ARCHITECTURAL SOLUTIONS BY THE EXAMPLE OF PEDESTRIAN BRIDGES MADE OF ALUMINIUM ALLOYS

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HEAD OF TRANSPORT INFRASTRUCTURE AREA

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ALUMINIUM ASSOCIATION

EXPERIENCE IN DESIGNING AND CONSTRUCTING PEDESTRIAN OVERPASSES WITH SPANS MADE OF ALUMINIUM ALLOYS IN RUSSIA

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2017
Nizhny Novgorod Region

2017
Moscow

2018
Krasnoyarsk

2020
Tula

In total, 8 pedestrian overpasses have been built since 2017:

- Nizhny Novgorod Region — 2 facilities

Customer: the Government of the Nizhny Novgorod Region

Project design documents: developed based on project specific technical specifications approved by the Ministry of Construction of the Russian Federation

Producers: GS-Rezerv LLC, JSC "UC RUSAL TH", JSC "AMR", JSC "Arconic SMZ", CJSC SESPEL Cheboksary enterprise

- Krasnoyarsk — 3 facilities

Customer: Municipal Public Institution "Capital Construction Office", Krasnoyarsk

Project design documents: developed based on project specific technical specifications approved by the Ministry of Construction of the Russian Federation

Producers: KraMZ LLC and JSC "UC RUSAL TH", JSC "Giprostroymost", Ulyanovsk

- Moscow — 2 facilities (в природном парке «Яуза»)

- Tula — 1 facility

Customer: the Government of the Tula Region

Project design documents: developed based on

SP 443.1325800.2019 "Bridges with structures made of aluminium alloys. Design rules".

Designer: Morissot Design Institute

Producers: KraMZ LLC, JSC "UC RUSAL TH"

EXAMPLES OF FACILITIES BUILT IN 2020

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"Pedestrian overpass over automobile road pr. Vostochny bypass in Tula"

Span length – 41.22 m.

Span weight – 30.0 t.

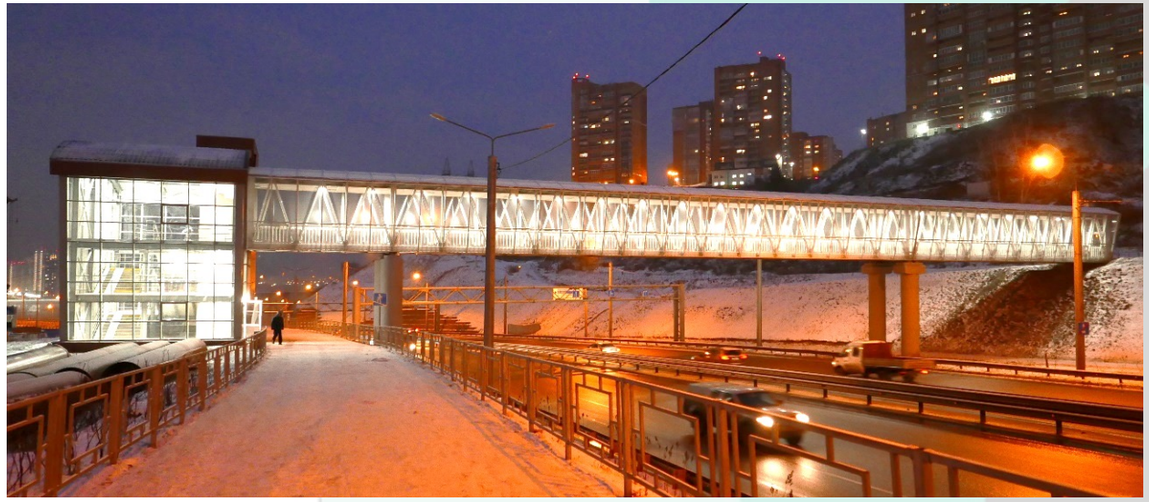
(KRAMZ – extrusion AD 35T1, AMR – rolled products 1915T1)

Customer: the Government of the Tula Region

State Institution of the Tula Region "Tulauprador"

Construction period: May-October 2020

"Pedestrian overpass over Volochaevskaya street, Krasnoyarsk"



