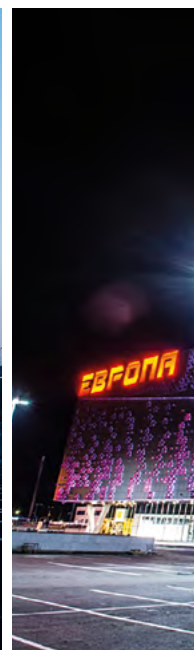


# **RUUKKI FORMA™ – DESIGN YOUR ENERGY-EFFICIENT FACADE**

RUUKKI® FAÇADE SYSTEMS – RUUKKI FORMA™

**RUUKKI**

# Energy-efficiency combined with unlimited architectural freedom



## IT'S TIME TO DEMAND MORE. Ruukki® Facade systems – Ready for you.

Ruukki® Facade systems offer a wide range of complete wall systems for industrial and commercial buildings.

Ruukki offers a new design facade system that combines high architectural standard with excellent energy-efficiency.

### Be inspired!

RUUKKI FORMA™ – Shape and color. Ready for you.

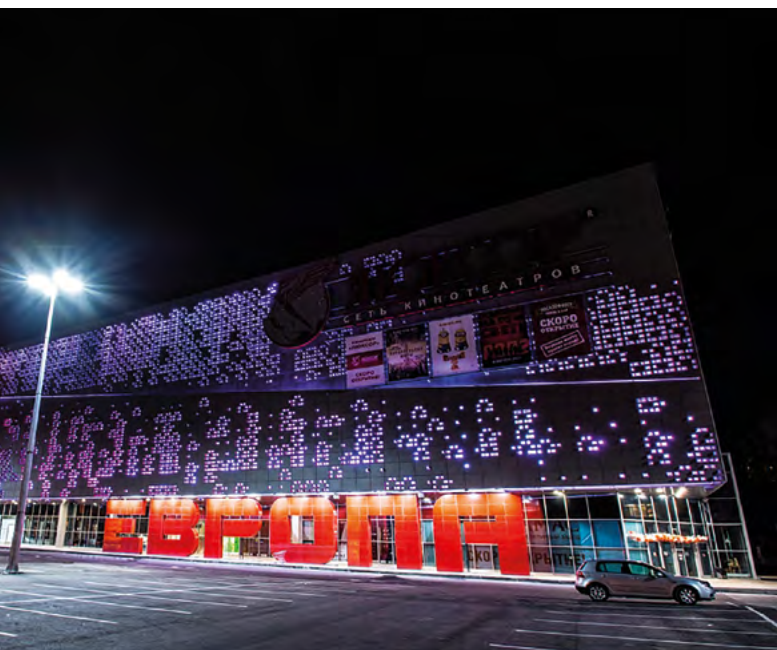
Ruukki Forma™ is a complete façade system based on Ruukki's façade products, combined with Ruukki® energy panels. Ruukki provides you a choice from a wide variety of different shapes, materials and colours.

Discover the wide variety of Ruukki Forma™ cladding options with our online tools to visualize facades:

[www.ruukki.com/designpalette](http://www.ruukki.com/designpalette)

– Only limited by your imagination.





## Save up to 20% in your buildings' energy costs

Ruukki® energy panel system creates a highly air-tight envelope. It enables you to significantly reduce heating and cooling energy consumption and can generate up to 20% savings in a building's energy costs. The good air tightness improves the building's energy class and helps in meeting the ever increasing energy-efficiency requirements set by national building regulations.

## Ruukki Forma™ all-inclusive delivery

Complete delivery includes everything:

- All needed products & accessories
- Available also with system windows
- Full design service
- Energy simulation service
- Air tightness test
- Installation by approved partner

[www.ruukki.com/ruukki-forma](http://www.ruukki.com/ruukki-forma)

## Architecturally attractive Ruukki® Solar

Ruukki® solar is an architecturally attractive solar system for generating renewable electricity. Ruukki® solar is a pre-designed and simple system, ready to be connected to grid. Together with high air-tightness, Ruukki® solar generates savings, improves buildings' energy class as well as LEED and BREEAM credits significantly.

Ruukki® Solar can be used in Ruukki Forma™ facades.

