



 **MARU**  
Engineering. Construction. Steel.

Maru Ehitus

# Maru Ehitus

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## An experienced and reliable partner for design and construction.

Maru Ehitus is a subsidiary of the MARU holding company established in 1991. Our goal is to provide high-quality services that meet our client's expectations. Our expertise includes general contracting, project management and design services. We have a long-term experience in design and construction of different types of buildings and structures throughout Estonia and Europe. The main strength of Maru Ehitus is our diversity. We are reliable partners to our clients at all stages of the construction process – from working out the concept to handing the keys of the completed building. As part of our construction services, we provide various forms of cooperation, based on the client's needs and the specific nature of each project.

Our wide array of construction services is based on the existence of a strong and experienced design unit within the company. Reliable management systems in combination with modern design software help us in detecting any problems during the design phase, thereby

saving time and money in the construction phase. In-house completion of the entire design process further prevents any discrepancies between different parts of the project, allowing us to choose among the most optimal engineering solutions. The implementation of our design process enables us to react promptly to our client's requirements, as well as to any changes that may occur in the course of construction. In addition, the building services are supported by subsidiaries Maru THM, which executes erection work in buildings and steel structures, cladding works, and Maru Betoontööd, which builds various reinforced concrete structures, erects reinforced concrete elements and provides formwork, cast-in-situ concrete, reinforcement and flooring works. All this shortens construction time, while allowing for the provision of optimal prices and high-quality work.

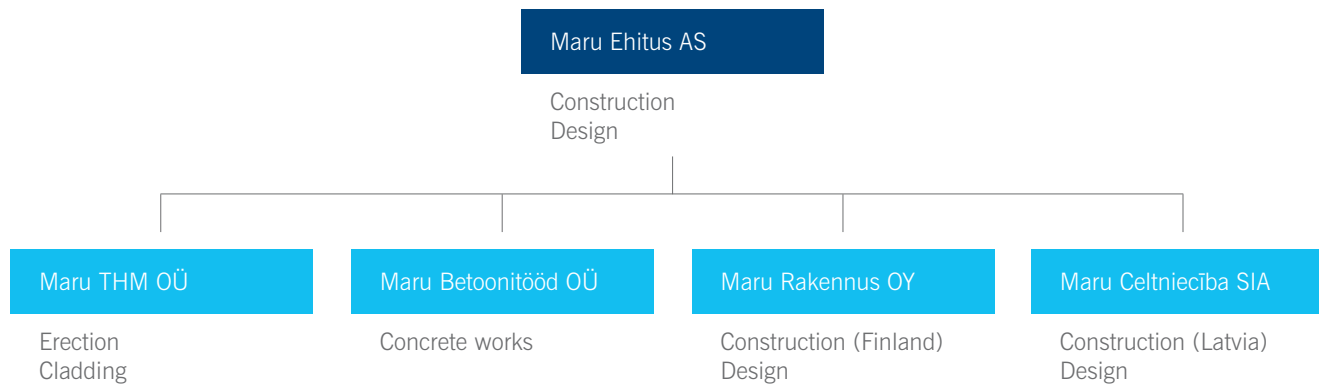
Over the past two decades, we have acquired a great deal of experience in the design of steel, concrete and masonry structures. Traditionally, design department of Maru Ehitus ranks high

among peers in Estonia and our engineers have been entrusted with many complicated building design projects that entail immense responsibility. We provide consultation and expert opinion in the fields of design and construction. We have been conducting large design projects in other EU countries and Russia. We also participate in multiple international design groups.

Furthermore, when required, we have the capacity to utilize the long-term experience of our associated company Maru Metall, one of the leading steel structure producers in Estonia.

We are members of the Estonian Association of Construction Entrepreneurs, Estonian Association of Architectural and Consulting Engineering Companies, Estonian Chamber of Commerce and Industry, and Estonian Association for Quality. We are also on the list of recognized bidders for public procurements.

