



BEMO SMOOTH & SOLAR



ECONOMIC
AND SUSTAINABLE
BUILDING ENVELOPES





LAUSANNE CONFERENCE CENTRE | LAUSANNE | SWITZERLAND

Architecture: Richter & Dahl Rocha
Photo: Sergio Guerra

WITH BEMO-SMOOTH – REALISE SMOOTH, PENETRATION-FREE SURFACES



Contemporary architecture increasingly wants smooth surfaces, even in roof areas. BEMO-SMOOTH offers the safe and simple possibility of building smooth surfaces above the water-draining level using BEMO standing seam profiles without penetration. The BEMO-TOP installation profiles are applied to the BEMO standing seam with the seaming machine in a second work process without penetration for the metal roof. The almost maintenance-free standing seam roof is very mechanically robust and is safe to walk on. No additional sealing on the roof system required.

Also for free-form surfaces: Simple installation of the SMOOTH surface for metal roofs

The BEMO-TOP installation profiles allow for different, thermal linear expansion of the standing seam system and the smooth design surface above. Furthermore, they ensure a linear load transfer from the upper surface to the substructure and avoid unwanted constraint points, as they often occur through individually mounted retaining tabs. The linear and continuous rails allow easy assembly of the SMOOTH surface on the metal roof without prior time-consuming measurement of the substructure. Rounded transition from the roof to the façade is possible

thanks to the cambered standing seam profiles. Even free-form surfaces can be made into smooth surfaces with MONRO profiles and the BEMO-SMOOTH system. The BEMO-SMOOTH system offers a safe solution for nearly any type of architecturally demanding roof and façade shapes.

[FACT SHEET](#)

- SMOOTH BUILDING ENVELOPE
- WATER-DRAINING LEVEL REMAINS PENETRATION-FREE
- ROBUST AND SAFE TO WALK ON
- SIMPLE DESIGN SURFACE INSTALLATION
- THERMAL FLOW SECURED



CARNAL HALL LE ROSEY | ROLLE | SWITZERLAND

Architecture: Bernard Tschumi Architects
 Product: Standing seam
 Surface finish: blank
 Colour: Natural
 Special features: Extreme tapered tracks, incl. special lengths
 Photo: Iwan Baan



WASSERWELT | LANGENHAGEN | GERMANY

Architecture: 4a Architekten GmbH Stuttgart

Product: BEMO-BOND and SF N65-400
 Surface finish: BEMO-FLON, PE
 Colour: Similar to RAL 9010

Special features: Roof and façade in one colour
 Photo: Claus Kirsch/vor-ort-foto.de



COAL DROPS YARD | LONDON | ENGLAND

Architecture: Heatherwick Studios

Product: N65-400, BEMO-SMOOTH with BEMO-BOND

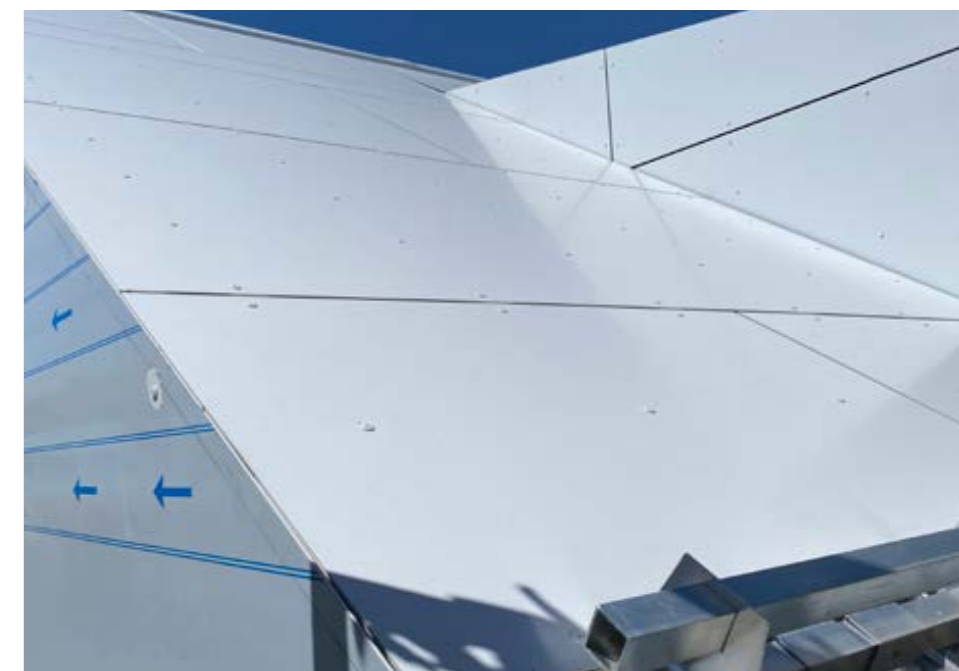
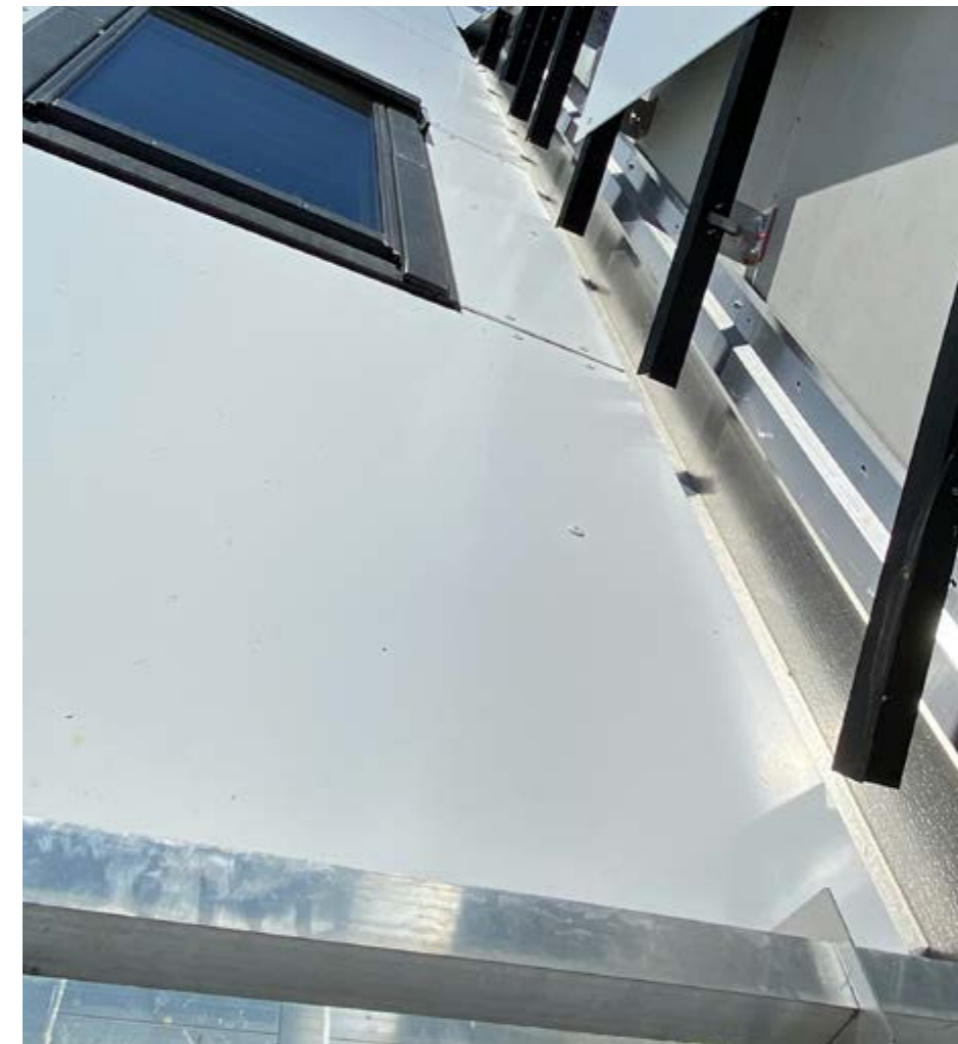
Surface finish: Stucco embossed, BEMO-BOND with BEMO-FLON

