Modern Wooden Architecture – Traces of traditional timber constructions

Architettura in legno moderna — Tracce di costruzione in legno tradizionale

Architecture en bois moderne – traces des constructions traditionnelles en bois
Modern Wooden Architecture – Traces of traditional timber constructions

1. Introduction

There are many here in Garmisch-Partenkirchen today that know a lot more than me about the historic use of wood, the cultivation of the forest, modern use of wood, technical and static abilities. I still would like to try to draw traces back into time, because as an enthusiastic hunter and fisher, as a Norwegian with roots in the deep forests, the forest is an important foundation for my professional work.

Throughout my life I have spent countless vacations and most of my spare time among traditional wooden houses in the mountains or the forest. As we say in Norway: the taste of wood is in our blood. The awareness of what wood did to body and mind, became clearer as the ability to observe developed as an architect.

I am confident that it is not only the dry scientific facts about wood as a renewable resource, its abilities to degrade carbon dioxide and as a source of oxygen that makes wood the most important material in a future sustainable society.

If sustainability should become more than a popular term, we are dependent that our cities and villages develop on already established human premises, with means humans have more than a cold scientific relationship with.

The future sustainable society cannot be dominated by filters that remove the universal, human qualities. The planning of our cities and villages must always seek the best physical qualities without the demands of sustainability becoming visible – the challenge will be to implement sustainability into the qualities, the spaces, the surfaces etc.
As planners we must always feel the holistic parameters of a successful project or a successful future.

With qualities and sustainability in mind, wood is a grateful material to work with. Impressions from old log cabins, the smell, the warmth, the raw and unaffected is fundamental. It is easy to disclaim this as romantic imaginations, but I still feel that it is important to feel the frames that have been the protection of humans throughout thousands of years on many continents, let alone Scandinavia.

Some of the problem is that wood is degradable, and that it doesn’t leave traces through history like stone and brick for instance. At the same time this is exactly its main advantage, even seen from a modern perspective, that wood is a part of a natural ecosystem, which makes it the most sustainable material even in the future.

I would now like to present some of our projects that have followed these traces. We have tried to transform the woods qualities both as structural building material and as a surface material into modern architecture. Our office started with the 1st prize in a competition for the Sami Parliament in 1996.

Figure 5: The Sami Parliament Building, the Main Hall

2. Projects

2.1. Parliament building for the Sami People

1st prize architectural competition 1996
Completed 2000

Karasjok, Norway
Gross area: 5 300 m²
Building cost: 127 mill NOK
Reference: Sami Parliament +47 78 47 40 00

The Sami People are a minority that is known among many things to have left very few traces. Their tents, the Lavvo, is made out of sticks that touched the ground only for short periods at a time, because they moved their tents with them on the hunt for food and later on following their herds of reindeer.
This means that their history lacks permanent buildings all together, and that a permanent Parliament would contradict their culture and architecture.

The North and the Finnmark plains, where the Sami People have their heritage, is a flat landscape with few if any elements that form spaces. Their day to day activity was mainly outdoor shores and the Lavvo was more or less protection from the harsh climate while eating or sleeping in -40°C.

The constant daylight during summertime, the constant darkness during wintertime, the extreme climate, the lack of space elements and a tradition for using wood, meaning the very low forest, was fundamental parameters for shaping the Sami Parliament.

The skin is designed to give association to the Lavvo skin, raising directly from the ground and making a sharp boundary between the cold outside and warm inside.

The circular hallway is the main room, connecting all the different functions visually and physically. For four weeks every year the Sami Parliament gathers in their traditional clothes and make the interior a colourful theatre.

The library terracing towards and connects to the exterior main space through a large glass opening to the south, while the books are on the gallery.

The interior as well as the exterior is built with warm materials, Siberian larch on the outside and untreated pine on the outside. The design is detailed to make the constructions a part of the ornamentation. The larch ages quickly and beautifully giving the building a silver patina that connects it with nature and tradition.
2.2. Tana Court House

1st prize architectural competition 2002
Completed 2004

Tana Bru, Norway
Gross area: 800 m²
Building cost: 14 mill NOK
Reference: Nordlysbygg, Alfred Larsen +47 78 92 73 00

Later we got the opportunity, after a competition, to build Tana Court House. This building lies in the same region as the Sami Parliament and is bred on the same historical values. The building lies on a river plain, located along the main road and across to the Town Hall, among birch trees.

