

# ARCHITECTURAL AWARD BUILDING-INTEGRATED SOLAR TECHNOLOGY 2020



## Architectural Award Building-Integrated Solar Technology<sup>2020</sup>

### Results of the competition

This year the „Architectural Award Building-Integrated Solar Technology“ was organised for the eighth time since its establishment in summer 2000. Over a period of two decades the Solarenergieförderverein Bayern (Bavarian Association for the Promotion of Solar Energy) has therefore successfully established one of the very few international competitions at the interface between architecture and solar energy.

In view of the social challenge posed by the transition to a renewable and decentralized energy provision in the context of climate change and corresponding adaptation strategies, the task of integrating photovoltaic (PV) modules and/or solar thermal collectors in roofs and/or façades is becoming increasingly important. And if, in connection with the climate protection goals, one takes into consideration the predicted necessary increase in installed PV capacity (10- to 20-fold increases and more are expected), then the urgency of supporting the measures architecturally becomes obvious. And this is where the „Architectural Award Building-Integrated Solar Technology“, which is awarded every three years, takes its starting point. Evaluation criteria include architectural aspects such as the holistic design concept, integration of solar technology into the building envelope, as well as the design quality and functionality of the building and solar power system. In addition to their yield and efficiency, the innovativeness of the design concept and structure is also taken into account. Finally, the intention is also to acknowledge how the solar power systems are publicly communicated as symbols and mediators of sustainable energy provision.

With 159 schemes, including nine entries for the „Students Award“, the number of participants has almost doubled relative to 2011, and there is even an increase of 20 percent compared with the high number of projects in 2014 and 2017.

There has also been an increase in the number of countries taking part this time, with the jury reviewing competing schemes from 26 countries, even if Germany and Switzerland, with 57 and 54 projects respectively. The German-speaking area, with an additional eight Austrian projects,

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ultimately accounts for almost 78 percent of the entries. The doubling of entries from Switzerland this year is remarkable

A total of 582 schemes from 40 countries have been submitted since the first competition in 2000. With regard to the entrants, one of the competition's most successfully addressed target groups continues to be architectural practices. The current competition features world-renowned firms with Renzo Piano Building Workshop (Paris), Dominique Perrault Architecte (Paris) and Shigeru Ban Architects (Tokyo). In addition, successful solar architects such as Beat Kämpfen and Rene Schmid from Zurich have also taken part in the competition with several projects.

In terms of the proportion of different building types, residential buildings account for just over half of the 150 schemes entered in the main competition. Detached and semi-detached homes account for 32 percent, while almost 19 percent are apartment schemes and, in some cases, high-rise residential buildings. Here it is remarkable that almost 40 percent of Swiss projects belong to this group, whereas, for example, detached and semi-detached homes clearly dominate among the entries from Germany with almost 55 percent.

In addition to administrative buildings, commercial buildings and schools are even more widely represented. No less than 7 projects from the transport infrastructure field have been submitted this year. Within the competition, the overwhelming majority of buildings continue to be new-build-schemes; only 16 percent of entries involve the renovation of existing building stock, some of which also had to observe conservation requirements. Here it seems that there is still considerable potential for activating roof and façade areas in existing building stock, which has yet to be exploited either quantitatively or qualitatively.

The share of purely PV systems in the competition has increased continuously over the years and accounts for more than 80 percent of all entries in 2020. While 14 percent of the buildings use combined systems, only slightly more than five percent exclusively use solar thermal collectors.

In terms of the structural integration, PV systems on (low-) pitched roofs, including some canopies (56 percent), predominate over a surprisingly large number of façade examples (44 percent). There, applications

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largely dominate as rear-ventilated rainscreen cladding (94 percent), including a number of balcony balustrades or as (tilting) solar shading.

In regard to the roofs, it is noticeable that pitched roofs are by no means solely the domain of detached and semi-detached homes, for which special products such as solar roof tiles or solar roof modules are occasionally used. No clear trend can be seen with regard to whether surfaces are fully or only partial covered with PV modules.