Full span length – 63 m (19.5 x 43.5 m)

Span weight – 41.1 t.
(KRAMZ – extrusion AD 35T1)

Customer: Municipal Public Institution "Capital Construction Office", Krasnoyarsk

Construction period:

Q3 2019 – September 2020

ARCHITECTURAL FENCING OF THE MOSCOW ZOO PEDESTRIAN BRIDGE

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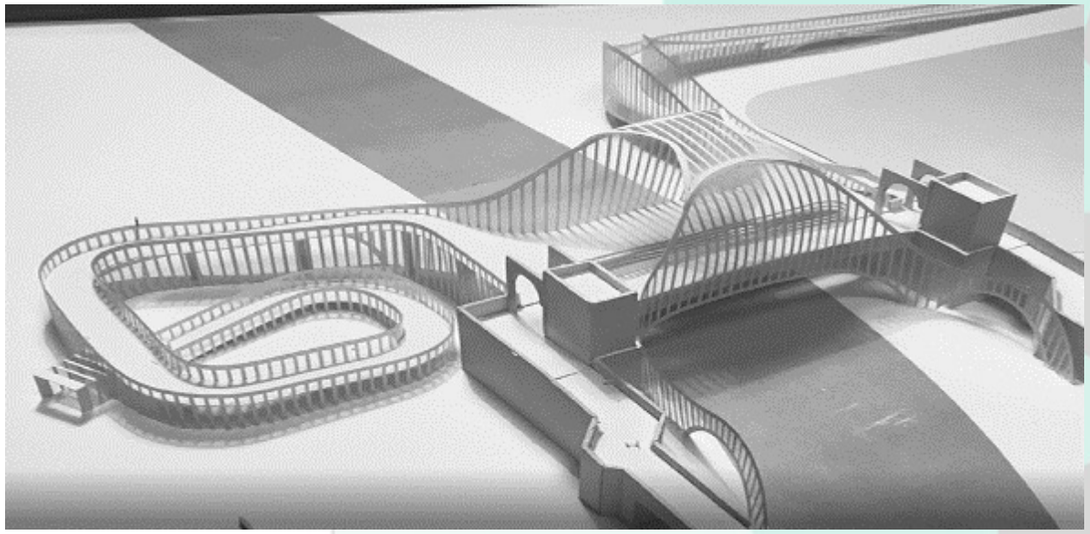
Design period: August — October 2020

Construction period: Q3 2020 — September 2021

Customer: State Enterprise “Civil Construction Office”, Moscow

Designer-General contractor: GP-MFS LLC

Specific amount of metal: 52 t (architectural fencing)



ARCHITECTURAL FENCING OF THE MOSCOW ZOO PEDESTRIAN BRIDGE STRUCTURAL 3D-MODELING

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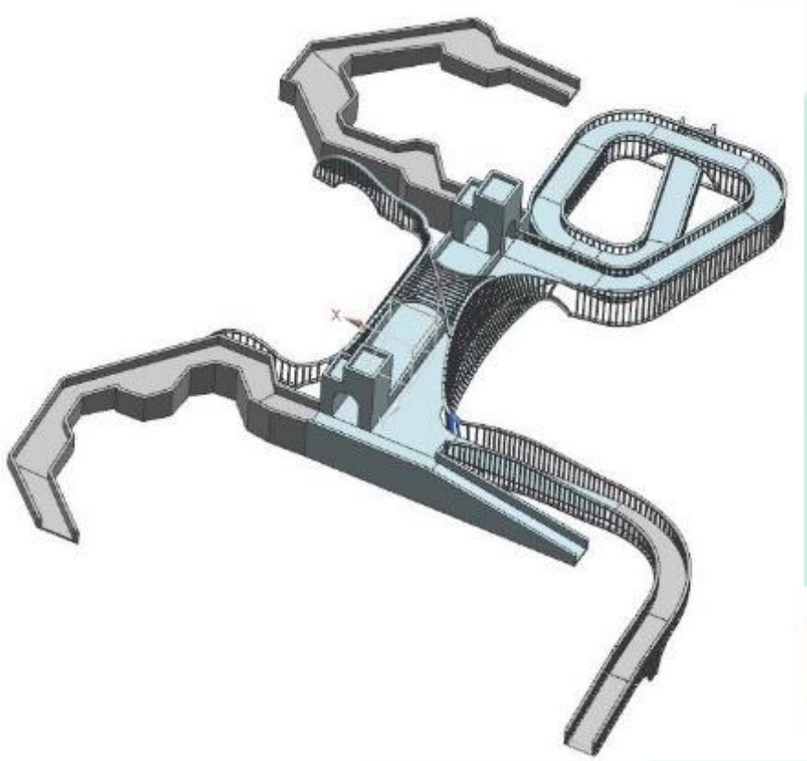