[www.ruukki.com/liberta-solar](http://www.ruukki.com/liberta-solar)

## Ruukki® emotion - Playing with dimensions

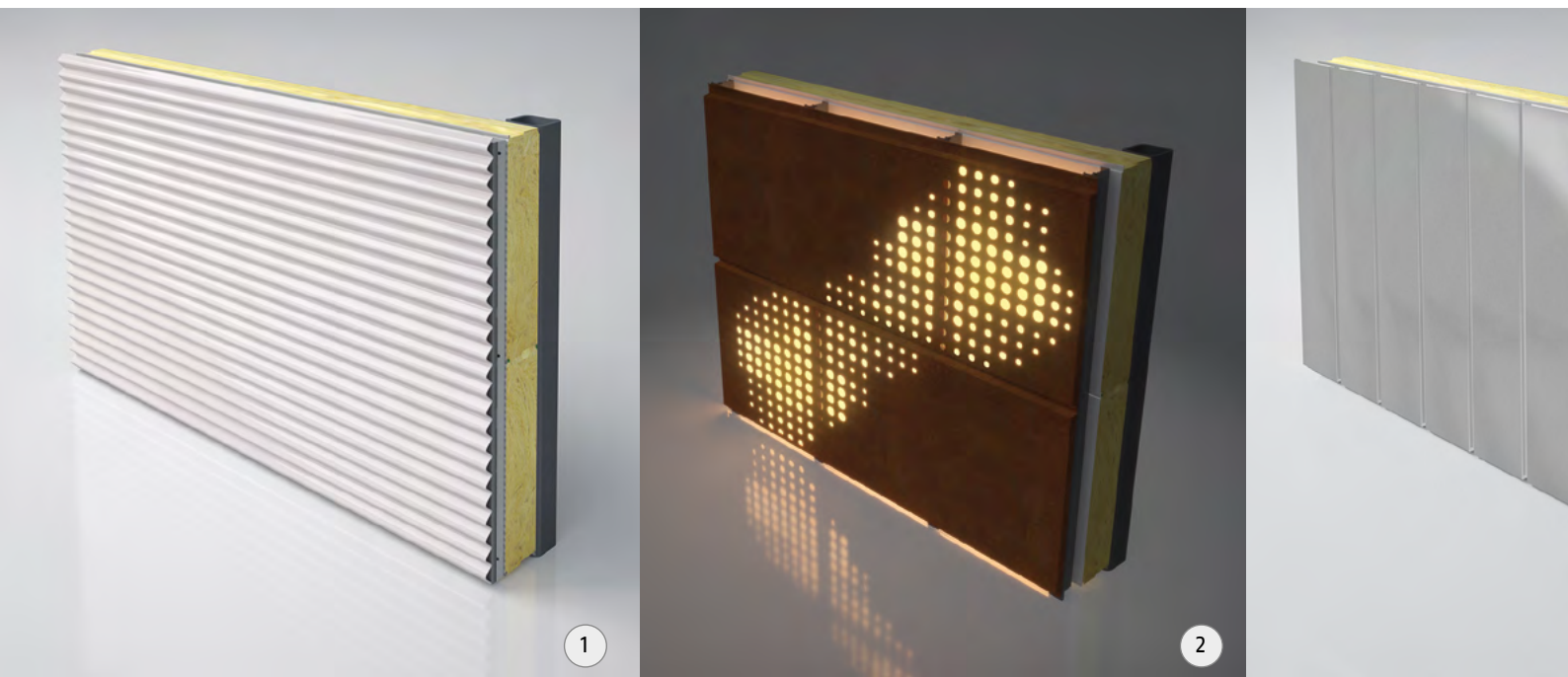
Ruukki® emotion is a complete facade system that consists of perforated cladding products and a support structure with a smartly integrated backlighting system.

Ruukki® emotion can be used in Ruukki Forma™ facades.