As far as photovoltaic façades are concerned, however, clear preferences can be seen for apartment and non-residential buildings. Around 55 percent of the crystalline PV modules used have homogeneous surfaces, mostly in black; this approach is supplemented by corresponding thin-film modules. In addition, modules with colored printing or coatings or in combination with special glass are used in 30 percent of the schemes, especially in multi-story residential buildings. Crystalline modules with a visible standard cell arrangement are now rarely used; in one project, however, colored polycrystalline modules were used in the balcony parapets as a design feature. Two façade solutions also used ornamental printing on the front glass as part of the refurbishment of existing buildings. In the case of solar thermal systems, flat-plate collectors are used in 86 percent of cases and almost 60 percent of façade solutions.

In what was overall a very heterogeneous selection of solutions, the quality of the architectural examples is also positive in terms of the breadth of submissions. Most of the system concepts implemented in roofs and façades continue to adopt well-established structural and design-based approaches. However, in addition to project-specific adaptations, which often involve the integration of fire protection requirements particularly in taller and high-rise buildings, advancements and new developments are also repeatedly visible, be it different types of "energy roofs" or the optimization of substructures and fastening systems for modules in façades.

In the good and outstanding projects, the interaction between creative designers and ambitious developers in combination with an expanded range of solar technology products provides a clear model for success.

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## **The projects' evaluation by the jury**

In several rounds, a "shortlist" of schemes was successively whittled down from the 150 entries in the main competition. Following a detailed review of the projects with particular regard to the evaluation criteria, 58 schemes remained in the competition at the end of the first round. In two further rounds, the evaluation panel discussed the entries in a high-quality field, in particular in view of the solar power system solutions selected for the respective buildings and energy concepts, while also considering the exemplary impetus provided for the various building types. At the end of this phase, 22 projects remained on the "shortlist".

This selection of entries reflects not only the high quality of the holistic concepts as well as the design quality and functionality with regard to integrating solar technology into building envelopes, but also the wide range of implemented building schemes, which includes two refurbishments and two infrastructure-based buildings. After intensive discussion and also some quite contentious assessments, the jury selected five prize winners from this first-class field of entries, and also awarded honorable mentions (non-monetary prizes) for five projects.

Finally, the nine entries for the "Student Award" were examined. After viewing and discussing the five Solar Decathlon entries and the four conceptual and academic submissions, the jury decided in favor of the "Communal Power Plant" project by Klara Jörg

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Photo: Christian Aschman

## Architectural Award Building-Integrated Solar Technology 2020 (€ 15,000)

**Project:** Lycée Technique pour Professions de Santé (2019),  
Ettelbrück (LU)

**Entrant:** FABECK ARCHITECTES, Koerich (LU)

The four-story building is divided into projecting and receding structures. The primary structure is made of timber except for the escape staircases. Asymmetrical gable roofs vary in the inclination of their surfaces and are covered entirely with PV modules (320 kW). The PV generator on the roof surfaces is meticulously realized on a timber substructure with painted flashings, and continues familiar approaches from structural engineering practice.

The façade design posed greater challenges. Solar thermal collectors, to which a 91,000-liter hot water tank is connected, are installed in the southwest and west elevations at the height of the window strips. The solar thermal collectors (150 kW) are also integrated design-wise so that they align with the window openings and extend the almost square windows along their right-hand reveals. Based on a mullion/transom system, the collectors are installed flush with the surface, with concealed connection cables. The selected dimensions and proportions of the solar technical components excellently complement the façade's appearance with its vertically arranged, narrow timber battens.

Based on the energy-plus concept, the new school building vividly combines the use of innovative building services components with the use of ecological materials in a coherent building design with high functionality and design quality.