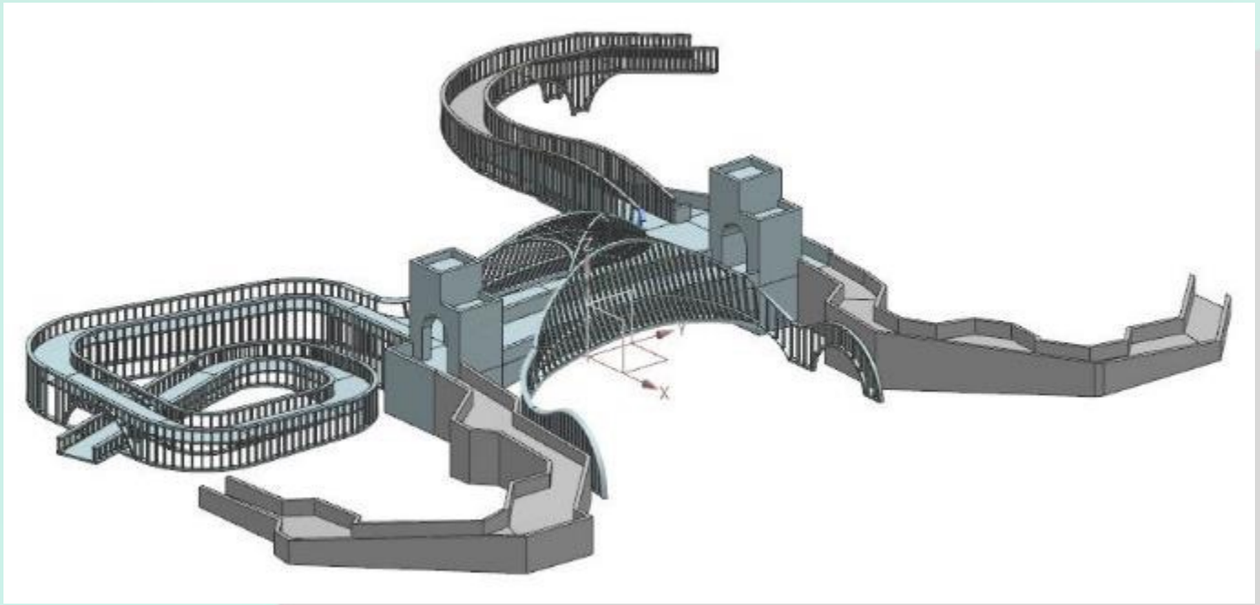

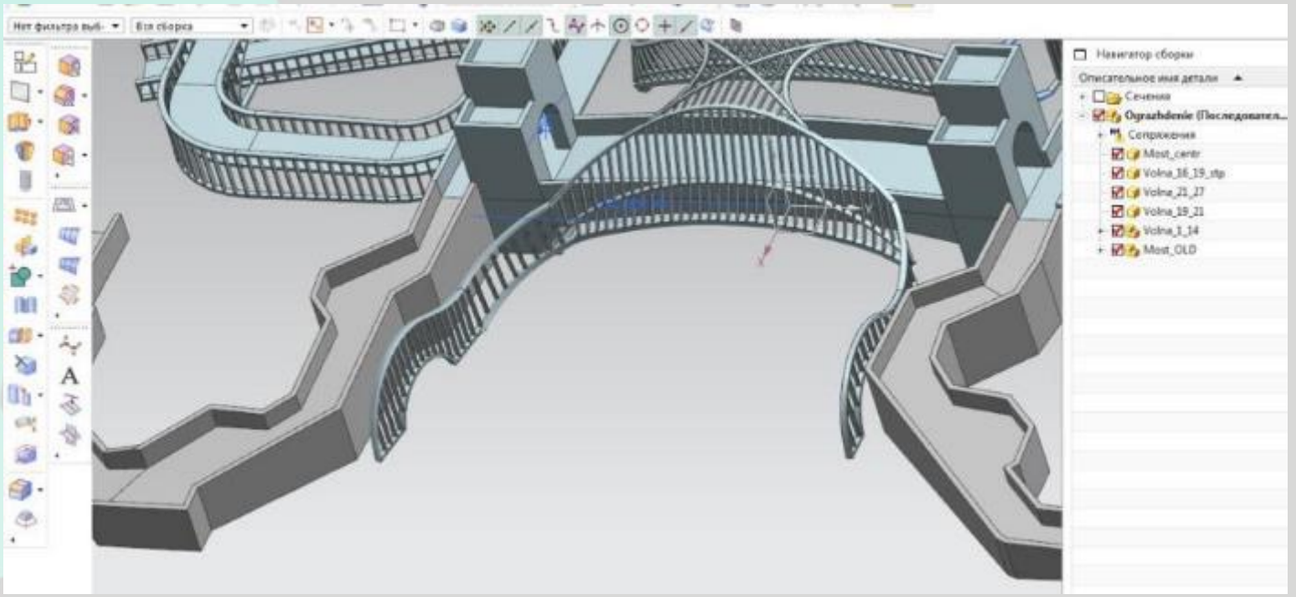

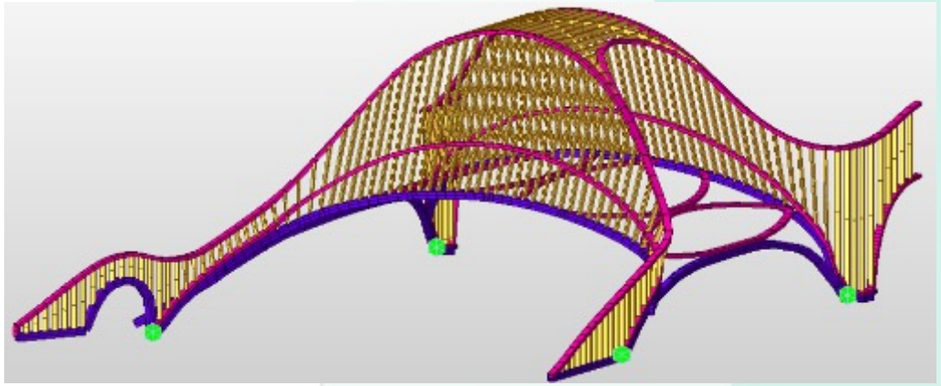

ARCHITECTURAL FENCING OF THE MOSCOW ZOO PEDESTRIAN BRIDGE FACILITY CONSTRUCTION, MAY 2021

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ARCHITECTURAL FENCING OF THE MOSCOW ZOO PEDESTRIAN BRIDGE FACILITY CONSTRUCTION, AUGUST 2021

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CONSTRUCTION OF A PEDESTRIAN BRIDGE IN BOR CITY DISTRICT, NIZHNY NOVGOROD REGION

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Full span length – 121 m.

Span weight – 62 t.

Customer: Municipal Public Institution “Borstroyzakazchik”

Designer: Project Institute “Volgaavtodorproject”

Architectural solutions: Gorshunov’s Bureau “Gora”

Construction period: November 2020 — October 2021

The pedestrian bridge is located over the bypass road and connects the central part of Bor with the bank of the Vezloma river. It is a part of the Ist construction stage of integrated improvement “Bor Volgorechie” and serves as an observation site overlooking Nizhny Novgorod.

