New Passenger Terminal Zagreb International Airport
October 2014
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Project Overview
Introduction to the Project

Scope of Project:
- the financing, design, building, operation and maintenance of a new passenger terminal and related infrastructure at Zagreb Airport, Republic of Croatia;
- the operation and maintenance of the 2 M pax capacity existing passenger terminal at Zagreb Airport and related infrastructure under a concession approach.

The new Terminal will be constructed in two Phases namely Phase 1 initially and Phase 2 in time, when certain conditions are experienced to increase from 3.5 to 5 and more M pax annual figures.

Philosophy:
- The new terminal building is aimed to give a new face to Nation's capital and help Zagreb to fully exploit its potential as a center of attraction in Europe. The new terminal building is projected to stand out in the region with its contemporary design and state-of-the-art technological infrastructure.
- Integrating design, construction and operations in the terminal would be crucial to ensuring passenger satisfaction.
- Zagreb International Airport would have significant role in the region, due to the total investment and professional engagement of all partners in the consortium.
- For the next three years, consortium will be focused on attracting new airlines to increase passenger numbers and air traffic figures.
Introduction to the D & B Contract

D&B Contract between MEĐUNARODNA ZRAČNA LUKA ZAGREB d.d. and BOUYGUES BATIMENT INTERNATIONAL, dated 30 November 2013.

Scope of Construction Works Highlights:

• Refurbishment of Existing Terminal building (BHS/Check-ins/Departure Area/Duty Free shop)
• Detailed Design development
• Construction of new Passenger Terminal Building for phase 1, Apron+Taxiways connecting to existing runway+external works.
• Drainage of existing runway, taxiways, apron
• Enabling works, airside & landside works, services & utilities, terminal building & building services, aeronautical equipment, lifts & escalators, project management and other responsibilities are carried out under the D & B contract.

Scheduled Completion:

• 36 months, Dec 2013-Dec 2016
Introduction to Project Master Plan
New Passenger Terminal 3D
New Passenger Terminal 3D
Main Consultants & Architects

• **External Works**

*Viadukt* (Equity Partner in the Concessionaire of Zagreb International Airport) is the subcontractor for the entire scope of the External Works.

• **Consultants & Designers**

*IGH, Kincl & Neidhardt & Radic* are the Designers of the project (Croatian).

Team completed by the input of International consultants:
- Wind Tunnel test (*Waker*),
- Fire strategy (*Exova*),
- Acoustic specialist (*BYTP*),
- IT (*C2S*)
- Road Traffic & Drainage consultant (*Egis*),
- Airport Equipment specialist (*ADPI*).
## Main Subcontractors for the Project

<table>
<thead>
<tr>
<th>Subcontractor</th>
<th>Description</th>
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<tbody>
<tr>
<td><strong>Viadukt</strong></td>
<td>In charge of all external works including, roads, parking, Apron, taxiway, viaduct, underpass, airside and landside drainage system with retention basin and pumping complex</td>
</tr>
<tr>
<td><strong>Kamgrad</strong></td>
<td>Concrete structure works and internal partition (brickwall and drywall)</td>
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<tr>
<td><strong>ZM</strong></td>
<td>Roof Steel Structure and Facade</td>
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<tr>
<td><strong>KFK</strong></td>
<td>Roofing Contractor</td>
</tr>
</tbody>
</table>
Major Project in Croatia – in numbers

- 65 000 m² of floor area
- 35 000 m³ of concrete (NPT)
- 5 000 tons of rebar
- 2 000 Tons of steel structure
- 3D Frame Roof
- Roofing: 35.000 m²
- Excavation: 500.000 m³
- Concrete: 40.000 m³ (ext works)
- Drainage: 35.000 ml
- Asphalt: 250.000 m²
- 8 Contact stands (PBB)

- Number of BBI staff: 65
- Actual number of workers: 450
The NPT is a 4-level building, comprising of the rectangular main body (passenger processor), extending into two asymmetrical piers (western pier for international departures and arrivals, eastern for domestic traffic).

- First two levels are used for arrivals and the second two for departures.
- Connected to the north façade are 8 PBB’s.
- Structural frame of the building consists of the reinforced concrete circular columns and beams with combined 7.2 m and 14.4 m spans, the post-tensioned concrete slabs and the 4 reinforced concrete cores containing vertical communications.
- Departure level is accessible to vehicles by the reinforced concrete viaduct on the front façade. Above the concrete structure is the undulating steel spatial frame, combining the roof of the main body and piers with the northern façade.
- Steel frame forms the double height volume of space on both landside and airside.
- South, east and west facades are made as flat aluminum curtain walls with structural glazing.
- Roof is partially glazed, and partially covered with state-of-the-art aluminum cladding.