Photo: Christian Aschman



Photo: La Compagnie générale de Photographie



Photo: La Compagnie générale de Photographie

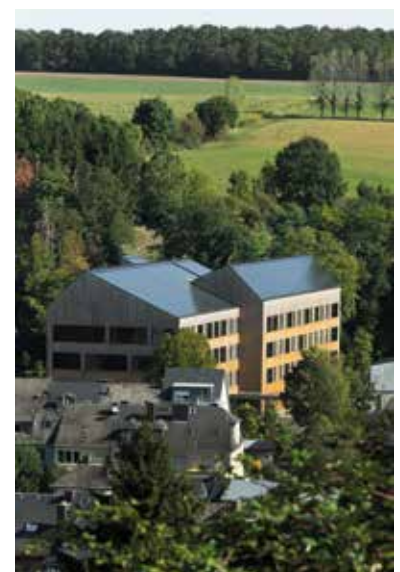


Photo: Christian Aschman

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Photos: Beat Bühler

## 2. Prize Architectural Award Building-Integrated Solar Technology<sup>2020</sup> (€ 2,500)

**Project:** Wohnhaus Solaris (2017), Zürich (CH)  
**Entrants:** huggenbergerfries Architekten, Zürich (CH);  
Ertex Solartechnik, Amstetten (AT)

An "aubergine-colored" apartment building with a concisely articulated structural form stands out between a railway line and a heterogeneously developed arterial road. The architects developed an ingeniously organized floor plan for the 10 residential units in the multi-faceted building in order to provide "diverse orientations with extensive views, openness and all-day sunshine". The special feature of the homogeneously formed envelope is that despite the building's complex geometry, the façade (46.5 kW) and roof (25.2 kW) are designed as solar generators and produce twice as much electricity over the year as is consumed in the building. The architects aimed to achieve a "solar house that isn't necessarily recognizable as such". Monocrystalline modules are used with a prismatic front glass that is additionally color-coated with a special print technology. This means that the solar cells cannot be seen even at close range; the vertically textured structure gives the glass surface a matt sheen and creates a multi-shaded, colorful play of light over the course of the day in direct and diffuse light and depending on the viewing angle. The homogeneous appearance complements a façade structure with concealed fixings and unobtrusively aligned joints, so that the individual panels are barely legible from a distance.

Through the interaction between the people involved in its construction, the Solaris residential building exemplifies the efficiency of solar technology in ambitious, contemporary architecture.



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## 2. Prize

### Architectural Award Building-Integrated Solar Technology<sup>2020</sup> (€ 2,500)

**Project:** Tribunal de Grande Instance (2017), Paris (FR)  
**Entrant:** Renzo Piano Building Workshop, Paris (FR)

The new building for the Tribunal de Grande Instance de Paris is the largest project in the competition with a height of 160 meters and a usable floor space of more than 100,000 m<sup>2</sup>. The building, designed by Renzo Piano Building Workshop, impresses with its staggered structure, with extensively planted terraces and the differentiated design of the double-skin façade, whose external glazing extends beyond the edges of the building on each of its longitudinal sides and thus elegantly defines the clear structure of the building.

On the east and west façades of the high-rise building, horizontal PV modules cantilever outwards on steel structures to form a continuous, narrow vertical ribbon while also flanking the three uppermost stories in each of the three building sections, which respectively step back above a projecting plinth. The PV modules are fixed back at the level of the floor slabs, out of the direct field of vision of the employees. With a depth of 1.20 m, the modules are designed with two different inclinations: the first row of modules with a 45° inclination lies directly in front of the glass façade and the second row, with a 20° inclination, is slightly offset below. The linear construction with different lengths, each staggered upwards, provides solar shading. In addition to the structural engineering requirements that had to be met for a solar power system at this height, the slender metal bands accentuate the large glass façades in a nuanced manner.

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## 2. Prize

### Architectural Award Building-Integrated Solar Technology<sup>2020</sup> (€ 2,500)

**Project:** Refurbishment of St. Wunibald church (2018),  
Georgensgmünd (DE)

**Entrant:** Ing. Büro Wunram, Georgensgmünd (DE)

“Parishes for Solar Energy” was a funding initiative organized by the German Federal Foundation for the Environment (Deutsche Bundesstiftung Umwelt, DBU), which initiated projects in 700 parishes between 2000 and 2002, usually involving the construction of PV systems. However, in many places this led to conflicts between church congregations and heritage conservation authorities, particularly because the design concepts were not always convincing. This is despite the fact that a large number of church buildings, especially from the post-war decades, require extensive renovation work. The Catholic Wunibald Church in Georgensgmünd in central Franconia is one such example.