# Structure, key figures & values



## EMPLOYEES (2011)

151 (incl. 16 designers, 30 project managers and site managers, 74 workers)

## TURNOVER (2011)

32 million euros

## SHAPING IMAGINATIONS

Our activities are based on a client-centered approach. All projects are equally important and attractive to us, both, the technically complicated ones that entail great responsibility, as well as the simple and optimal ones. The end result must always meet the client's expectations.

## PROFESSIONAL TEAM

We highly appreciate quality and professionalism, the foundation of which is taking responsibility for one's actions.

## SPEED

We continually improve our management systems, and therefore we are able to react quickly in a rapidly changing world.

## TRUST

We appreciate and preserve trustworthy partner relationships at all stages of the construction and design process.

## OPENNESS

We take an open and creative approach to integrating and executing technical solutions.

# Principal areas of activity

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Maru Ehitus's areas of activity include:

## GENERAL CONTRACTING

In case of general contracting, we guarantee high quality of work and on-time execution. We take responsibility for completing the project at the contracted price.

## DESIGN AND BUILD CONTRACTING

In case of a contract for design and build contracting, we also execute the design work, based on the client's initial task.

## BUILDING PROJECT MANAGEMENT

In case of a project management contract, we agree upon a management fee based on the principle of transparent invoicing of the entire design and construction process with full responsibility.

## DESIGN

We execute the following design assignments: development of a conceptual design based on a business plan; general design and project management of design; architectural design; design of timber, concrete, steel and masonry

structures; preparation of renovation projects; preparation of expert opinion; compilation of detailed planning, design of water and sewage systems; preparation of production drawings for construction elements. The following software is used: TEKLA, StruCAD, AutoCAD, StaadPRO, ARSA, IBM Lotus Notes, etc.

## REAL ESTATE DEVELOPMENT AND PROCUREMENT OF BUILDING LOTS

Development of greenfield lands from working out the concept to delivering the keys for the completed building.

## RENOVATION OF APARTMENT BUILDINGS

We evaluate and assess a building as a whole and renovate it as a whole. We offer preliminary consultation, and if necessary conduct a cost-benefit analysis, provide assistance with obtaining a loan and support, prepare and submit the complete project (including architectural-constructive element and special sections). To guarantee that we meet our client's expectations, renovations will only be provided to the entire building as a whole.

Services provided by subsidiaries:

## MARU THM

Erection of building structures; installation of prefabricated steel and concrete structures.

## MARU BETOONITÖÖD

Foundation works; concrete, form and reinforcement works of monolithic walls, ceilings, columns, beams and stairs; reinforced concrete elements erection; construction of concrete floors.

## MARU RAKENNUS

General contracting in Finland focusing on production facilities and industrial buildings.

## MARU CELTNIECĪBA

General contracting in Latvia focusing on production facilities and industrial buildings.

### PRODUCTION AND WAREHOUSE/OFFICE BUILDINGS

- Ragn-Sells RDF (refuse derived fuel) plant
- Baltic Workboats production facility extension
- Enrichment plant in VKG Ojamaa mine
- Valga Gomab Mööbel refinement hall
- Technomar industrial building
- ASVA warehouse and office building
- Printall production plant
- Konesko warehouse and office building
- Estat Paber copybook factory
- Assistor warehouse and office building
- Baltic Disc commercial and industrial building
- Fors MW warehouse and industrial building
- Smarten Logistics logistics centre
- Tallinna Elektrotehnikatehas (ESTEL)
- Intersad warehouse

### PUBLIC AND SPORTS BUILDINGS

- K-Rauta store in St. Petersburg
- Espak store in Paide
- Ehitus Service store
- Lasnamäe Athletics Hall
- Roof structure for the multifunctional Arena Riga
- FEB Tartu sales office
- Palamuse Rural Municipality Building
- Bank of Estonia gallery
- Lilleküla Football Stadium grandstands

### INDUSTRIAL BUILDINGS

- Enefit-280 Oil Plant steel structures, walls and claddings
- VKG Ojamaa mine FHS (fuel handling system)
- Helme CHP (combined heat and power) plant
- Launkalne CHP (combined heat and power) plant
- Kyröskoski CHP (combined heat and power) plant
- Vao CHP (combined heat and power) plant
- Galv-Est galvanization plant
- Stora Enso Timber joist factory
- Wienerberger Aseri brick factory
- Lacquer and paint plant of Eesti Energia Tehnoloogiatööstus
- Lihula Bio-boiler house