[www.ruukki.com/ruukki-emotion](http://www.ruukki.com/ruukki-emotion)



# RUUKKI FORMA™ BENEFITS



## Wide range of design versions

- Liberta cassettes
- Cladding lamellas
- Design profiles

## Various colours, materials and finishes

- Coatings and colours: Hiarc RR20, RR 21, RR22, RR23, RR40, RR41, RR45, RR40 matt, RR41 matt, RR45 matt. Other colours available on request.
- coated steel, aluminium, weather-resistant Cor-Ten steel, titan zinc
- also with perforation and lighting – Ruukki® emotion
- available with the anti-graffiti finish as well

## Technical details

- all the technical details processed
- effective for longer spans of columns
- vertical and horizontal directions
- the possibility of rectification shell in the system
- classification to the construction of the second DP1, DP2, DP3
- possibility of carrying out the low-energy standard and  $n_{50} = 0.6 \text{ l/h}$
- Fire resistance up to 180 minutes
- high resistance to noise



3



4



5

1. Ruukki Forma™ – Design profile Venice
2. Ruukki® emotion with perforated Liberta500 Cor-Ten and light
3. Ruukki Forma™ – Lamella Vertical 70
4. Ruukki Forma™ – Liberta™ Cor-Ten 600
5. Ruukki Forma™ – Liberta™ Solar
6. Ruukki Forma™ – Liberta™ 500
7. Ruukki Forma™ – Lamella Cor-Ten 30



6



7

# Basic technical properties of Ruukki Forma™

For more options, please ask Ruukki or visit [www.ruukki.com](http://www.ruukki.com)

## Ruukki Forma SPA E (MW)

Insulation Thickness (mm)	150	200	230
Weight (kg/m <sup>2</sup> )	23.6	27.5	30.4
U-value (W/m <sup>2</sup> K)	0.26	0.20	0.17
Sound insulation Rw (dB)	30	31	31
Wall fire resistance values & max span horizontal/vertical orientation (m):			
EI30	12/12	12/12	12/12
EI60	11.1/12	11.1/12	11.1/12
EI90	12/10.9	12/10.9	12/10.9
EI120	12/10.9	12/10.9	12/10.9
EI180	4/4	4/4	4/4
EI240	–	–	–

## Ruukki Forma SPB WE (MW)

Thickness (mm)	160	180	200
Weight (kg/m <sup>2</sup> )	23.6	25.8	27.2
U-value (W/m <sup>2</sup> K)	0.24	0.22	0.20
Sound insulation Rw (dB)	29	29	29
Wall fire resistance values & max span horizontal/vertical orientation (m):			
EI120	10.5/4	10.5/4	10.5/4
EI90	10.6/4	10.6/4	10.6/4
EI60	11.1/10.4	11.1/10.4	11.1/10.4
EI30	11.1/12.0	11.1/12.0	11.1/12.0

## Ruukki Forma SP2E X-PIR

Properties by panel thickness				
Thickness (mm)	120	160	180	200
Weight (kg/m <sup>2</sup> )	13.8	15.5	16.4	17.3
U-value (W/m <sup>2</sup> K)	0.16	0.12	0.10	0.09
Sound insulation Rw (dB)	25	25	25	25
Wall fire resistance values & max span horizontal/vertical orientation (m):				
EI15	11.9/11.8	11.9/11.8	11.9/11.8	12/11.8
EI30 / EW30	7.9/11.8	7.9/11.8	7.9/11.8	12/11.8
EI60 / EW60	–	–	–	9.1/3



# Installation



Ruukki Forma™ includes all the necessary components for complete installation. Everything from supporting structure and facade claddings to accessories such as fixings, sealants, studs and flashings is included in the delivery.

## Quick installation provides a protective cover

The base structure – Ruukki® energy panel system – is rapid to install and it provides a quick weather cover for the building. The cladding materials can be installed later, when the construction site starts to settle down and there is no longer a risk for surface damages.

# Elegant energy-efficient Bory Mall shopping centre, Bratislava, Slovakia

Bory Mall is the latest and one of the largest shopping centre in the Slovakian capital of Bratislava. The investor, Penta Invest, a Central European investment group, had clear criteria regarding the type of shopping centre to be built.

The shopping centre consists of three storeys and covers an area of 54,000 square metres, equivalent to the size of almost seven football pitches. The design of the shopping centre has especially taken into account families with children. The centre is home to a large play area and children's centre.