Colour: Anodised look

Special features: Specially adapted BEMO-SMOOTH structure,
complete package with BEMO Engineering

Photo: Paul Scott





RESIDENTIAL BUILDING PROJECT | LAHL MEERSBURG | GERMANY

Architect: mlw architekten

Façade: 380m², TEKOFIX (GFK), BEMO BOND 4mm A2 Traffic White

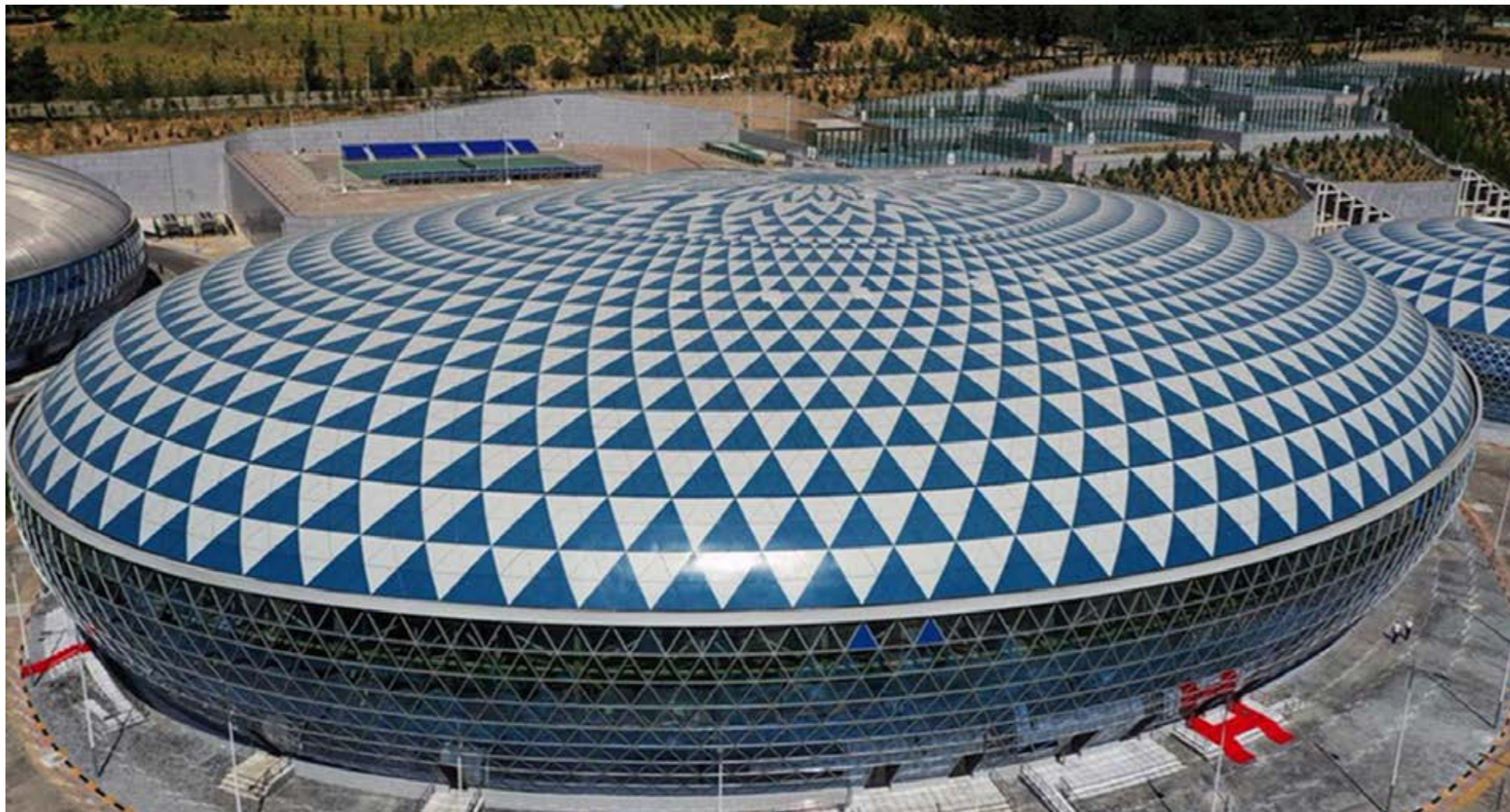
Roof: 190m², BEMO SMOOTH, standing seam N50-429 1.0 stucco with top installation rail
BEMO BOND 4mm A2