### INFRASTRUCTURE

- Assistor storage area for cars
- Oil shale compound storage and bridge for Eesti Energia Kaevandused

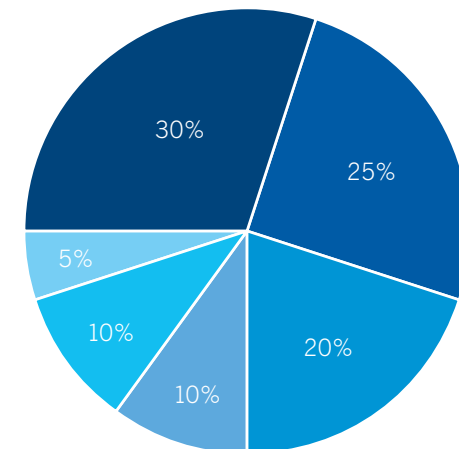
### OFFICE BUILDINGS

- MARU office building
- Kaamos Kinnisvara office building
- Frelok office building

### APARTMENT HOUSES AND DWELLINGS

- Sõpruse pst 244 apartment building renovation
- Tammsaare tee 71 apartment building renovation
- Apartment/commercial building in Tallinn on Aia street
- Apartment buildings in Pärnu on Paju street 5

### BREAKDOWN OF CONSTRUCTION AND DESIGN WORKS BY SEGMENTS:



# References

## Design

### PRODUCTION AND WAREHOUSE/OFFICE BUILDINGS

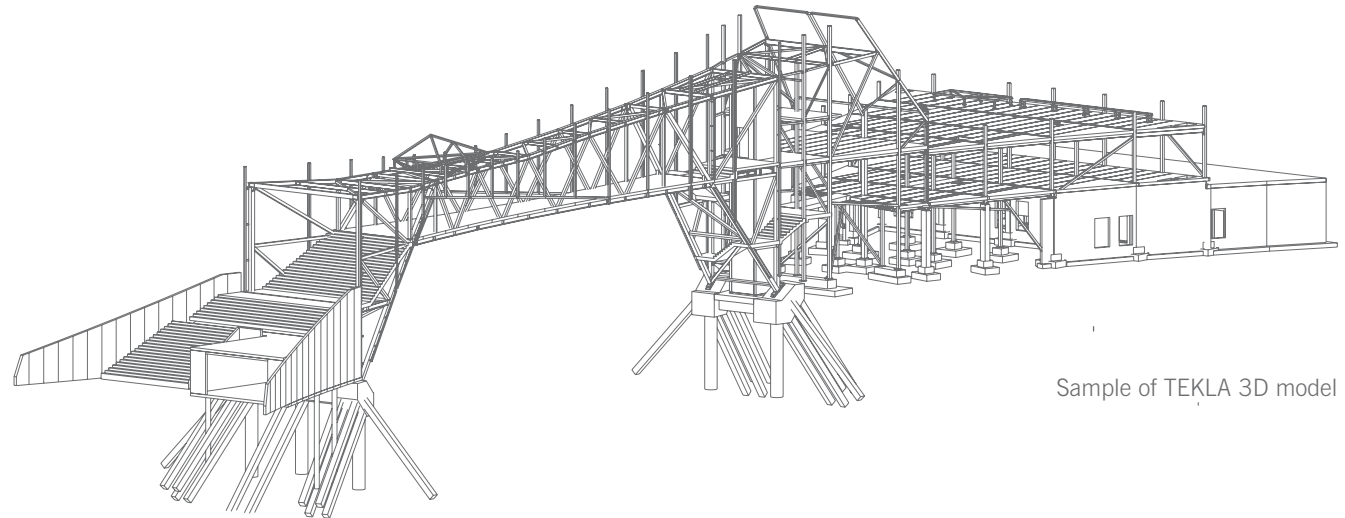
- Enrichment plant in VKG Ojamaa mine
- Nestle Purina warehouse in Kaluga Oblast, Russia
- Ragn-Sells RDF (refuse derived fuel) plant
- Baltic Workboats production facility extension
- Avies airplane hangar and office building
- Intersad warehouse and office building
- Costas Invest warehouse and office building
- Technomar & Adrem warehouse building
- Tallinna Elektrotehnikatehas (ESTEL)
- Konesko office and industrial building
- ASVA Eesti warehouse and office building
- Ämari airplane hangar