## Energy-efficiency and architectural added value

In future, Bory Mall will form the centre of an entire city area. Naturally, one of the requirements was that the centre would excellently meet this purpose. In addition, Penta's criteria included a high standard of architecture and energy efficiency.

## Good looks and savings with Ruukki Forma™

Airtight structures in the walls and roof reduce the energy required for heating and cooling, which in turn results in cost savings. Bory Mall is applying for BREEAM environmental certification. Façade system Ruukki Forma™ was used to create an airtight wall structure:

*"Wall structures from rival manufacturers were also considered in the early stage of the project. Ruukki Forma combines the advantages of airtightness and architectonic suitability. Another advantage is the 2-centimetre gap for cables and leads between the wall panel and Liberta Grande rainscreen panel. Ruukki Forma improves the appearance of the façade,"* says architect **Dusan Sevela** from Penta Invest.

The combined wall structure and façade also means other advantages. The building was protected from the weather much faster and the façade was installed at the final stage, to avoid possible surface damage caused by worksite machinery.

## Making architectural choices a reality

An architect is always looking for design solutions. Often manufacturers of building components keep to their own products without any alternative solutions.

*"Ruukki was an active partner in the project and wanted to find alternative solutions to solve the architectonic details. Another benefit was that Ruukki came to the construction site to seek solutions. The best end result is obtained by acting openly and in a good team spirit,"* notes Sevela.

Sevela values an active spirit when introducing alternatives: *"Ruukki always provided information about the possibilities, and focused on how the customer's choices could be made reality. A good example of the service received was creating the round corners of the shopping centre in accordance with the plans, even though Ruukki had no suitable products in its portfolio. Ruukki helped us to achieve what we set out to achieve."*