Processor: Zimmermann + König – Singen



INDOOR POOL | LEINGARTEN | GERMANY

Architect: KTP Architekten
Product: BEMO standing seam, BEMO-BOND, BEMO-SMOOTH, BEMO-TEKOFIX
Surface finish: BEMO-FLON
Colour: RAL 9006
Special features: Cambered standing seam tracks with BEMO-SMOOTH.
Photo: BEMO



OLYMPIC SPORTS CENTRE | DUSHANBE | TAJIKISTAN

Architecture: Motorin Vilyevich, LLC Rostovgiproshakht

Product: N65 / 500 / rain screen panel (smooth aluminium sheet 2.0mm)

Surface finish: Natural and PVDF 2 coated stucco

Colour: Natural stucco, grey similar to RAL 850-2 and blue similar to RAL 5009

Special features: Complete with TOP rails + rain screen from BEMO





PHOTOVOLTAIC AND SOLAR THERMAL SYSTEM – WITH INNOVATIVE SYSTEMS FOR A CLIMATE-FRIENDLY ROOF



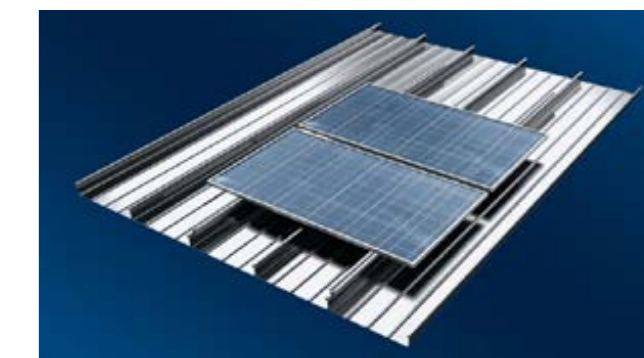
When it comes to sustainable and climate-friendly construction, the generation of renewable energies plays a central role. Photovoltaic and solar thermal systems are still considered one of the key technologies in this context. With our innovative systems, BEMO enables the combination of sustainable and risk-free standing seam roofs and renewable energy generation without having to sacrifice optical aspects. BEMO systems enable a photovoltaic roof and the use of solar thermal systems on almost any roof shape.

Metal roof as a photovoltaic roof: Climate-friendly construction with systems from BEMO

BEMO solar energy systems can be installed on standing seam tracks permanently and without penetration. In this way, we avoid weak points when it comes to impermeability to rain. Photovoltaic and solar thermal systems are

secured using our BEMO-TOP and BEMO-AKKORD rails, which have been tried and tested over many years, in order to meet the increased requirements of photovoltaic roofs by installing them on metal roofs.

The aluminium installation rails are attached to the closed flanges of the standing seam tracks on the photovoltaic roof using a seaming machine. The anti-slip guard can be installed simply and quickly on the surface and on the eaves side if the surface is full. Thus, the roof is sustainably protected and will be watertight for life. In addition, there is the great advantage over individual clamps: there are no point loads and no constraints. Quick, easy and safe to install. The height of the standing seam flange, together with the height of the BEMO rails, also ensure error-free rear ventilation of the module.





COMMUNITY CENTRE | NOTTWIL | SWITZERLAND

Product: BEMO standing seam, BEMO chord rails system and BEMO ABS
Surface finish: PE coating
Colour: similar to RAL 9006
Photo: Martin Steinmann



COMMUNITY CENTRE | MUNICH | GERMANY

Architecture: Keil, Stoll & Partner, Architekten & Ingenieure
Product: BEMO-BOND, SF N65-400 with BEMO-SMOOTH roof structure
Surface finish: BEMO-FLON
Colour: Bright gold
Photo: Benjamin Wild/vor-ort-foto.de





ROOF RENOVATION OF SCHOOL BOARDING HOUSE | MAINBURG | GERMANY

Client: Landratsamt of Kehlheim
Product: BEMO standing seam VF 65-500,
BEMO chord rail for photovoltaic system
Material: Aluminium stucco
Photo: BEMO



FIRE STATION | WIESELBURG | GERMANY

Architect: Bauer Brandhofer Architekten
Product: BEMO standing seam, BEMO chord
Material: Steel
Colour: RAL 9006
Photo: Wieselburg fire station





CONVENTION CENTRE | BAKU |
AZERBAIJAN

BEMO SMOOTH & SOLAR DESIGN



Smooth and modern building envelope with integrated solar energy or photovoltaic system. It is also possible to design the roof and façade without any transition. Modern, timeless design that is fully in line with the trend.

What exactly is BEMO Smooth?

The Smooth system is so named because the actual standing seam system is almost always only used from an engineering stand point and is then covered with a smooth surface/smooth cladding, giving the building a different look or design. The technical benefits and the extremely durable standing seam system are used as a water-draining level. The cladding has a natural look and allows for almost any design – even wood is possible and has already been installed and used as design cladding. Solar thermal and photovoltaic systems can also be integrated and installed easily and highly efficiently. Design meets sustainability and durability.

How does the connection between the roof profile (standing seam) and the design level work?

The connection between the standing seam profile and the design level is formed by the TOP or chord rail. As with the standing seam, the rail is seamed and serves as a substructure for the cladding and the solar or photovoltaic modules. The great benefits of the rails are the linear substructure, the quick and simple installation, as well as the static benefits, including the avoidance of point loads, which would occur with individual clamps. There are absolutely no constraints and the roof system will work for decades.

What structures are possible?

Almost any structure and supporting structures can be put in place beneath the design and cladding level. The base can have wood, concrete, steel, supporting decks or mixed constructions. There is a suitable BEMO system and the right approved fastening for every base. In addition, the innovative and passive house-certified GFK thermal holders are used, which have practically no thermal bridges. This allows passive house standards to be achieved easily and are the ideal complement to the basic idea of sustainable construction. In addition, the passive house-certified TE-KOFIX A++ console, which meets the highest requirements, can be used in the façade. Soft insulation or hard-wearing insulation form the insulation package and insulate your roof and your façade safely and for a long time. U-values of $0.15 \text{ W} / \text{m}^2 \cdot \text{K}$ and less are no problem.

What cladding is possible?

In principle, any cladding and design surface is possible. Aluminium, aluminium composite panels, panels, perforated corrugated or trapezoidal profiles and even HPL or other panel materials. Any photovoltaic or solar thermal elements, of course. Wood has also already been used for this purpose and deployed with open joints in the roof area. The water-draining level is always below it and is put in place in a long-lasting and durable manner using the penetration-free BEMO standing seam system.