### PUBLIC AND SPORTS BUILDINGS

- K-Rauta store in St. Petersburg
- Steel structures of the Saku Arena
- Roof structure for the multifunctional Arena Riga
- Audentese Sports Complex
- Lilleküla Football Stadium grandstands
- Steel structures for football arenas in Reydarfird and Akranes, Iceland
- Lääne Värav tourism center
- Steel structures for the Tallinn Airport Annex

### INDUSTRIAL BUILDINGS

- Enefit-280 Oil Plant steel structures, walls and claddings
- Enefit-280 Fuel Handling System Civil Works
- VKG Ojamaa mine FHS (Fuel Handling System)
- Wienerberger Aseri brick factory
- Galv-Est galvanization plant
- Lacquer and paint plant of Eesti Energia Tehnoloogiatööstus



Sample of TEKLA 3D model

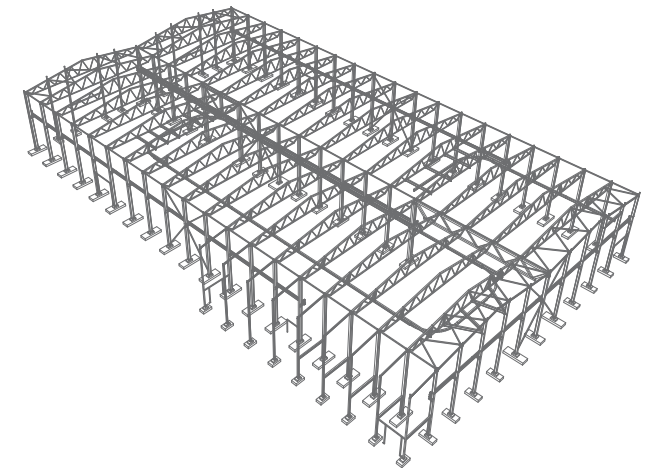
- Eesti Kraanavabrik production plant
- Awila technological buildings

### OFFICE BUILDINGS

- Baltic Disc office building
- MARU office building
- Kärđla office building

### APARTMENT HOUSES AND DWELLINGS

- Apartment buildings in Tallinn at Kunderi põik 4-8
- Apartment buildings in Pärnu on Paju street 5



Sample of StruCAD 3D model

Architecture: INSPRO OÜ



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## Baltic Workboats Production Facility Extension

### DATA

Client: Baltic Workboats  
Location: Nasva, Saaremaa  
Completion date: 2010  
Dimensions: 2,300 m<sup>2</sup>

### DESCRIPTION

Baltic Workboats is one of the largest shipbuilding companies in Estonia which designs and produces unique aluminum vessels.

To further extend the production, a brand new production facility hangar was built on the shoreline. One of the most challenging aspects was the design and construction of the 18x13 m frame of the sliding door.

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## Enefit-280 Oil Plant Steel Structures, Walls and Claddings

### DATA

Client: Eesti Energia Tehnoloogiatööstus  
Location: Auvere, Ida-Virumaa  
Completion date: 2011  
Dimensions: 5,000 tons of steel

### DESCRIPTION

Enefit-280 Oil Plant is by far the largest project in the history of Maru Ehitus due to the tonnage of its steel structures. It also serves as a perfect example to demonstrate the excellent teamwork skills of different subsidiaries within the Maru Group. Steel construction was produced by Maru Metall and designwork was done in cooperation with German engineering firm, general contractor Outotec GmbH, and the designers of Maru Ehitus and Maru Metall. Erection work was conducted by the subsidiary company of Maru Ehitus, Maru THM. Work that was completed within the estimated timeline showed the proficiency of excellent teamwork between the various facilities of the Maru Group and also provided a great experience to all.