CONSTRUCTION OF A PEDESTRIAN BRIDGE IN BOR CITY DISTRICT, NIZHNY NOVGOROD REGION

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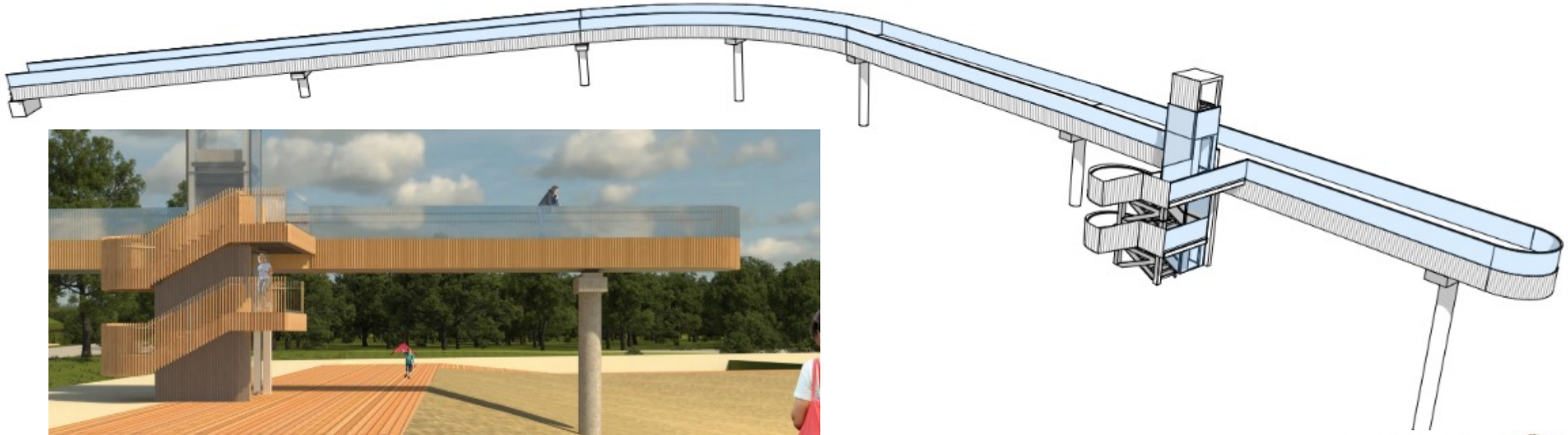