The building contains all the needed infrastructure of the 21st century airport terminal and is designed to be operated under Schengen regime.
Design Features – Steel Structure 3D
Design Feature – Roofing

Roof layers from Steel structure to Standing Seam

Section on Roof gutters

3D modeling Zagreb International Airport
Design Feature – Facade

3D modeling of connection between Terminal Building and Piers

Typical detail Terminal Straight facade

North Facade 3D modeling
Work Progress & Site Photos
### Current Work Progress

<table>
<thead>
<tr>
<th>TYPE OF ACTIVITY</th>
<th>DESCRIPTION</th>
<th>PROGRESS September 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EXISTING TERMINAL WORKS COMPLETED</strong></td>
<td></td>
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<tr>
<td><strong>FENCE INSTALLATION</strong></td>
<td>MILITARY FENCE HEIGHT - 1.4 m 100%</td>
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<tr>
<td></td>
<td>AIRSIDE FENCE HEIGHT - 2.4 m 100%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MILITARY AIRSIDE FENCE HEIGHT - 2.4 m 100%</td>
<td></td>
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<tr>
<td><strong>TREE CUTTING</strong></td>
<td>AREA 1 LANDSIDE 100%</td>
<td></td>
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<td></td>
<td>AREA 2 AIRSIDE 100%</td>
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<tr>
<td></td>
<td>AREA 3 MILITARY MG AIRSIDE 9%</td>
<td></td>
</tr>
<tr>
<td><strong>DEMOLITION</strong></td>
<td>ALL AREAS 100%</td>
<td></td>
</tr>
<tr>
<td><strong>SITE OFFICES INSTALLATION</strong></td>
<td>SECURITY ACCESS CONTROL, CCTV, 2 GUARD/SECURITY STATIONS (+ fiber optical and other integrated temporary services)</td>
<td>100%</td>
</tr>
<tr>
<td><strong>BATCHING PLANT INSTALLATION</strong></td>
<td></td>
<td>95%</td>
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<tr>
<td><strong>EXTERNAL WATER SUPPLY NETWORK</strong></td>
<td></td>
<td>100%</td>
</tr>
<tr>
<td><strong>EXTERNAL POWER SUPPLY</strong></td>
<td></td>
<td>100%</td>
</tr>
<tr>
<td><strong>EXISTING FIBER OPTIC CABLES RELOCATION (based on information available so far)</strong></td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td><strong>EXCAVATION</strong></td>
<td>NPT PLATFORM 100%</td>
<td></td>
</tr>
<tr>
<td><strong>FOUNDATIONS</strong></td>
<td>NPT</td>
<td></td>
</tr>
<tr>
<td><strong>SUPERSTRUCTURE (VERTICAL ELEMENTS: COLUMNS, WALLS)</strong></td>
<td>NPT 50%</td>
<td></td>
</tr>
<tr>
<td><strong>PLUMBING IN THE FOUNDATIONS</strong></td>
<td></td>
<td>80%</td>
</tr>
<tr>
<td><strong>EARTHING AND LIGHTNING PROTECTION IN FOUNDATIONS</strong></td>
<td></td>
<td>95%</td>
</tr>
<tr>
<td><strong>LANDSIDE SERVICE ROAD</strong></td>
<td>Subbase 100%</td>
<td></td>
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<tr>
<td></td>
<td>Asphalt 95%</td>
<td></td>
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<tr>
<td><strong>AIRSIDE SERVICE ROAD</strong></td>
<td>Subbase 75%</td>
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<tr>
<td></td>
<td>Asphalt 0%</td>
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<tr>
<td><strong>POTABLE WATER TANK</strong></td>
<td>Excavation 10%</td>
<td></td>
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<tr>
<td></td>
<td>Foundation 100%</td>
<td></td>
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<tr>
<td><strong>MAIN ACCESS ROAD</strong></td>
<td>Subbase 25%</td>
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<tr>
<td></td>
<td>Asphalt 0%</td>
<td></td>
</tr>
<tr>
<td><strong>APRON</strong></td>
<td>Excavation 30%</td>
<td></td>
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<tr>
<td><strong>AIRSIDE DRAINAGE</strong></td>
<td>Collector installation 10%</td>
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<tr>
<td><strong>EXISTING TERMINAL WORKS</strong></td>
<td></td>
<td>100%</td>
</tr>
<tr>
<td><strong>SECTION 1 - DOMESTIC BOARDING LOUNGE</strong></td>
<td>Extension of Duty Free Shop 100%</td>
<td></td>
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<tr>
<td></td>
<td>Airlines Services counters 100%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Extension of women toilets 100%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Utilities and air extraction for smoking room 100%</td>
<td></td>
</tr>
<tr>
<td><strong>SECTION 2 - INTERNATIONAL BOARDING LOUNGE</strong></td>
<td>Modification of signage 100%</td>
<td></td>
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<tr>
<td></td>
<td>New Café bar 100%</td>
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<tr>
<td></td>
<td>Smoking cabin – preparation works 100%</td>
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</tr>
<tr>
<td></td>
<td>Women toilets extension 100%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>New passenger services counters 100%</td>
<td></td>
</tr>
<tr>
<td><strong>SECTION 3 - GATE 7</strong></td>
<td>Installation of the evacuation door 100%</td>
<td></td>
</tr>
<tr>
<td><strong>SECTION 4 - CHECK-IN AREA</strong></td>
<td>Relocation/Integration of X-rays 100%</td>
<td></td>
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<td></td>
<td>BHS erection 100%</td>
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<tr>
<td><strong>SECTION 5 - LIGHT IMPROVEMENTS</strong></td>
<td></td>
<td>100%</td>
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<tr>
<td><strong>SECTION 6 - CAR PARK AREA</strong></td>
<td></td>
<td>100%</td>
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<tr>
<td><strong>ADDITIONAL GRANTOR WORKS</strong></td>
<td></td>
<td>UNDERPASS 95%</td>
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**EXISTING TERMINAL WORKS** completed