## **Bory Mall**

### **MAIN STRUCTURE**

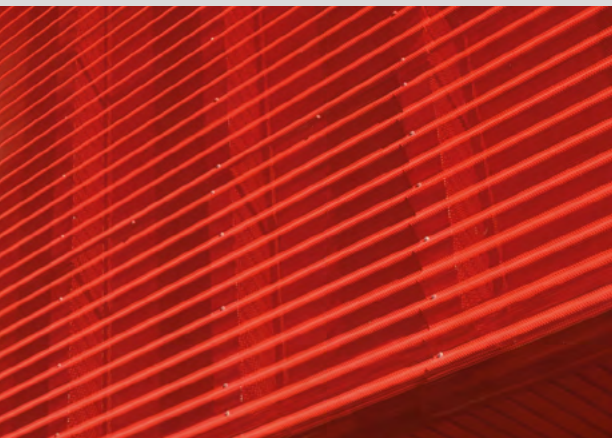
SPB140 WE Energy , 8 500 m<sup>2</sup>

### **CLADDING**

Liberta 500 Grande, RR40 matt 8 500 m<sup>2</sup>



# Ruukki Forma™ references



## Kaubamajakas Shopping Center, Pärnu, Estonia

### MAIN STRUCTURE

SPB140WE ENERGY POL RAL3020, 1 460 m<sup>2</sup>

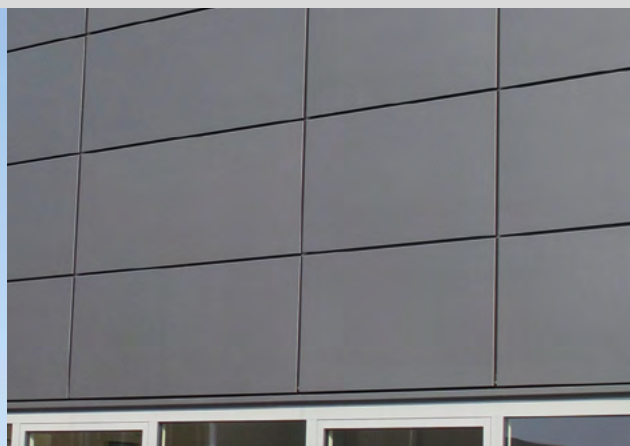
### CLADDING

Perforated 4/30 Lamella groove 20 – 486 m<sup>2</sup>

Lamella lap 60 – 134 m<sup>2</sup>

Design Oulu T10 A – 265 m<sup>2</sup>

Design Rome S34 perforated 4/30 – 510 m<sup>2</sup>



## Er-Jill Byggnads Plåt AB, Mölnlycke, Sweden

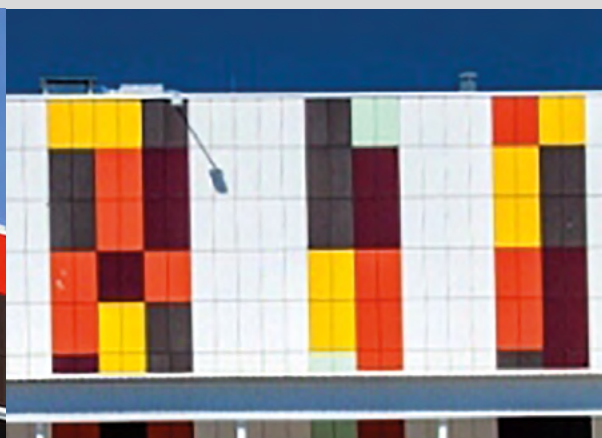
### MAIN STRUCTURE

SP2E160 X-PIR, 750 m<sup>2</sup>

### CLADDING

Liberta 500 RR41, 250 m<sup>2</sup>





## Shopping centre Mytishchi Fair, Moscow, Russia

### MAIN STRUCTURE

Sandwich panels 120 mm

### CLADDING

Liberta Original, 3 000 m<sup>2</sup>



## ADS, Vetrkovice, Czech

### MAIN STRUCTURE

SPA 160MW, 240 m<sup>2</sup>

### CLADDING

Liberta 500



# Ruukki Forma™ references



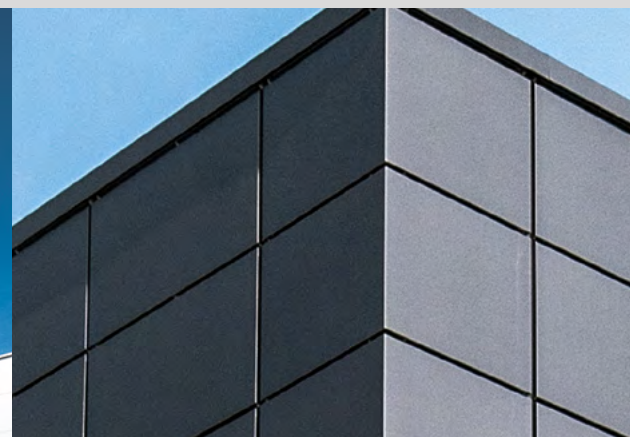
## Production hall and office Hoeckle, Klasov, Slovakia

### MAIN STRUCTURE

SPF E-PIR 2 600 m<sup>2</sup> and  
SP2B100 X-PIR Energy 240 m<sup>2</sup>, RAL 9006