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## Ragn-Sells Refuse Derived Fuel (RDF) Plant

### DATA

Client: Ragn-Sells  
Location: Suur-Sõjamäe 31a, Tallinn  
Completion date: 2011  
Dimensions: 8,500 m<sup>2</sup>

### DESCRIPTION

Ragn-Sells RDF Plant is unique in a way that it is capable of recycling 85% of handled waste. The technology of this refuse derived fuel plant sets all new standards in the entire Scandinavia. As a result, the high quality waste fuel supply could be used by different boiler plants in Estonia and abroad.

Design and construction of the Ragn-Sells refuse derived fuel plant was a complicated task that required the utmost responsibility, effort and learning ability of the entire Maru team. Complex technology forced strict requirements to general construction and cooperation between different international parties. BIM modeling, that is still very uncommon in Estonia, was applied in design process. Construction procedure involved various lean construction techniques.

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## Apartment Building Renovation (Swedbank Example House)

### DATA

Client: ISS Eesti  
Location: Sõpruse pst 244, Tallinn  
Completion date: 2011  
Dimensions: 3500 m<sup>2</sup>

### DESCRIPTION

The goal of Swedbank “Healthy and Economical Home” was to first time in Estonia, renovate an old apartment building in one construction phase, in order to set an example to other housing corporations. The winner of the competition was the apartment building at Sõpruse pst. 244. Other entities involved in renovations were SA Kredex, Tallinn University of Technology, Ministry of Economic Affairs and Communications, city of Tallinn, Eesti Energia, Mesa Eesti etc.

Construction works included facade and roof insulation, awning and terrace renovation, exchanging the old wooden windows, reconstruction of the entire heating system, and heat recovery ventilation system. Humidifiers, temperature sensors, and additional heating meters were installed to the exterior of the house.





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## Roof Structure for the Multifunctional Arena Riga

### DATA

Client: Merks  
Location: Riga, Latvia  
Completion date: 2005  
Dimensions: 9,000 m<sup>2</sup>

### DESCRIPTION

Riga Arena, a multifunctional arena that was built for the Ice Hockey World Championship in 2006, is used primarily for ice hockey and basketball games and large concerts. The main arches of the sports arena, which has 10,000 m<sup>2</sup> of floor space, span 72 meters. Based on the relatively large spaces between the columns and erection requirements, the main arches were constructed with spatial frames. Support junctions with a limited range of motion, which were specially designed for the structures, were used at half the arches' points of support. An integrated constructive solution allowed the installation work to be completed a month earlier than planned and for money to be saved on erection work. The entire roof structure weighs almost 500 tons. The job was recognized with the title of 2006 Steel Structure of the Year.

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## Apartment/Commercial Building in Tallinn on Aia Street

### DATA

Client: Pitek Arendus  
Location: Aia St. 4, Tallinn, Estonia  
Completion date: 2009  
Dimensions: 4,800 m<sup>2</sup>

### DESCRIPTION

The apartment building is unique for both its location between the old buildings of Tallinn's Old Town and its architectural solution, which specifies a composite structure for the frame of the terraced building. The challenge for the design team was to find a solution for the support structure comprised of complicated cantilevers and terraced landscape. The challenge for the construction team was the complexity of the building process in the restricted conditions of Old Town. For this complicated job, Andrea Hein, the Maru Ehitus project manager, received an award from the Union of Estonian Architects as the 2009 Builder of the Year.





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## Palamuse Rural Municipality Building

### DATA

Client: Palamuse Rural Municipality  
Location: Palamuse, Palamuse Rural Municipality, Jõgeva County, Estonia  
Completion date: 2010  
Dimensions: 670 m<sup>2</sup>

### DESCRIPTION

The Palamuse Rural Municipality Building is the first building ever built as a rural municipality building in re-independent Estonia. The Palamuse Rural Municipality Building is a round building that is interesting from an energy conservation standpoint. The energy consumption conforms to minimal passive house requirements – 15 kWh per square meter annually. During the construction, the builders had to deal with round walls, reed mats, clay plaster, lime paint, a green roof and geothermal heating, as well as other infrequently encountered building materials and methods.