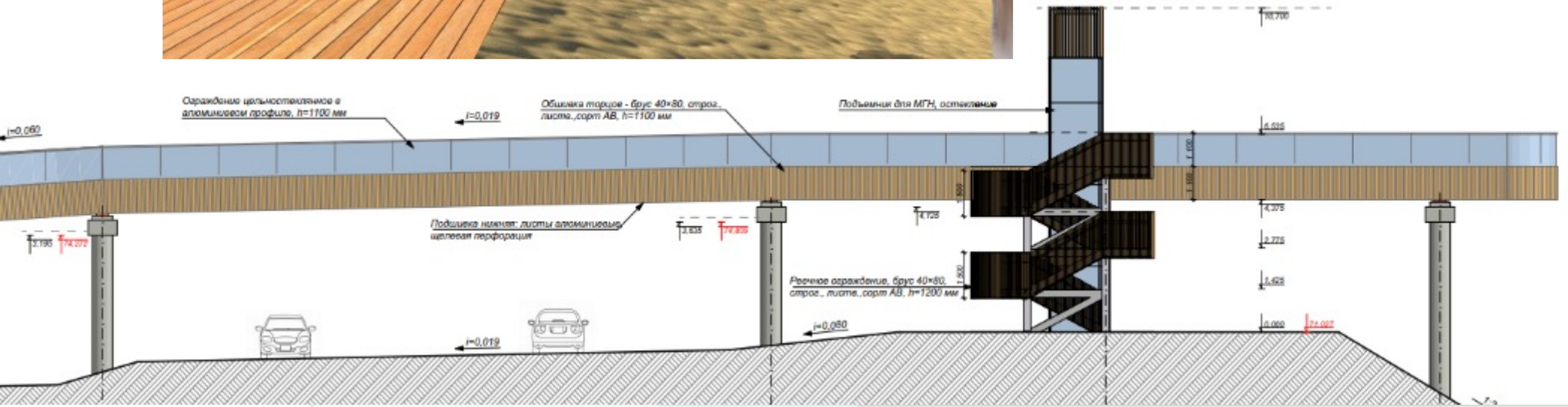

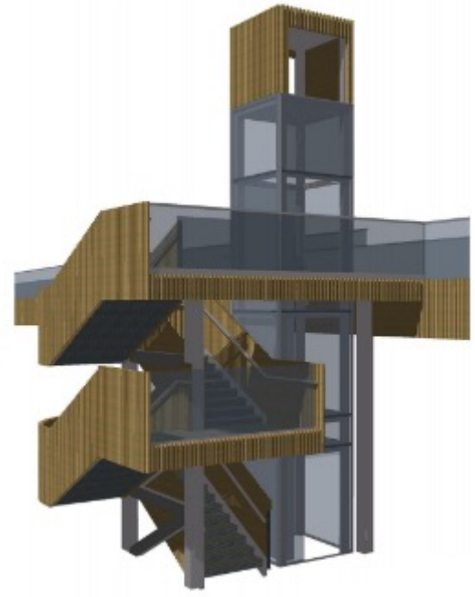

CONSTRUCTION OF A PEDESTRIAN OVERPASS OVER KARLA MARKSA STREET IN THE AREA OF THE KRASNOYARSK REGIONAL PHILHARMONIC SOCIETY IN KRASNOYARSK

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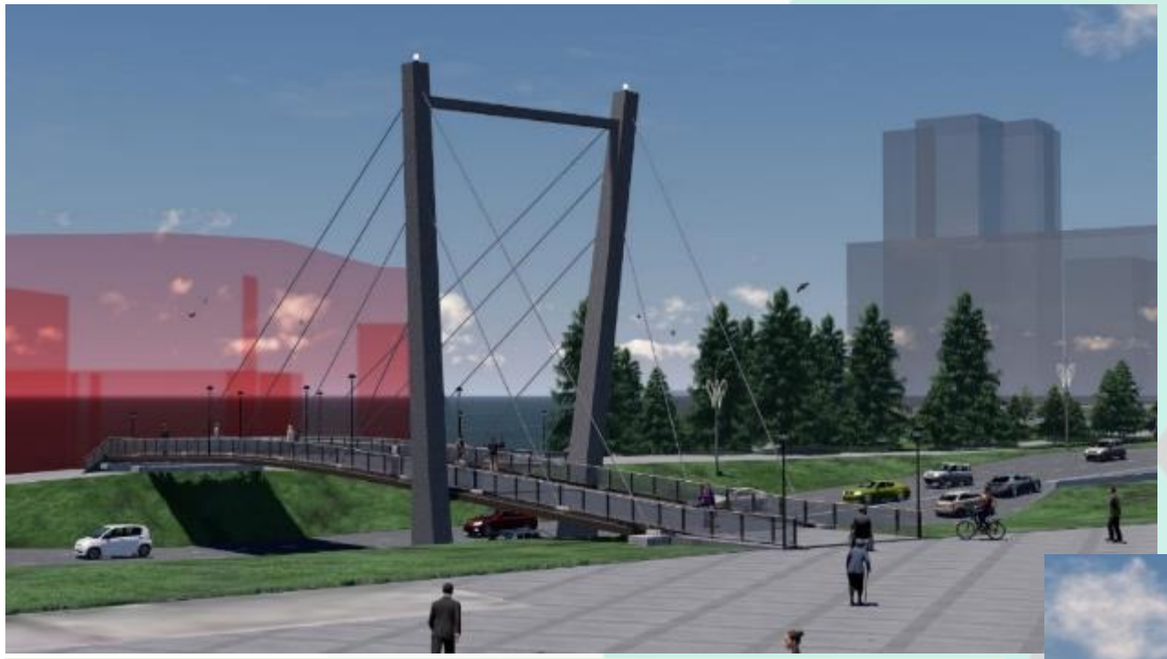

Design period:

May – September 2020

First stage construction period:

December 2020 – October 2021

Full span length: 53.0 m (5x33x15)

Width: 6.0 m

Span weight: 45.0 t

(KRAMZ – extrusion AD 35T1)