The building, completed in 1966, features a large, strikingly steep gabled roof and a free-standing bell tower with its towering, pointed tent roof. At the suggestion of the church administration, locally based architect Johannes Wunram used the repair measures as an opportunity to install a photovoltaic system on the southeast side. This has resulted in a homogeneously integrated roof surface using an in-roof system with precisely detailed verges, which harmonizes perfectly with the color of the slate roof on the campanile. In addition, the 78.4 kW solar power system generates around 77,000 kWh/a of electricity, whereby it is planned to increase the current self-consumption of “just under ten percent”, in particular for the new electric heating system in the church interior.





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## 2. Prize

### Architectural Award Building-Integrated Solar Technology<sup>2020</sup> (€ 2,500)

**Project:** powerHYDE (2019), Mathjalgaon (IN)  
**Entrant:** billionBricks + Architecture BRIO, Mumbai (IN)

Following on from its award-winning weatherHYDE emergency shelter, the non-profit organization billionBricks has now presented its modular powerHYDE solar home with Architecture BRIO from Mumbai. In addition to the technical design development of this energy-plus building for the Indian subcontinent, the project is supported by a financing model that enables millions of poor and homeless people to find affordable housing solutions as needed. In India's rural regions there is an enormous demand for housing 40 million households and, consequently, a demand for sustainable energy supplies.

Above the single-story perimeter walls, a gently inclined monopitch roof covered entirely with PV modules sits on a lightweight steel support structure. This produces four times the amount of solar electricity that is actually needed, thus generating additional income opportunities for the residents by enabling them to sell the surplus energy to neighboring commercial and municipal facilities. Despite all the pragmatism, from the basic concept, choice of materials to the detailing, with respective references to regional building traditions, this has made an extremely sensible contribution to sustainable mass housing construction.

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## Honorable mention

### Architectural Award Building-Integrated Solar Technology<sup>2020</sup> (non-monetary prize)

**Project:** Schlössli (2018), Wohlen (CH)  
**Entrant:** Megasol Energie, Deitingen (CH)

The oldest building in the competition dates back to the 15th century. The "Schlössli" in Wohlen in the Swiss canton of Aargau had led an inconspicuous existence before undergoing conversion, and after two fires only the rubble masonry walls remained reasonably intact. Local architects Furter Eppler Partner began extensive renovation work at the end of 2016 and created an open interior space for the villagers that can be used in many different ways.

The building, whose new, striking gable roof rests on a surrounding, visible ring anchor made of concrete, is adorned on both sides by an inconspicuous solar power system. Monocrystalline PV modules (21.1 kW) in standard and special formats with a matt glass surface are elegantly installed on a special in-roof mounting system that is slightly separated from the roof verges. This is an unobtrusively sovereign solution that combines the historic building fabric with new energy technology in an exemplary manner.

# ARCHITECTURAL AWARD BUILDING-INTEGRATED SOLAR TECHNOLOGY 2020



Photos: Roger Frei

## Honorable mention

### Architectural Award Building-Integrated Solar Technology<sup>2020</sup> (non-monetary prize)

**Project:** Eishalle Sportpark Bünzmatt (2018), Wohlen (CH)  
**Entrants:** phalt Architekten, Zürich (CH)  
Planeco, Münchenstein (CH)

The ice rink at Bünzmatt Sports Park is also located in Wohlen in northern Switzerland. To cover the ice rink, phalt architects from Zurich proposed a steel structure with a segmented gable roof, with stepped-down levels at the height of the respective truss girder flanges. In seven bands, monocrystalline PV modules (378 kW) cover the upper roof surfaces, which amount to about two thirds of the total roof area.

With around 379,400 kWh/a of solar power, this enables "67% of the sports park's total energy demand" to be met. The side areas with the lower roof sections provide effective, uniform illumination with daylight, which additionally reduces electricity consumption and saves operating costs. This provides a coherent concept for the ice rink roofing, with meticulously designed verges and a concisely articulated roof silhouette



# ARCHITECTURAL AWARD BUILDING-INTEGRATED SOLAR TECHNOLOGY 2020



Photos: Casey Dunn

## Honorable mention

### Architectural Award Building-Integrated Solar Technology<sup>2020</sup> (non-monetary prize)

**Project:** Saxum Vineyard Equipment Barn (2018),  
Paso Robles (US)

**Entrant:** Clayton Korte Architects, San Antonio (US)

Saxum Vineyard is located southwest of the city of El Paso de Robles in California. Clayton Korte Architects from San Antonio designed the equipment barn to provide covered storage for farming vehicles, implements and livestock supplies. Filigree circular tube supports with diagonally arranged struts form the supporting structure and stiffen a gently inclined monopitch roof.