What benefits does the system offer clients in comparison to other “roof-mounted solutions”?

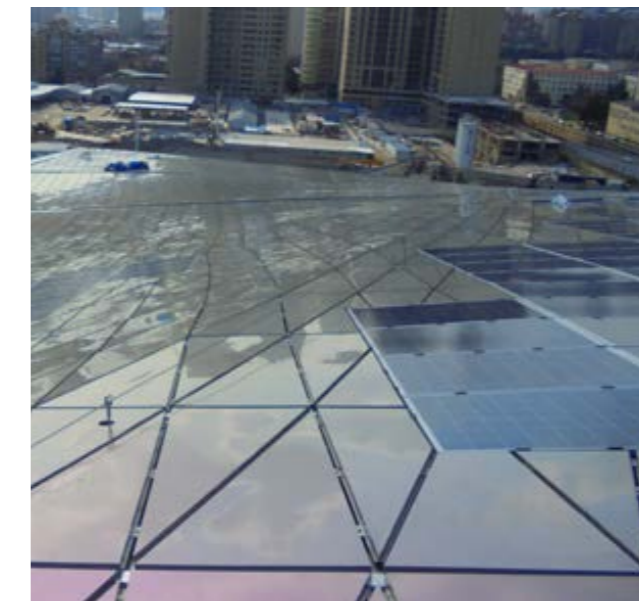
The BEMO standing seam system is completely penetration free in the water-draining level and offers high levels of protection and durability for your building as a result. Unlike screw-mounted systems (e.g. sandwich or trapezoidal sheets), for example, no weak points arise when it is screwed into place. Moreover, the system is mounted so that it slides and has no transverse joints. Added to this is the advantage that the photovoltaic modules or cladding are clamped, meaning no additional screw holes are required in the roof. You can also do away with extra loads, as is the case with waterproofing or foil roofs.

In addition, aluminium is a recyclable material that can be reused or reintroduced into the cycle if the system is converted or dismantled. Double added value and sustainable to the end, and that for decades. A roof system that also works perfectly without the Smooth system or a photovoltaic system. Long tracks (>100.00 m) and complex shapes are no problem.

What benefits do the system and BEMO offer planners and architects?

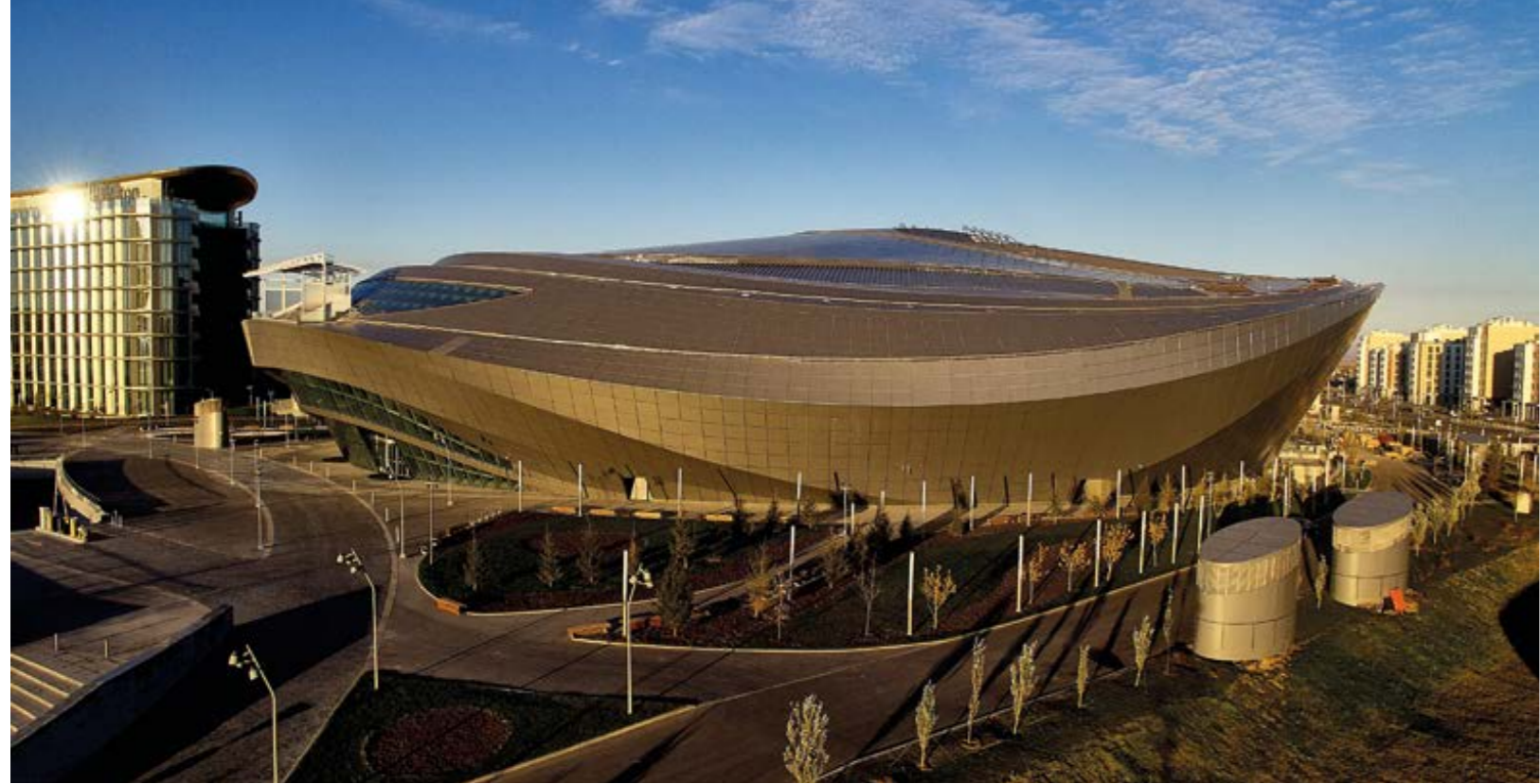
Thanks to the simple and well-matched systems, the planner and the architect can adjust the design and configuration at any time after determining the roof structure and the design can be varied. The rails or even a secondary layer are the basis for individual design.

In addition, BEMO offers support at every phase with: design and rendering, practicality and technical feasibility, cost estimation and tendering, installation companies and, of course, during implementation – we’re always by your side. From the initial idea all the way through to opening.