- **Section 1** – Construction works in Domestic boarding lounge:
  - Increasing of the domestic departure lounge by adding approx. 200 m2 on the 1st floor, with café bar and connection for the planned smoking cabin.

- **Section 2** – Construction works in International boarding lounge:
  - Duty free shop extension
  - New Café bar
  - Smoking cabin – preparation works
  - Women toilets extension
  - New passenger services counters

- **Section 3** – Construction works in Gate 7 area:
  - Installation of the evacuation door.

- **Section 4** – Capacity Check-in increase:
  - Additional third check-in line with four new counters is provided to increase the capacity of the existing terminal. New baggage handling line added into the sorting area.

- **Section 5** – Light improvements:
  - Lighting of public area in front of check-ins is improved.

- **Section 6** – Car parks improvements:
  - Car parks No 1 & 3 – completely new asphalt surface and markings, repair of drainage

Substantial completion date was scheduled for 25.11.2014, but the final handover planned for 07.09.2014. (2.5 months in advance)
Beginning of the Works (1/4)

Mid April: platform ready to start foundations

End April: first crane installation and start of foundations

End May: foundations progress
Beginning of the Works (2/4)

Mid June: backfilling in progress

End June: GF columns, start of verticals

End July: Level 1 slab

October: 2nd Level
Underpass Progress

Section S12 in progress

View of underground section S

Opening of Underpass

Section T7 covered
External Works

January: starting of the site - demolition

February: fencing (airside/landside) and tree felling

March – April: preparation of platform for NPT
Existing Terminal
NPT Key Dates
NPT Key Dates

NPT Key Activities/Dates
- Execution of Concession Agreement/Financing Agreement – 02.12.2013
- Site Handover Date – 05.12.2013
- Site Commencement Date – 18.12.2013
- 1st Stone Laying Ceremony – 21.05.2014
- Expropriation of other Land Plots (Car Park etc.) – 04.09.2014
- Existing Military Base Decanted – 17.09.2014
- Existing Terminal Works including International Boarding Lounge Completion – 29.09.2014
- Underpass (overpass) and Landside Service Road Access – 06.10.2014

NPT Forthcoming Key Activities by End 2014
- Completion of Detail Design
- Commencement of Structural Steelworks
- Commencement of MEP Installations in NPT
- Commencement of Retention Basin Area Works

NPT Construction Future Key Activities Dates
- New Roads Connection to Access the New Terminal Building – 06.05.2016
- Start Testing and Commissioning – 29.05.2016
- Substantial Completion Date – 03.12.2016

Above contractual completion dates may be subject to earlier achievements, if a power on construction progress is effective.
Thank You