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## Lilleküla Football Stadium Grandstands

### DATA

Client: Football Club FCF  
Location: Asula 4c, Lilleküla, Tallinn, Estonia  
Completion date: 2005  
Dimensions: 63 tons of steel

### DESCRIPTION

The roof structures built for the stadium's spectator grandstands along with their light-transmitting profile tiles are an example of the advantages of steel as a material in creating an airy and light-filled structure. The construction work was planned taking the football schedule into consideration, and the challenge was to get the spectators under cover for the right time.





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## Steel Structures of the Saku Arena

### DATA

Client: Rocca al Mare Suurhall, Lemminkäinen Estonia  
Location: Paldiski Rd. 104b, Tallinn, Estonia  
Completion date: 2001  
Dimensions: 6,600 m<sup>2</sup>

### DESCRIPTION

A multifunctional hall, which is covered by a 68-meter wide roof shell of steel structures, makes it unique and the largest arena in Estonia. This was the first wide-spanned project and it presented a serious challenge to the designers, workers and installers at MARU. The 2001 Steel Structure Award presented by the Estonian Constructional Steelwork Association speaks for itself.

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## Logistics Centre for AS Smarten Logistics

### DATA

Client: Logistika Kinnisvara  
Location: Uus-Suti Cooperative, Rae Village, Rae Rural Municipality, Harju County, Estonia  
Completion date: 2006  
Dimensions: 26,000 m<sup>2</sup>

### DESCRIPTION

The Smarten Logistics Center is one of the largest and most modern warehouses in Estonia, and since it is designed to store a variety of products, very strict requirements apply for the preservation and warehousing of goods. Very modern working conditions were created for the service personnel. About 20,000 m<sup>2</sup> of the building's floor space comprises warehousing premises with various sections. The remaining floor space consists of office and service areas. In addition to the building, the project also included the outdoor space, a firefighting pumping station, landscaping and ground maintenance.







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## Apartment Buildings in Pärnu on Paju Street 5

### DATA

Client: Maru Konstruktsioonid  
Location: Paju St. 5, Pärnu, Estonia  
Completion date: 2006  
Dimensions: 3,900 m<sup>2</sup>

### DESCRIPTION

The apartment building complex at Paju street 5 is a symbiosis (combination) of an old factory building and new architecture. Taking into consideration the needs of today's modern living environment, the majority of the apartments include balconies and saunas. A spacious roof terrace has been built on the roof of the building to enable all the residents to socialize.

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## Printall Production Plant

### DATA

Client: Printall  
Location: Peterburi Rd. 64a, Tallinn  
Completion date: 2004  
Dimensions: 13,015 m<sup>2</sup>

### DESCRIPTION

The Printall printing plant was constructed according to technological needs and physical dimensions. Constructively, the production complex comprises individual “boxes”. Since there were quite a large number of boxes and each had different dimensions, this “Lego” construction was quite a challenge for the design engineers, since there was very little time to assemble it.





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## Bank of Estonia Gallery

### DATA

Client: Merko Ehitus  
Location: Estonia St. 13, Tallinn, Estonia  
Completion date: 2004  
Dimensions: 60 m<sup>2</sup>

### DESCRIPTION

The Bank of Estonia Gallery is a spatial glass gallery in a steel structure, which is located in an enclosed interior courtyard and is a hidden architectural jewel. The spatial steel frame was built in the factory, and thereafter, cut into sections for transporting purposes, delivered to the site and reassembled. This complicated assignment provided valuable experience.

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## Steel Structures for Football Arenas in Iceland

### DATA

Client: Maru Metall  
Location: Reydarfird and Akranes, Iceland  
Completion date: 2006  
Dimensions: 300 tons of steel

### DESCRIPTION

Constructing steel supports and roof structures with a span of 80 m for two football arenas in Iceland, located in Reydarfird and Akranes, was a very serious assignment. When designing projects for Iceland, much higher wind loads had to be taken into consideration that placed greater than usual loads on the structure.