CONVENTION CENTRE | BAKU | AZERBAIJAN

Architecture: Coop Himmelb(l)au
 Product: Standing seam N65-400
 Colour: Natural stucco, similar to RAL 7037
 Special features: BEMO-SMOOTH roof structure with BEMO-AKKORD rail
 Photo: Elena Odareeva | Dreamstime.com



EVENTS VENUE |
ASTANA | KAZAKHSTAN

Architecture: Adrian Smith + Gordon Gill
Product: N65-400, tapered
Surface finish: Stucco, PVDF
Colour: Similar to RAL 9007

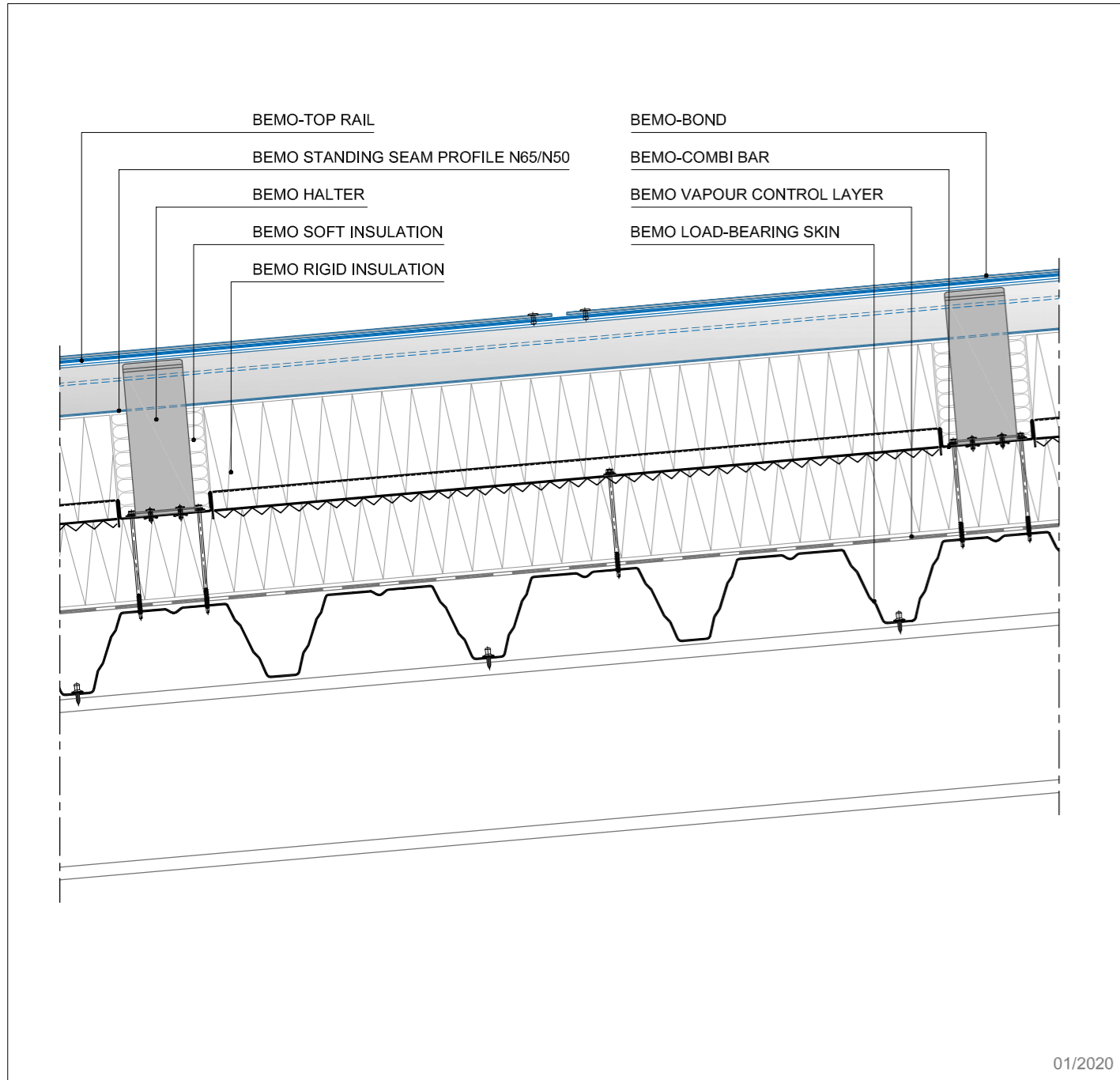
Special features: Standing seam with BEMO-TOP rails to accommodate honeycomb panels provided by the client
Photo: Elena Odareeva | Dreamstime.com



ICE ARENA | ALMATY | KAZAKHSTAN

Architect: Esim Mamonov
Product: SF N65-400, tapered, BEMO-MONRO
Surface finish: Natural stucco
Photo: Vladimir Fomin, Mikl Starshov, Dreamtime.com





DRAWING TITLE:
ROOF SYSTEM BEMO SMOOTH
 STRUCTURAL DECK (TRANSVERSE)