### CLADDING

Liberta Grande RR 41, 150 m<sup>2</sup>



## Production hall and office building Deltrian, Kežmarok, Slovakia

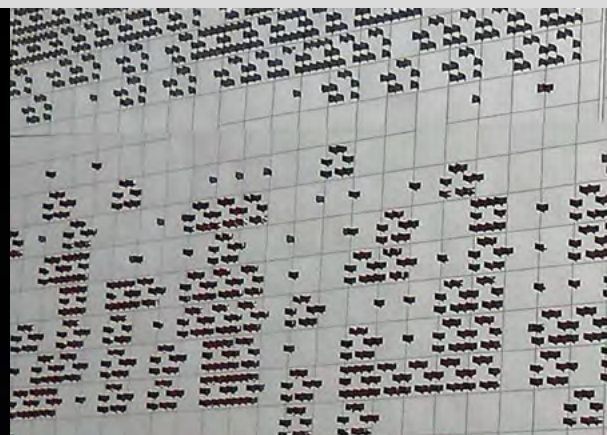
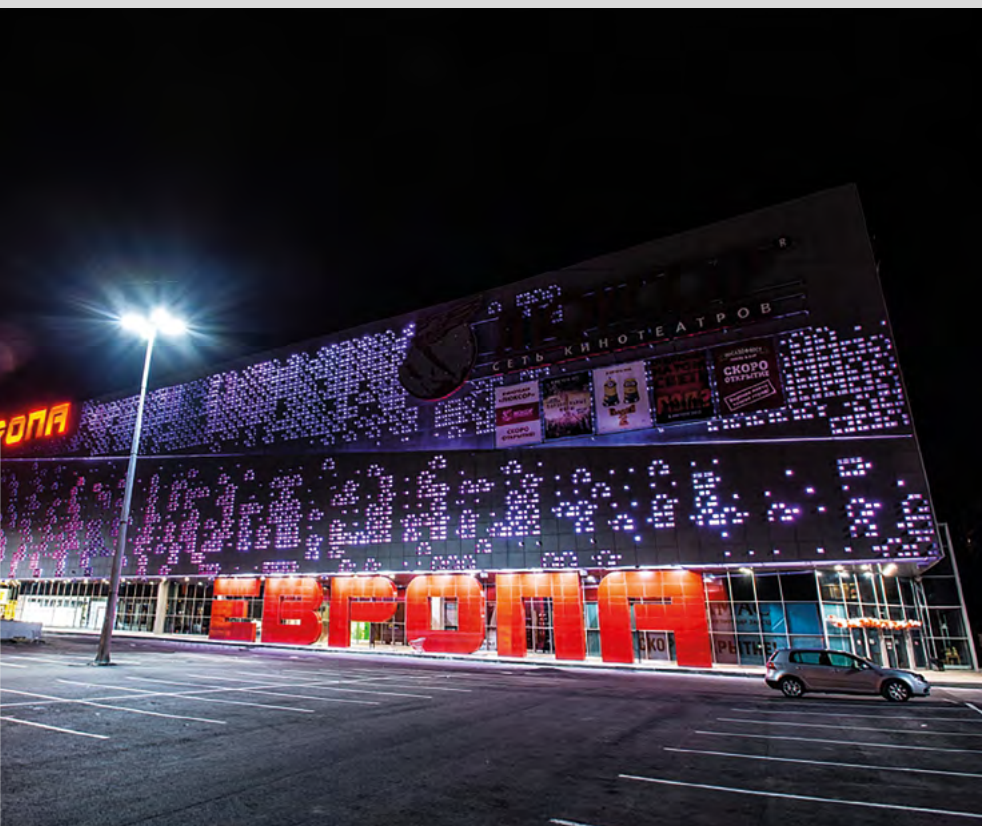
### MAIN STRUCTURE