The protecting skin is treated as a main theme in this project as well. Like the Sami Parliament the tilted wall will gather snow, making it completely covered like the Lavvo during wintertime. The Lavvo definitely became part of the terrain at the same time as the snow would increase the insulation throughout winter. The wave front wall has also clear references to the meandering river and to the aurora borealis, the northern lights overhead.
Daylight flows across the floor from the slit by the ground. In the winter-darkness the building glows like a lantern through its slits, and invites you into the warmth.
2.3. Viken Center for Psychiatry and soul

Construction 2003, 1st part completed 2006
Bardu, Norway

Built in solid timber elements - first public building in Norway

Viken Center lies in Bardu in the Northern Norway and is a place for treatment of psychiatric health. Three yards are connected to a long cultivated wood garden. The building houses a clinic, congress-center, dwellings and some supporting functions. There are room for 40 long term guests. Hierarchy of spaces: outer space, landscape, garden, yard and your own small space ties the project to the essence of the concept: In need of spatial boundaries.

The buildings main constructions are of massive wood with external skin of untreated wood. The glass areas secures good interior-exterior interaction – Viken Center lies in an incredible landscape. The aesthetic expression, materials, colours and art in therapy are other fundamental pillars in the center.
2.4. Viken Skog Headquarter

Completed 2007

Hønefoss, Norway
Gross area: 2 275 m²
Building cost: 40 mill NOK
Reference: Viken Skog, Runar Krokvik +47 95 24 78 66

Viken Skog is formed as a large display window in order to present wood both as modern construction material and as contemporary surface material – against one of the main roads to Oslo. The pine forest and the prepared wood exterior starts the story. Blueberry and heather grow close to the building.

The high pine trees creates an open filter between the main road and the building. The Glass prism stretches against the wood and the road - and invites you into the mystery of trees. The main entrance gives a sense of walking through the darkest part of the forest and seeing the meadow open up – you meet the entire lobby area.

When the forest worker has left the forest, the logs remains in the “battle field” in all directions, they are waiting for the next step in the process. Two solid logs – or walls - shapes a constructive triangle and embraces a central area.In the middle of this area a cone is growing and shapes organic rooms – as the rooms between the trees in the forest.
In the open lobby you meet the bonfire that spreads a warm atmosphere – when sensing to be in the middle of the forest. The cone’s growing through all floors - are exposed by the glass slit.

All elements and constructions, except the lift shaft, are in wood. Different sorts of wood is used in accordance with qualities. Hard oak in stairs and on floors, light aspen on walls, light spruce in massive floor slabs – creating ceilings in the rooms down under.

Figure 34: The office facade  Figure 35: The display window

Offices - with requirements of sound separation and visual abilities - are located in the more solid part, wings, while coffe places, meeting spots are located in the open triangular space in between. Meeting rooms – where new ideas are born – are located in the seeds, in the cone.

Between the pine trunks, between the different elements - opens continuously - new sights in the mystic of the forest. At the top of the cone - is the board’s meeting room, where big decisions are made – under the star sky. The cone is also a constructive element, all floor slabs are fastened with visible brackets in the glass slits.

The office wings stands as separate volumes – also in the interiors. All elements are exposed as naked forms – as trees’ poetical expression of structure and energy source. The round penetrating wooden pillars have the pine trunks character and make sure that the massive wood floor slabs come forward as branches.

The wild grown forest is transformed into contemporary constructions and surfaces. Simplicity expresses cultivated use of tree trunks on the outside. The story about the process, about our modern use of wood - is exposed in both exterior and interior.

Vertical dividing plates are part of offices’ dividing walls - funtions as sun protection against low Nordic sun. Solid timber elements are exposed as naked pine trunkts. Exposure to weathering throughout time – traces are left – as patina.

Seeds of the forest – exposed as a gilden cone in the dark nordic forest. Although Viken Skog is a small office - it’s a landmark and a display window for future building materials. A future where sustainability and renewable resources will be in focus – also for architects’ work. Viken skog is a pioneer building in use of wood, in use of constructivtion elements through many floors – a reminder that also the alchemist must be given sustainable free hands.
2.5. Bergen main firestation

1st prize architectural competition 2000
Completed June 2007

Bergen, Norway
Gross area: 8 000 m²
Building cost: 180 mill NOK
Reference: BBE KF Einar Tønseth +47 55 56 56 63

Bergen fire station
Bergen is the second largest city in Norway the city between the mountains. Throughout history, Bergen has experienced many fires, traditionally most houses were made from wood. Some wooden buildings are on UNESCO list of world culture heritage. The fire station therefore is an important landmark at the entrance to Bergen city-center. In Bergen, the fire officer are ranged higher than the mayor.