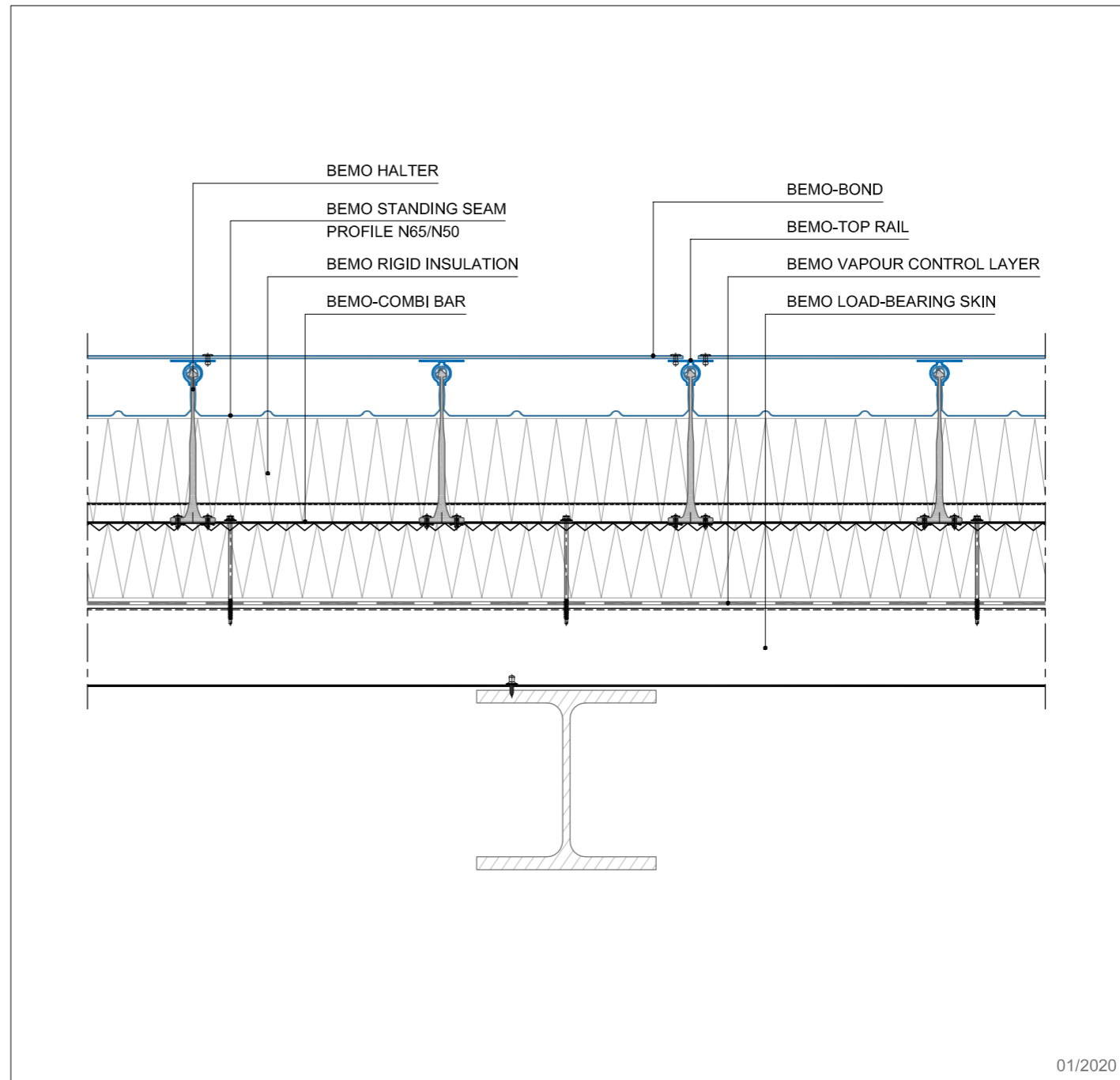
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LONGITUDINAL SECTION

TYPICAL DETAIL 1070a

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01/2020



DRAWING TITLE:
ROOF SYSTEM BEMO SMOOTH
 STRUCTURAL DECK (TRANSVERSE)

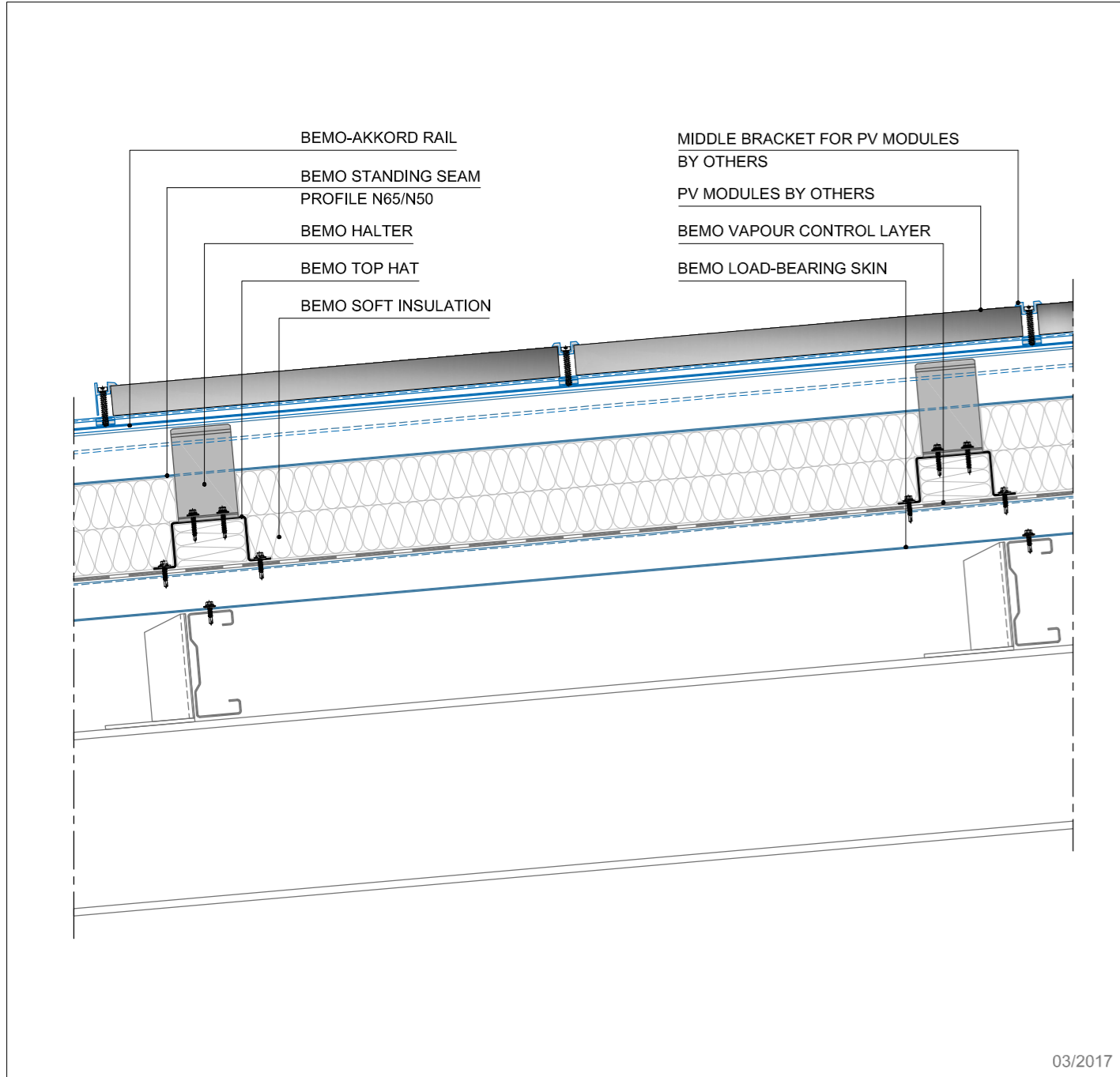
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01/2020