Photovoltaic modules are mounted in eight rows on a slim substructure, providing weather protection and the power generator. The system is expected to produce about 88,700 kWh/a of solar power, which will meet the entire energy requirements for the vineyard and irrigation wells. In conjunction with the translucent wall surfaces, an excellent example of agricultural construction has been created that combines aspects such as minimal material use and recycling with aesthetic demands.



# ARCHITECTURAL AWARD BUILDING-INTEGRATED SOLAR TECHNOLOGY 2020



## Honorable mention

### Architectural Award Building-Integrated Solar Technology<sup>2020</sup> (non-monetary prize)

**Project:** Fahrradunterstand VIVA (2019), Liestal (CH)  
**Entrant:** Antonio Stefanelli Architektur, Pratteln (CH)

A remarkable example of a solar power system in a small transport-related structure is provided by the VIVA bike shelter in the Swiss canton of Basle-Country. Situated alongside the VIVA apartment building in Liestal with 34 apartments, the elongated timber structure provides parking space and weather protection for bicycles.

The translucent glass/glass solar modules (32.64 kW) used in the mono-pitch roof and southwest façade provide an adequate supply of daylight and deliver around 28,000 kWh of electricity per year, which is "largely used for the households' own energy supply". The clear structure of the overhead and façade glazing harmonizes well with the cladding consisting of horizontally laid, narrow timber battens.

# ARCHITECTURAL AWARD BUILDING-INTEGRATED SOLAR TECHNOLOGY 2020



## Honorable mention

### Architectural Award Building-Integrated Solar Technology<sup>2020</sup> (non-monetary prize)

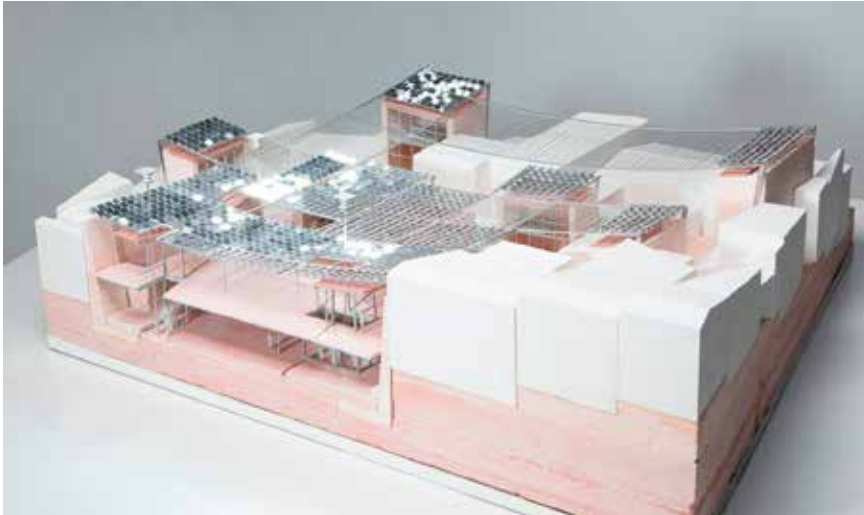
**Project:** HORIZON solar folding roof (2020),  
Jakobsbad-Kronberg (CH)

**Entrant:** dhp technology, Zizers (CH)

With the HORIZON solar folding roof, a roofing system has been developed and already used several times that, with its innovative light-weight construction, is able to cover large areas of commercial or infrastructural surfaces and use them for producing solar power.

The movable superstructure, which enables the folding roof to be “parked” in the „garage” during poor, inclement weather conditions, has reduced the material input required for the construction by about half. At the visitor car park for the Jakobsbad-Kronberg aerial cableway, west of Gonten in the canton of Appenzell Innerrhoden, the solar power system (429 kW installed capacity) has now been used for the first time over a roughly 4,000 m<sup>2</sup> parking area. In combination with charging stations for electric vehicles, it provides a useful link between solar power production and sustainable mobility.

