions internally, while clarifying the route through.

The main facade materials are limestone, glass and pre-patinated copper – all treated with simplicity to highlight the geometric form. Unlike several other shortlisted projects, copper is used here in a straightforward way but still recognised by the judges as an essential component in a beautiful composition. This is an elegant solution to a complex programme reflecting cultural and national influences.
JUDGING THE AWARDS

These shortlisted projects give an insight into the huge variety of design potential of copper. For this reason, the Copper in Architecture Awards take a flexible approach to seeking out the very best in contemporary architecture where copper forms an essential part of the design, whether as cladding, roofing or other architectural elements. Awards projects are not restricted just to copper sheet but can include other forms such as perforated or expanded sheets, woven wire mesh and metal alloys that predominantly consist of copper, such as bronze or brass.

The growing popularity and status of the Awards is not just reflected in the quantity and quality of projects entered but also in the judging panel of leading architects. This year’s panel was chaired by the editor of ‘The Architectural Review’ magazine, Paul Finch, and included regular contributors Gordon Talbot (Ian Ritchie Architects), Craig Casci (Hamiltons) and Laurence Bain (Bain and Bevington Architects). We were also delighted to be joined for the first time by Ken Shuttleworth (Make Architects) and the winner of the last European Award Kari Jarvinen (Kari Jarvinen Ja Merja Nieminen) from Finland.

Full details of the winners of the Copper in Architecture Awards from both the European and UK categories will be published following an announcement and presentation in September. Copper in Architecture is part of the European Copper in Architecture Campaign and full details of the Awards can be found on the www.copperconcept.org website which also contains numerous project references from around Europe.
The University of Plymouth’s Roland Levinsky Building is a multi-use facility for the Arts Faculty in a prominent location. Designed by concept architect Henning Larsens Tegnestue with executive architect BDP, this distinctive building uses copper cladding wrapped continuously up facades and over the roof. The sculptural qualities of this landmark building make the most of a difficult plan form.

Separately from the European category, the Copper in Architecture Awards continue with awards for the best UK projects. This year, five very different buildings were shortlisted by the judges from the 43 entries received.
A sculptural approach has also been taken by Allies and Morrison Architects with the new *Peter Harrison Planetarium at the Royal Observatory in Greenwich*. Here, a tilted bronze cone over the planetarium is aligned with the north star at 51.5 degrees. Acid solutions were applied to build up the surface of the bronze to give rich reds and browns, finished with a hot-applied patination of green splashes resonant of nebulae seen in images from outer space. The final waxed finish gives a matt lustre to this beautiful surface.
Bronze also plays an important role in The Collection – a new museum on an historic site in Lincoln - designed by Panter Hudspith Architects. Window frames, box window cladding, external doors and canopies are built of bronze to symbolise human inhabitation of the rough forms signified by rugged stone walls. The judges particularly enjoyed this cool, relaxed juxtaposition of materials.
Keith Williams Architects’ design for The Unicorn Theatre for Children in London incorporates a random length strip rain-screen system using pre-oxidised copper of differing widths to give a laminar, striated and massive quality to the main façade. The strip copper is carried into the interior of the building to celebrate the presence of the main theatre hovering above the foyer. The beautifully executed copper skin gives a particular grandeur to the building’s entrance.
Finally, a new public swimming pool in Formby designed by Feilden Clegg Bradley Architects takes the form of two linked volumes. The dominant form - clad in oak and roofed in copper - sits next to a lower, longer copper box. The copper volume is cut away on the east side to reveal the Douglas fir and slate interior. This is an elegant, understated low-rise building making the most of a limited palette of natural materials.
House concept
The three-storey villa near the Nymphenburg Park in Munich stands at the northern end of a large garden. The space follows a continuous line of floor, wall, ceiling and roof areas, opening in the ground floor on to the south garden; sheltering the privacy of middle-floor sleeping areas – with bathrooms overlooking the rich vegetation on the northern side of the house – and folding into a tent roof over the top floor. The side views provide an open space concept. You can follow the line, broken by staircases and cores, across the stone basis, the northern back wall of the intimate living areas, over ceilings and the southern bedroom wall up to the roof framework cut open to the south. For this line we choose a material that works equally well as roof covering as on façades and lends itself to complex joints into various structural elements. It was soon obvious, that the material should be a metal skin.
Material choices
Copper has been used in landmark buildings in the neighbourhood, including Jesuit convent by Paul Schneider-Elsleben and Holy Trinity Church by Josef Wiedemann. Copper as a high-quality and durable building material interested us, but it was only the prepatinated Living 1 and 2 made by the Finnish company Luvata that convinced us and the house owners about the aesthetic performance of the material. The craftsmanship of the copper sheet line creates a contrast with the precision-made glass façades. The dark bronze aluminium façade coated with eloxal shade E6/C34 takes on the darkness of copper. The sheets provide a textile-like appearance, resembling a wrinkled carpet. The surface structure of the prepatinated Living 1, mottled with black among green copper sulphate points combine to provide an attractively vague green shade, enlivened by the reflection of light. Varying degrees of exposure to sunshine and rain will give different parts of the façade a different shade over the years. Copper elements should not be too conspicuous – the patination renders the material a subdued shade which blends in the large building with the natural backdrop.
Experience the beautiful copper roofing of Stockholm from above

At the beginning of June 2007 an opportunity arose to climb up to the roof of the old Parliament House on Stockholm’s Riddarholmen. An event organiser Upplev Mer Stockholm takes groups on a guided tour up around the house where the 360 degree view over Stockholm from 43 metres height is breathtaking. Many beautiful green copper roofs are particularly prominent on significant buildings including Stockholm, churches like the nearby Riddarholm church and Town Hall. This observation angle gives an excellent opportunity to see the formability of copper and the brilliant sheet metal work on Riddarholm church roof and decorations.