DRAWING TITLE:
**ROOF SYSTEM BEMO-AKKORD
 OVER PURLIN SYSTEM**

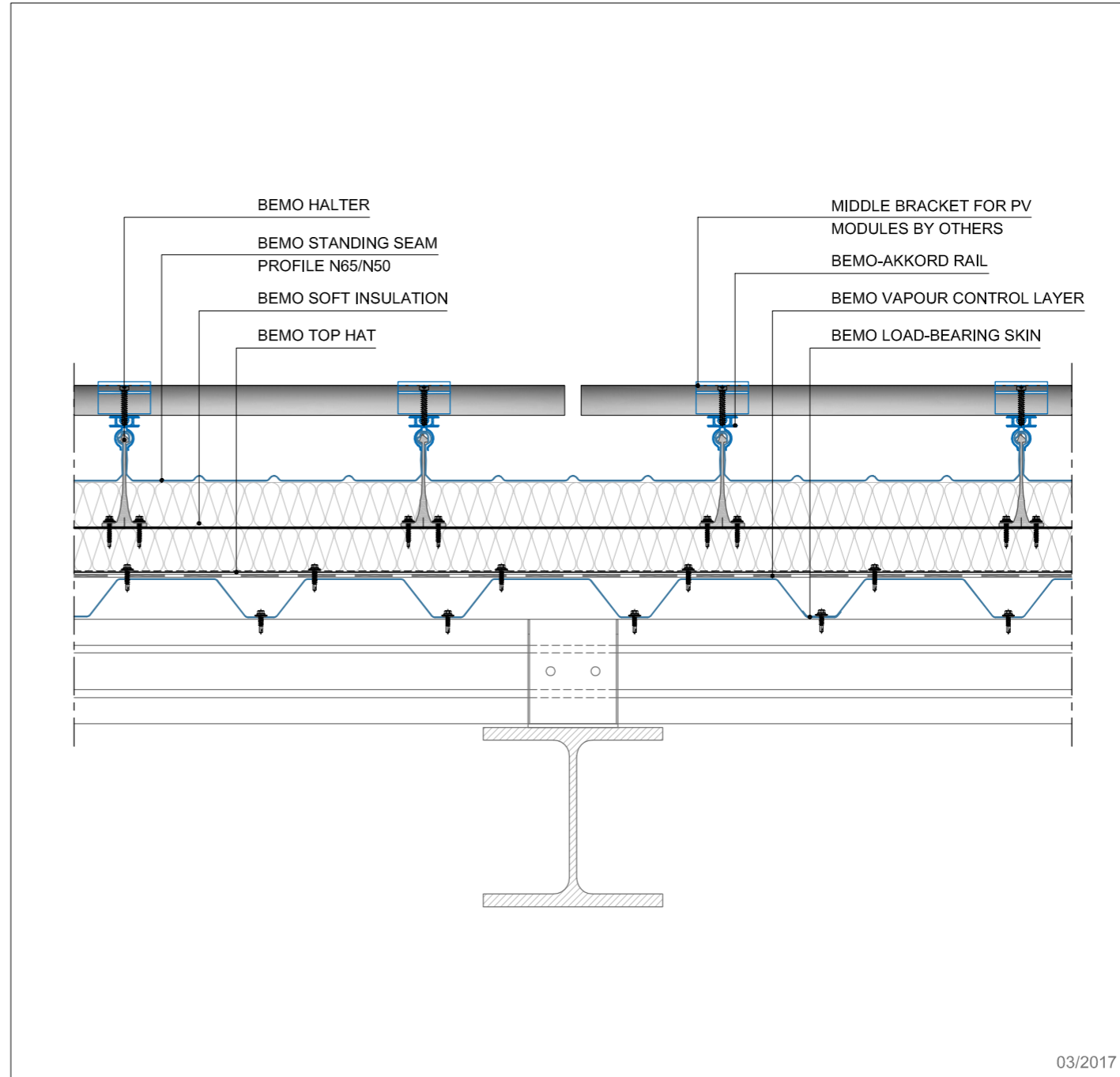
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03/2017