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## Lihula Bio-Boiler House

### DATA

Client: Tamult  
Location: Aia St. 16, Lihula, Estonia  
Completion date: 2009  
Dimensions: 800 m<sup>2</sup>

### DESCRIPTION

The reconstruction of the old boiler house into a bio-boiler house that is fueled by hay is a good example of the implementation of new technologies. Our job was to partially demolish the old building and build the hay warehouse. A unique detail was the fact that the hay warehouse was covered with a PVC cover, which guaranteed the fast installation of the roof and provided excellent lighting for the warehouse.

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## Steel Structures for the Tallinn Airport Extension

### DATA

Client: Maru Metall, Skanska EMV  
Location: Lennujaama Rd. 2, Tallinn, Estonia  
Completion date: 2008  
Dimensions: 465 tons of steel

### DESCRIPTION

The construction of the Tallinn Airport Extension was quite stressful – as typical for large projects – the work was done in different stages and in some cases simultaneously. The structures were complex and junctions had to be reliable. The fact that construction could not disturb the everyday activity of the airport made the entire work process even more challenging. The job was completed successfully, and a lot of new experience was acquired.





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## Combined Heat and Power (CHP) Plant

### DATA

1. Vão CHP (Vão, Estonia)
2. Kyröskoski CHP (Kyröskoski, Finland)

### DESCRIPTION

CHP plant is one of the most important type of working engagement for Maru Ehitus subsidiary, Maru THM.

The Vão CHP plant is one of the largest structures of its kind in Estonia. The relatively rapid time schedule for installation and the execution of the work during the winter, made the project quite intense. To date, this has been the highest structure that we have built (highest surface 34 m above ground).

Kyröskoski CHP was challenging due to the fact that all work was performed in a foreign country and installation work was conducted in a busy city atmosphere, surrounded by buildings.

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## MARU Office Building

### DATA

Client: MARU  
Location: Järvevana Rd. 5, Tallinn, Estonia  
Completion date: 2005  
Dimensions: 2800 m<sup>2</sup>

### DESCRIPTION

The MARU office building has a unique location in Tallinn – on the border of Lake Ülemiste and the city center. Both, the city center and the Tallinn Airport are only a five-minute drive away. Although the building is located on one of the city's important arteries, with its greenery and view of the Tallinn skyline, the building provides an attractive and calm working environment.





In order to guarantee high-quality construction and design services to the clients, we apply the following principles:

## A PROCESS-CENTERED AND SYSTEMATIC APPROACH TO MANAGEMENT

We plan our activities and assure sufficient resources in order to achieve our goals and fulfill quality, environmental and work safety requirements.

## INVOLVEMENT OF THE EMPLOYEES

We believe that all employees at Maru Ehitus affect the efficiency and quality of the company's work. We believe that the regular improvement of the employee's skills and knowledge is a precondition for providing high-quality services. We value motivated and educated workers and

promote individual development.

## MUTUALLY BENEFICIAL RELATIONS WITH OUR CLIENTS, PARTNERS AND SUPPLIERS

We believe that mutually beneficial relations increase the ability of all the parties to create value.

## A CLIENT-CENTERED APPROACH

Satisfied clients are very important to us, therefore, we try to find the best solutions that conform to the clients' requirements today and in the future.

## CONTINUAL IMPROVEMENT AND DECISION-MAKING BASED ON FACTS

We place great importance on a quality management system that is up-to-date and continually improved based on management-based

supervision.

## WORK ENVIRONMENT

We pay great attention to work safety and environmentally friendly activities, in order to guarantee a pleasant and safe work environment.

Our management system has been declared worthy of ISO 9001, ISO 14001 and OHSAS 18001 certificates by Bureau Veritas Certification.



# Recognitions and memberships

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Maru Ehitus is a member of the following:

- Estonian Association of Construction Entrepreneurs
- Estonian Chamber of Commerce and Industry
- Estonian Association of Architectural and Consulting Engineering Companies
- Estonian Association for Quality

Maru Ehitus has been recognized as a well-managed organization within the context of the 2007 Estonian Management Quality Award.