Customer:

Municipal Public Institution “Capital Construction Office”, Krasnoyarsk

Designer: Gorizont LLC

Contractor: JSC “Giprostroymost”

CONSTRUCTION OF A PEDESTRIAN OVERPASS OVER KARLA MARKSA STREET IN THE AREA OF THE KRASNOYARSK REGIONAL PHILHARMONIC SOCIETY IN KRASNOYARSK

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Construction progress

PEDESTRIAN BRIDGE OVER THE KNYAGININKA RIVER IN KNYAGININO, NIZHNY NOVGOROD REGION

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Full span length – 30 m (Scheme – 3x 10.09 m)

Overall size – G-2.25 m (pedestrian part).

Span weight – 4.6 t.

Customer: Municipal Budgetary Institution "Improvement of Knyaginino city"

Designer: RENOVA-STROY LLC

INTERNATIONAL EXPERIENCE OF PEDESTRIAN BRIDGE CONSTRUCTION QAZAQSTAN

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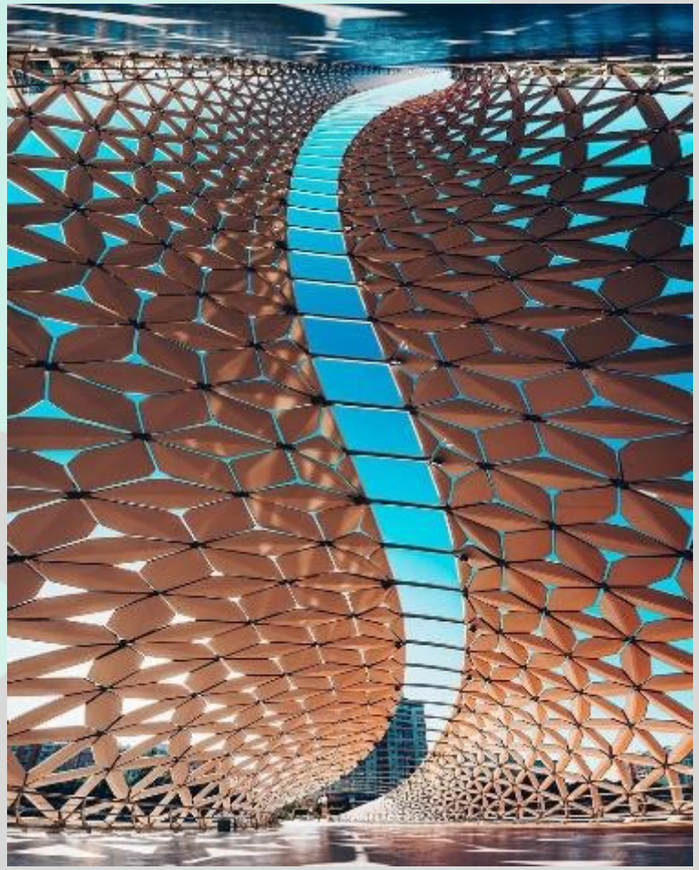
314 meters long and 10.5 meters wide, the Atyrau Bridge was built in 2018 and is one of the pieces of the “sculptural” architecture of modern Nur-Sultan (Astana). Designed by Il Architects, a local architectural firm, in the parametric manner, it became the most picturesque attraction in the historical part of the city. The use of aluminium cassette panels in its outer shell allowed to form a futuristic look of the structure.



INTERNATIONAL EXPERIENCE OF PEDESTRIAN BRIDGE CONSTRUCTION
NORWAY

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The Twist Bridge over the Randselva river became one of the most attractive sculptures in the Norwegian Kistefos Park.
Light aluminium was used upon its construction that allowed to create a covered shell made of numerous elements. The entire bridge structure is covered by large windows and reinforcing supports. Engineers managed to achieve an extraordinary effect of the optical illusion – the bridge is literally spiraling in the middle.

CONTACTS OF THE ALUMINIUM ASSOCIATION

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The Aluminium Association is open for discussion of various forms of cooperation and projects aimed at expanding the use of aluminium

We are looking to cooperate with you!

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