DRAWING TITLE:
**ROOF SYSTEM BEMO-AKKORD
 OVER PURLIN SYSTEM**

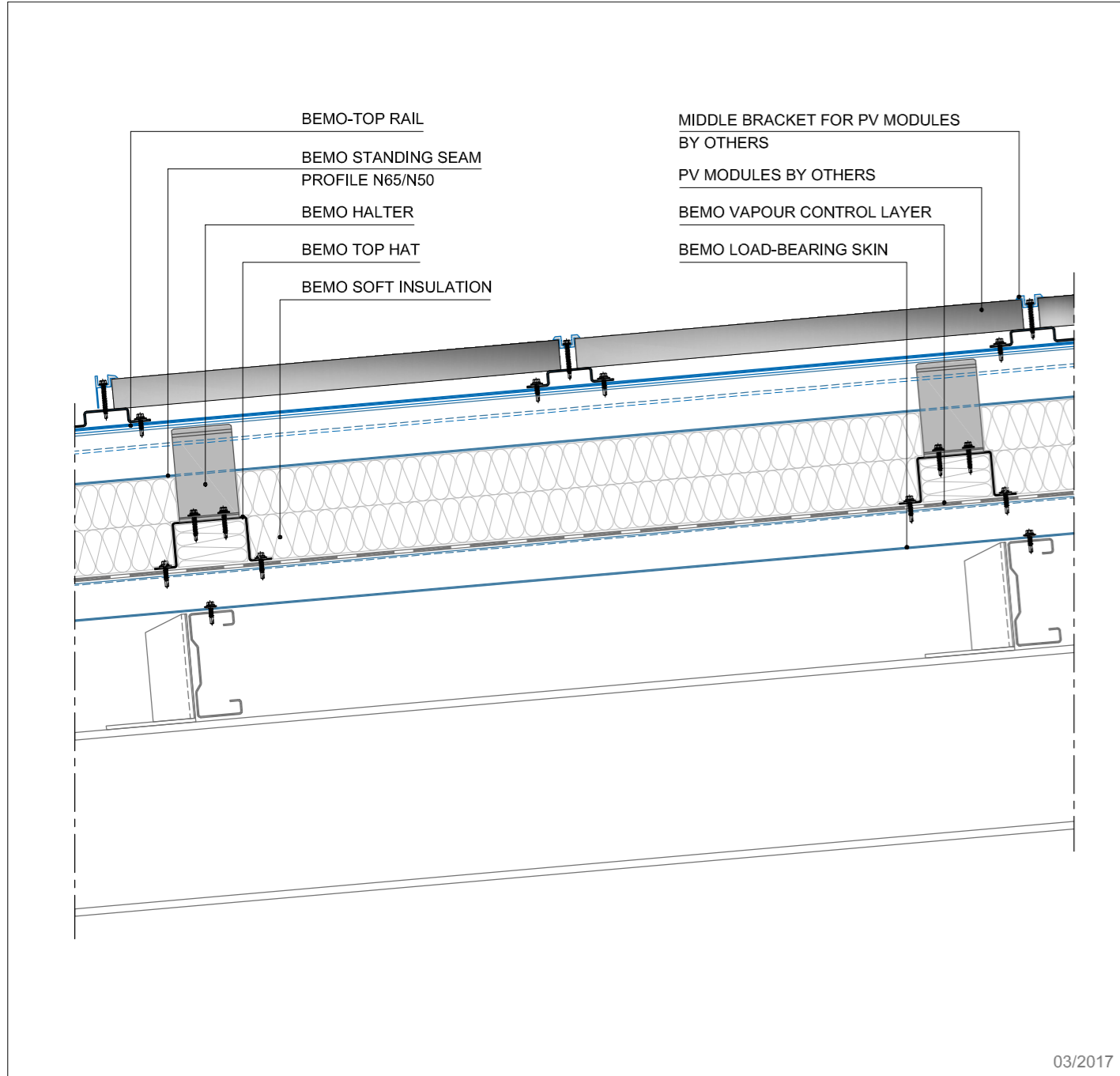
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TYPICAL DETAIL 1081

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DRAWING TITLE:
**ROOF SYSTEM BEMO-TOP
 OVER PURLIN SYSTEM**

TYPE:
LONGITUDINAL SECTION

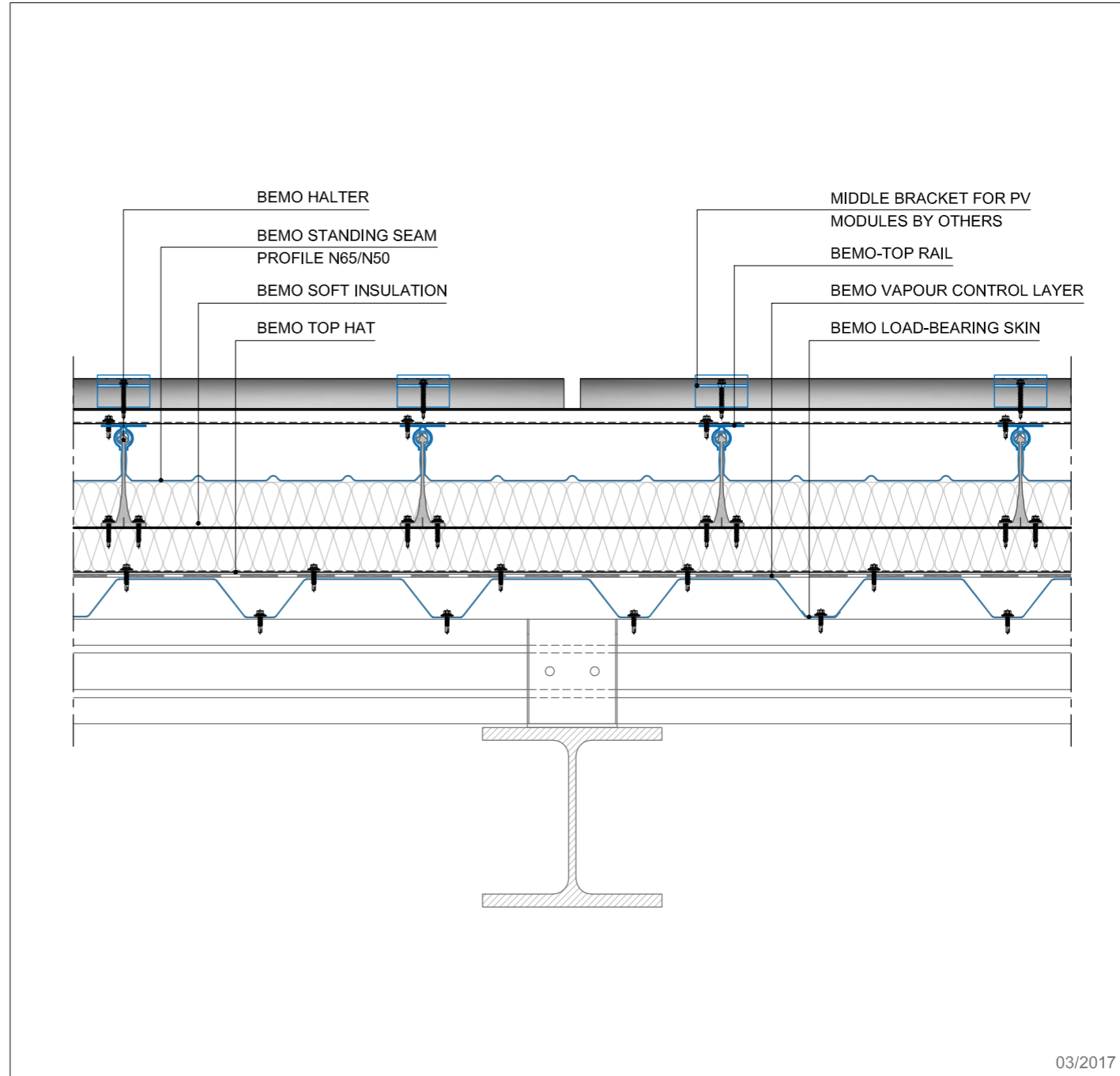
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DRAWING TITLE:
**ROOF SYSTEM BEMO-TOP
 OVER PURLIN SYSTEM**

TYPE:
CROSS SECTION

TYPICAL DETAIL 1083

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