The old parts of Stockholm are dominated by copper roofs. Sweden has had a long tradition of using copper as building material since the 13th century. Many of the visible roofs have been installed to follow King Carl X Gustav’s declaration to use copper as roof material to increase fire safety of the city. The copper roofs have an incredible durability that lasts for centuries and become simply more beautiful over time. It is easy to understand seeing these craggly structures among the rooftops how important it is that the roof is virtually maintenance free during its long lifetime. Copper is also totally recyclable, a true sustainable material for the future.

“We want to breathe new life and increase interest in the fantastic history of the city, its roofs, buildings and architectural details that are easily missed from the ground,” says Anders Stjernberg from Upplev Mer Stockholm, the father of the idea.

European Copper Institute and Scandinavian Copper Development Association are supporting these events together with Plåtslageriernas Riksförbund. Special tours with Rolf Svensson as guide, a recognized specialist in sheet metal architecture and history, will be laid on for architects and students by agreement in connection with information events on copper in architecture.

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Eight years ago, in 1999, one of the biggest Nordic Brown projects was carried out a few kilometres outside Innsbruck in Austria. The development consisted of seven residential buildings, covered by Luvata Nordic Brown™ copper. Nordic Brown has a factory-oxidised brown surface on both sides, similar to a naturally developed oxide after years of weathering outdoors.

We have now re-visited this interesting residential complex that was designed by architects Baumschlager & Eberle.

The facades of the seven residential buildings are covered with 7,000 m² pre-oxidised foldable cassettes. When built in 1999, the surface of the pre-oxidised copper was quite even. When inspecting the buildings on our re-visit, we find that the alpine climate in Innsbruck, with snow, sun and strong winds, has only to a fairly small degree affected the surface colour. It turns out that some of the change was caused by a few of the residents, in their attempts to “clean” the facades. The more important changes are due to the influence of rain as a catalyst.

We now take a look at the different external walls. There has been only a slight change of colour on the south- and west-side facades; it looks like a thin grey veil on the brown surface. The east-side surface, however, shows a green veil, in particular in some of the areas on the lower floors. This is the beginning of the natural patination. The most interesting changes can be found on the northern side of the buildings, where the facades are beginning to turn an aubergine-brown hue.

What we can see clearly from this development is that pre-oxidised copper is a living material that beautifully finds its balance in nature and exists in harmony with the surroundings, a timeless and ageless material that responds only favourably to the harsh elements.
**Industrial building in copper garb**

“An entire industrial building clad in copper. This is not only unusual, but also exciting and promising. At the same time, I take extra pleasure in the fact that it is the architects that are bringing this trend forward. It promises many more interesting projects in the future.”

These are the words of Rune Hansen at Leif Hansen A/S, senior manager of Kristiansand Sheet Metal Works. The construction of an extraordinary industrial building has recently been completed, and there is hope that more projects of this kind will follow. Hansen is pleased that the architects are experimenting with metal cladding to a higher degree, which results in both craftsman-like challenges and beautiful buildings. The reactions have been exclusively positive.

“Our clients are very positive to this solution, and we are presently planning another building with copper cladding in the near future. In fact, this is beginning to become a trend,” says Hansen.

**Copper**

Architect Odd Klev d.y. did not hesitate when he and the builder, proprietor of a sheet metal works, decided to use copper cladding when the industrial building was to be built in Jåbekk outside Mandal.

“It is the first time we have clad an entire industrial building with copper, but the result is outstanding,” says Rune Hansen himself. The cost ended at approximately 6700,000 for the metal works, with about 6,700 m2 strip covering and close to 200 metres of gutters and down pipes. The installation was both challenging and exciting, especially due to the comparatively large area of copper cladding. Brown copper was used consistently, and the proprietor and the architect are already discussing the possibility of a new project with similar design.

“The entire building is clad using single lock welt and angled seam with hidden attachments,” says Rune Hansen. As the executor of the installation, he found it to be a very positive experience to work exclusively in copper. He has never before had a similar assignment and does not know about any in the area. But this may change now.

“When we started the building construction there were already rumours that it would be something out of the ordinary, and a lot of people have travelled here to take a look at the result. They have followed the patination, and as far as I know the opinions have been entirely positive,” says Hansen. “The reason the architect chose only copper was that it adds quality to the building and gives a patina that no other building material can achieve. In addition, the architect has created a horizontal impression, which gives the building a compact and exciting appearance.”

Clients and business associates have followed the patination
New clients
The proprietor himself is extremely pleased, not only with the successful construction of a beautiful and functional building, but also with all the positive response from both existing clients and other interested parties. This shows that the building with its copper cladding itself has contributed to securing new customers. That copper sells, is something that both proprietor, architect and, not the least, the craftsmen agree on. “And when customers and other associates join those who have expressed positive opinions, there is good reason to put on a big smile,” says Hansen.

Copper-clad industrial buildings are becoming a trend, according to some sheet metal workers in Norway.

The project has been both exciting and challenging, says Rune Hansen, master metal sheet worker and senior manager of Kristiansand Sheet Metal Works.
Peter Harrison Platonium at the Royal Observatory in Greenwich © National Maritime Museum, London