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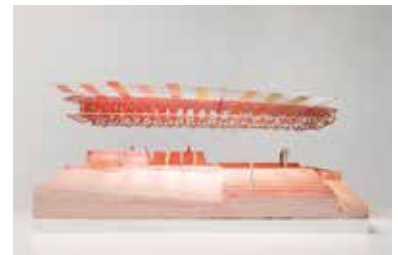


## Student Award Architectural Award Building-Integrated Solar Technology<sup>2020</sup> (€ 2,000)

**Project:** Communal Power Plant (2019/2020), Puertollano (ES)  
**Entrant:** Klara Jörg, Universität für angewandte Kunst Wien (AT)

In her final thesis, Klara Jörg deals with the regeneration of former mining regions using the example of Puertollano in Castile-La Mancha in central Spain. In addition to creating new and upgrading existing route connections and public spaces, the central topic is concerned with the concept of a decentralized energy supply. Here, the researcher draws on traditional Mediterranean textile roof coverings and spans a tensile roof structure over the existing buildings with organic PV cells and tower structures for solar thermal power plants.

Even if the structural and technical implementation remains open in detail, this excellently combines current social, urban development and energy challenges.



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## Shortlisted



Photo: Ronald Zijlstra

**Energy Academy Europe (2017)**  
Groningen (NL)

Entrant:  
Broekbakema, Rotterdam (NL)



**CO<sub>2</sub>-neutral residential development (2020), Männedorf (CH)**

Entrant:  
René Schmid Architekten, Zürich (CH)



**Convention Center (2018)**  
Léon (ES)

Entrant:  
Dominique Perrault Architecte, Paris (FR)



**Swatch Headquarter (2019)**  
Biel (CH)

Entrant:  
Itten+Brechbühl, Bern (CH)



**Energy-plus supermarket (2019)**  
Heiden (CH)

Entrant:  
Alex Buob Architekten, Heiden (CH)



Photo: Lucas van der Wee

**Bus station (2019)**  
Tilburg (NL)

Entrant:  
architectenbureau cepezed, Delft (NL)



Photo: Hanno Mackowitz

**Office building din (2020)**  
Schlins (AT)

Entrant:  
Fink Thurnher Architekten, Bregenz (AT)



Photo: Miguel Babo

**Pestalozzi school (2018)**  
Freiburg (DE)

Entrant:  
Spiecker Sautter Lauer Architekten, Freiburg (DE)



**McDonald's Flagship Disney (2020)**  
Kissimmee (US)

Entrant:  
Ross Barney Architects, Chicago (US)



**MFH Höngg (2019)**  
Zürich (CH)

Entrants:  
Kämpfen Zinke & Partner, Zürich (CH) +  
Planeco, Münchenstein (CH)



**MFH (2019)**  
Küsnacht (CH)

Entrant:  
Architekturbüro Vera Gloor, Zürich (CH)



Photo: Tiago Rebelo de Andrade

**House 3000 (2018)**  
Alcácer do Sul (PT)

Entrant:  
Rebelo de Andrade, Lisboa (PT)



# ARCHITECTURAL AWARD BUILDING-INTEGRATED SOLAR TECHNOLOGY 2020



## **Jury meeting**

Date: October 9, 2020

Location: Maritim Hotel Munich

10 a.m. - 5 p.m.

## **Jury** (according to the alphabet):

- Prof. Dipl.-Ing. Thomas Auer  
(Engineer, Technische Universität München)
- Prof. Dr.-Ing. Gerd Becker  
(Engineer, Solarenergieförderverein Bayern e. V.)
- Rolf Disch  
(Architect, SolarArchitektur, Freiburg)
- Prof. Dr. Ralph Gottschalg  
(Physician, Fraunhofer-Center für Silizium-Photovoltaik CSP, Halle)
- Prof. Dr.-Ing. Roland Krippner  
(Architect, Technische Hochschule Nürnberg Georg Simon Ohm);  
Secretary
- Dr.-Ing. Bruno Schiebelsberger  
(Engineer, Solarenergieförderverein Bayern e. V.)
- Dipl.-Ing. Jakob Schoof  
(Architect, Editor DETAIL)
- Dipl.-Ing. Francesca Venier  
(Architect, Topotek 1, Berlin)

## **Organisation**

Fabian Flade M. A.