SPB 100 W and SP2B 100 PU, 3 570 m<sup>2</sup>

### CLADDING

Liberta elegant 500 RR45, 320 m<sup>2</sup>





## Shopping centre Europe, Kursk, Russia

### MAIN STRUCTURE

Sandwich panels 120 mm, 11 000 m<sup>2</sup>

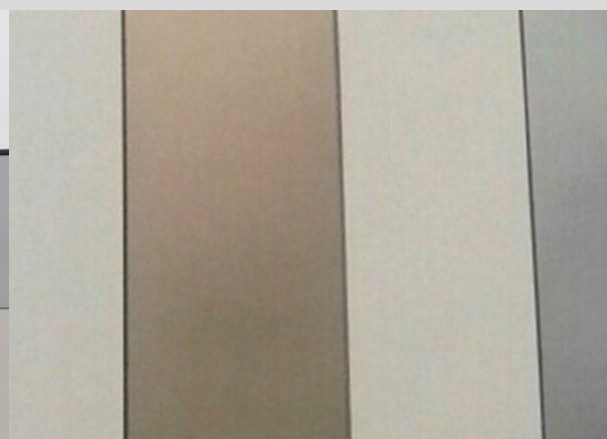
### CLADDING

Design Venice s10, Design Rome s34,

Design Paris S55 – 5 327 m<sup>2</sup>

Liberta 500 with perforated holes

270 mm x 210 mm – 1 800 m<sup>2</sup>



## Shopping centre Frýda, Frýdek Místek, Czech Republic,

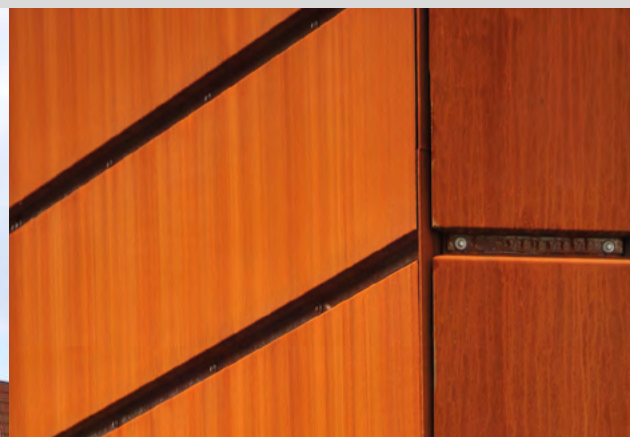
### MAIN STRUCTURE

SP2E120 X-PIR, 3 300 m<sup>2</sup>

### CLADDING

Liberta original 102 GRANDE, 3 300 m<sup>2</sup>

# Ruukki Forma™ references



## Struers, Rooper Ostrava, Czech Republic

### MAIN STRUCTURE

Sandwich panel 100 E-PIR, 1 400 m<sup>2</sup>

### CLADDING

Cor-Ten



## EDM, Nizna, Slovakia

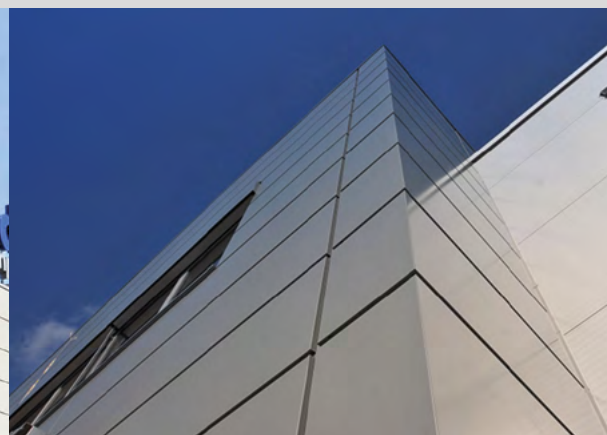
### MAIN STRUCTURE

SP2B 100 E-PIR, 1 545 m<sup>2</sup>

### CLADDING

Liberta 500 RR45, 322 m<sup>2</sup>





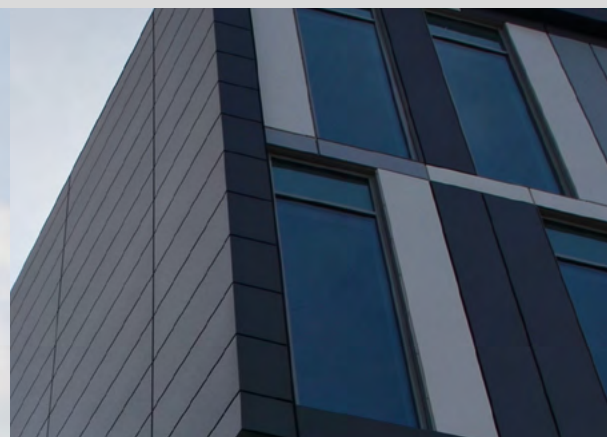
## Swoboda Stamping, Jihlava, Czech

### MAIN STRUCTURE

SPA 160MW, 700 m<sup>2</sup>

### CLADDING

Liberta Grande



## Office building Allcon, Gdańsk, Poland

### MAIN STRUCTURE

SPB160 WE, SP2E120 PIR. Allcon Park 3 – 630 m<sup>2</sup>,  
Allcon Park 4 – 630 m<sup>2</sup>

### CLADDING

Liberta elegant 500 Grande, Liberta original 102

**We work with investors who see opportunities.  
We exist for designers and builders to fulfill their dreams.  
We are here for those who bring buildings and homes to life.**



**Ruukki Construction Oy, Panuntie 11, FI-00620 Helsinki, Finland, +358 20 59 150, [www.ruukki.com](http://www.ruukki.com)**

Copyright© 2015 Ruukki Construction. All rights reserved. Ruukki and Ruukki's product names are trademarks or registered trademarks of Rautaruukki Corporation, a subsidiary of SSAB.