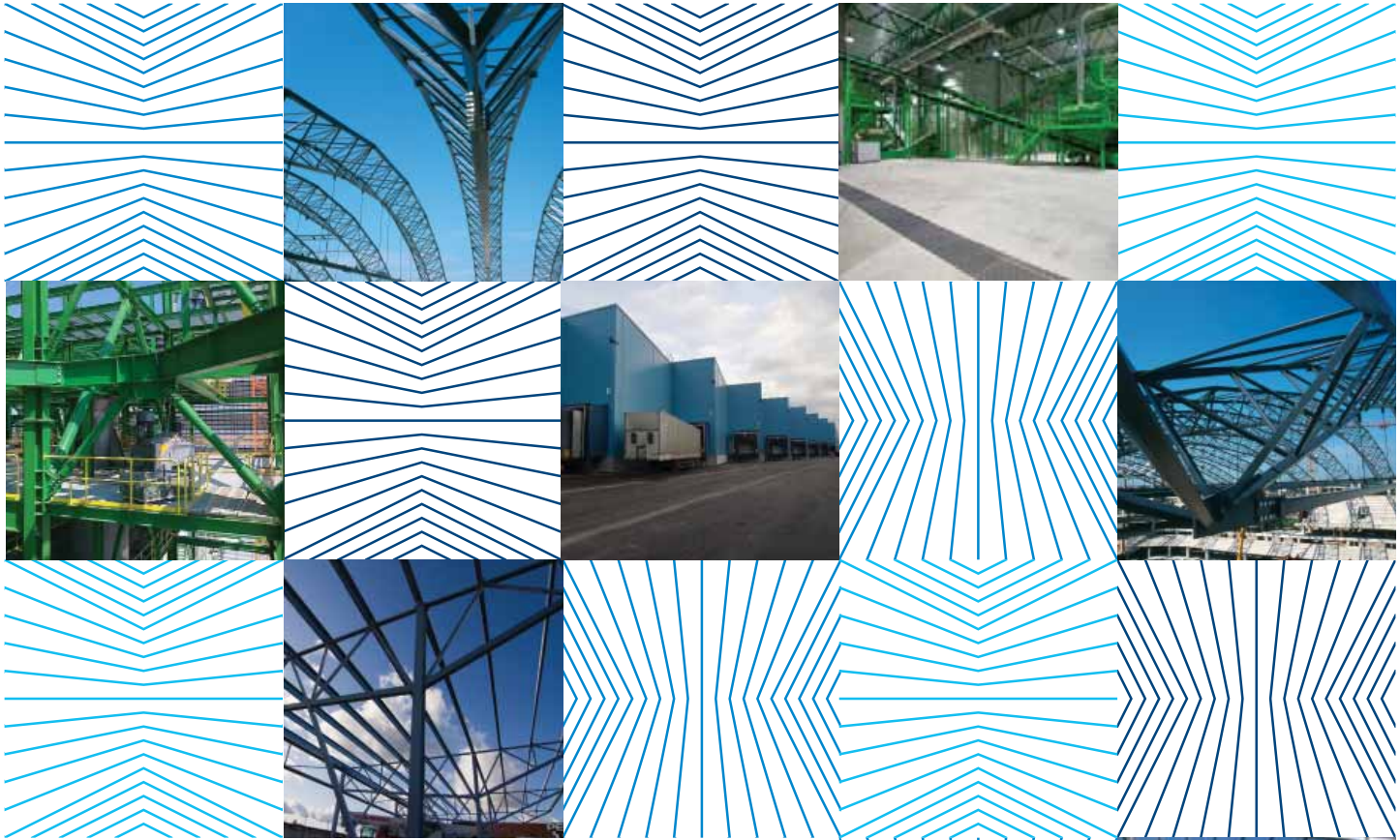
Our specialists Tambet Vähi, Marko Leemet, Kristjan Põldsalu and Margo Dengo belong to the Estonian Association of Civil Engineers.



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