(Solarenergieförderverein Bayern e. V.); Co-Secretary

# ARCHITECTURAL AWARD BUILDING-INTEGRATED SOLAR TECHNOLOGY 2020



## Submitted projects (according to the scheme's location)

- Aalen (DE), Conservatory  
Architekturbüro Walter, Ellwangen (DE)
- Adliswil (CH), FELZ EIS  
VBAU, Kilchberg (CH)
- Affoltern (CH), MFH Seewadelstrasse  
Architekturbüro Viridén + Partner, Zürich (CH)
- Alcácer do Sal (PT), House 3000  
Rebello de Andrade, Lisboa (PT)
- Alibag (IN), Artist Retreat  
Architecture BRIO, Mumbai (IN)
- Alt St. Johann (CH), EFH  
Bauer Energietechnik, Ingolstadt (DE)
- Altusried (DE), ZFH  
Architekt Dieter Hartenstein, Altusried (DE)
- Amsterdam (NL), Stadsarchief Depot Amsterdam-Noord  
architectenbureau cepezed, Delft (NL)
- Aresing (DE), SFH  
Robert & Ines Wagner, Aresing (DE)
- Arsuf (IL), ECO360  
Geotectura /Architect Prof. Joseph Cory, Haifa (IL)
- Aystetten (DE), Haus im Garten  
Architekturi Sedlmeier, Günzburg (DE)
- Bätterkinden (CH), Plus energy TFH  
MSR-Technik Ingenieurbüro, Studen (CH)
- Bangkok (TH), Austrian Embassy  
HOLODECK architects, Wien (AT)
- Berlin (DE), Futurium  
Richter Musikowski Architekten, Berlin (DE)
- Berlin (DE), Newtonprojekt Haus 1  
Deimel Oelschläger Architekten, Berlin (DE)
- Biel (CH), Solar façade of a high rise building  
3S Solar Plus, Gwatt (CH)
- Biel (CH), Swatch Headquarter  
Itten+Brechbühl, Bern (CH)
- Bottmingen (CH), SFH  
Megasol Energie, Deitingen (CH)
- Bretten (DE), R7 - SFH with Carport  
wwz Architektur + Projektentwicklung, Bretten (DE)
- Buchrain (CH), SFH  
Rolf Hunkeler, Ebikon (CH)
- Bütgenbach (BE), Sonnenhaus  
Architecture Zone, St. Vith (BE)
- Chemnitz (DE), Aktivsonnenhaus urban  
FASA, Chemnitz (DE)
- Chemnitz (DE), Solardomizil I + II  
FASA, Chemnitz (DE)
- Chicago (US), McDonald's Flagship  
Ross Barney Architects, Chicago (US)
- Cottbus (DE), Sonnenhäuser  
eG Wohnen 1902, Cottbus (DE)
- Dietikon (CH), Office building  
Planeco, Münchenstein (CH)
- Donauwörth (DE), Solar foil at the grain silo  
"Schneller Mühle"  
Lechwerke, Augsburg (DE)  
Heliatek, Dresden (DE)
- Dornbirn (AT), Students hall of residence  
Winkler Solar, Feldkirch (AT)
- Ebmatingen (CH), Renovation of the roman-catholic church  
Studerarchitekt, Ennetbaden (CH)
- Effretikon (CH), Elektro-Bildungs-Zentrum EBZ  
Megasol Energie, Deitingen (CH)
- Effretikon (CH), Terracotta solar roof  
Megasol Energie, Deitingen (CH)
- Planeco, Münchenstein (CH)
- Emmendingen (DE), Via Vita - MFH  
kuhs architekten, Freiburg (DE)
- Ettelbrück (LU), Lycée Technique pour Professions de Santé  
Fabeck Architectes, Koerich (LU)
- Freiburg (DE), SFH  
Sigma Energy Systems, Philippsburg (DE)
- Freiburg (DE), Extension Pestalozzischule  
Spiecker Sautter Lauer Architekten, Freiburg (DE)
- Gablingen (DE), Haus Susanne  
Julian Fischer Planungsbüro, Diedorf (DE)
- Genolier (CH), Villa  
Freesuns, Colombier (CH)
- Gebertingen (CH), Chalet  
Megasol Energie, Deitingen (CH)
- Georgensgmünd (DE), Renovation of the church St. Wunibald  
Ing. Büro Wunram, Georgensgmünd (DE)
- Graben (CH), Strohhallenhaus  
Atelier Schmidt, Trun (CH)
- Groningen (NL), Energy Academy Europe  
Broekbakema, Rotterdam (NL)
- Großglockner (AT), Glas façade parking garage  
Architekt DI Egbert Laggner, Sachsenburg (AT)
- Hallwang (AT), Volksschule  
LP architektur, Altenmarkt (AT)
- Heiden (CH), Migros plus energy supermarket  
Alex Buob Architekten, Heiden (CH)
- Helmond (NL), Kuijpers  
Studio Solarix, Amsterdam (NL)
- Hösbach (DE), Holz/Beton/Eis Wohnhaus  
Katja und Jens Ewich, Hösbach (DE)
- Holmdel (US), Bell Works  
Onyx Solar Energy, Ávila (ES)
- Hüttwilen (CH), MFH  
Bauatelier Metzler, Frauenfeld (CH)
- Huglfing (DE), Faust Linoleum  
Ingenieurbüro Kehl, München (DE)
- Illnau-Effretikon (CH), MFH Wattbuck  
Megasol Energie, Deitingen (CH)
- Planeco, Münchenstein (CH)
- Illzach (FR), „Pierre de Lune“  
Kuhn und Lehmann Architekten, Freiburg (DE)
- Jakobsbad (CH), Solar folding roof HORIZON  
dhp technology, Zizers (CH)
- Jengen (DE), Bay@Home - Effizienzhaus  
Sabine Kleiber & Fabian Prinz, Jengen (DE)
- Kissimmee (US), McDonald's Flagship - Disney  
Ross Barney Architects, Chicago (US)
- Kißlegg (DE), Verkehrskommissariat  
Brixner Architekten, Stuttgart (DE)