The fire station is a generator for the future urban development around Store Lundegårdsvann. The fire-station turns its back to a big intersection and is functioning as a noise-barrier against the city.
It is solid and enclosed towards the highway and transparent and open towards the lake. The roof is an important fifth facade in the landscape.
The curved shape creates a secluded space facing the lake, forming an area for activities and at the same time reflects the dynamics of the road.
The building consists of four main elements, Base, Shield, Tower and the Bridge. The main elements are reflected in the expression, function, construction and use of materials.

The base is a concrete construction with a robust solid expression. It houses workshops, fire engines and technical rooms.
The tower, traditionally used to dry the fire hoses, is now used for exercises and is a symbol for the fire station from a long distance.
The main features in the shield spans above the solid concrete base as a continuing element – consisting of slab, walls and roof. The floor houses offices, bedroom, recreational rooms and other important functions in relation to the fire station. The shield opens towards the lake.

The facade towards the city is important in the small scaled timber city. The extended balcony towards the lake gives everyone direct access to outdoor recreational areas from bedrooms and offices. The big roof construction is like an umbrella, and protects against heavy rain.

The columns and the slabs are made of concrete, while the walls are made from larch, glass and copper. The shield is covered in copper on the roof and towards the road. Copper is a strong and resistant material against rain and pollution.

The wooden facade towards the city creates a historical continuity to the wooden houses. The wood also continues in the interior and makes a warm and human atmosphere for the firemen who faces many tragedies as part of their professional life.

On the road from the airport the curvatures of the main road and the fire station forms a distinct urban space and represents the gate to the city.

In the large curved wall there are several horizontally arranged window bands which emphasize the lines in the landscape and the movement of the cars. Facing the water and the city, building details together with warm wooden structures forms a calm recreational area for the firemen to resituate.

The wood is an important element in sustainable architecture. The employees and the visitors are met by warm materials in a dignified manner. The long curved building is divided into smaller segments by large outdoor terraces. The stairway is formed like cylinders in wood and white concrete.

The interior is shaped to reflect rapid emergency out calls. The spiral shaped stairway and the metal bar are repeated elements.

The fire station is an important landmark in the city. It encloses the space towards the city and Store Lundegårdsvann and have became an important building in the urban sphere. Four important key words inspired the architecture during my work: nature and scenic views around the site, the dominant curves from the highway, sustainable use of materials and future urban development of Bergen.
2.6. Hall Haaken, Henie Onstad Art Center

Completed 2002

Høvikodden, Oslo, Norway
Gross area: 1,300 m²
Building cost: 28 million NOK
Reference: Henie Onstad Art Centre, phone +47 67 80 48 80

Hall Haaken is an exhibition hall for art collector Haaken Christensen, an addition to Henie Onstad Artcenter.

The main idea for the building lies in the recognition of the close relationship between art adventure and nature adventure. The beautiful park and bay area is integrated in the interior, the recognition of the landscape and the light variations amplifies the art experience. The building’s construction is massive pine and larch which has an interesting technical and environmental potential. The wood stabilizes the moisture in the exhibition hall.
2.7. Villa Hestetun

ONE FAMILY HOUSE

Completed 2002
Drøbakk, Norway

Built in solid timber - first one family house in Norway

The house lies in a tilting terrain on a small site and great view of the Oslo fjord.

It consist of two ships of massive wood which shoots out from the longitudinal terrace in the back. The main floor is a massive block with few necessary openings, while the first floor is open to make contact with the landscape.

The massive wood constructions have a unique ability to store heat and stabilize moisture which gives a good indoor air quality, and a robust surface.

The dwelling is presented in ECOARK (NAL/NABU) as sustainable architecture and environmental effort: http://www.arkitektur.no/?nid=110228&pid0=92058
2.8. Green House in Tøyen Gardens

1st prize architectural competition 1998, Construction start in 2008

Oslo, Norway
Gross area: 3 500 m²
Building cost: 160 mill NOK
Reference: University of Oslo, Botanic Gardens,
Ellen Roaldseth, phone +47 22 85 18 40

A new addition to the otanic Garden and Museum in Tøyen has been a dream for Oslo University since the mid 60’s. It will now be realized in connection with a big park area in East Oslo, Tøyen Culturepark, which also includes the Munch Museum. The new botanic garden will become one of the cornerstones in the park for education and exhibition.

The exhibition workshop embrace a large lowered outdoor area which becomes the entrance to the building. The different gardens are shaped as separate volumes which step down in height to the south and east to open toward the sun.