# ARCHITECTURAL AWARD BUILDING-INTEGRATED SOLAR TECHNOLOGY 2020



- Kölliken (CH), Renovation catholic church  
Buser + Partner, Aarau (CH)  
Planeco, Münchenstein (CH)
- Konstanz (DE), SFH  
Sigma Energy Systems, Philippsburg (DE)
- Kriens (CH), Basler & Hofmann  
Megasol Energie, Deitingen (CH)  
Planeco, Münchenstein (CH)
- Küsnacht (CH), MFH  
Architekturbüro Vera Gloor, Zürich (CH)
- Küsnacht (CH), MFH  
Kämpfen Zinke & Partner, Zürich (CH)
- Ladbergen (DE), Haus Hölter  
Christoph Lüttmann, Ladbergen (DE)
- Langenneufnach (DE), Haus Lisa und Danny  
Staudenschreiner Holzbau, Schwabmünchen (DE)
- Leinfelden-Echterdingen (DE), PV-Façade Mader  
Galaxy Energy, Berghülen (DE)
- León (ES), Convention Center  
Dominique Perrault Architecte, Paris (FR)
- Lhaviyani Atoll (MV), Kudadoo Private Island  
Yuji Yamazaki Architecture, New York (US)
- Liestal (CH), Bicycle shed VIVA  
Antonio Stefanelli Architektur, Pratteln (CH)
- Linz (AT), Lichtbrunnen  
Tp3 Architekten, Linz (AT)
- Luzern (CH), Energiehaus  
BE Netz, Luzern (CH)
- Luzern (CH), MFH  
Megasol Energie, Deitingen (CH)  
Planeco, Münchenstein (CH)
- Männedorf (CH), CO<sub>2</sub>-neutral apartment complex  
René Schmid Architekten, Zürich (CH)
- Mathjalgaon (IN), powerHYDE  
Architecture BRIO, Mumbai (IN)  
billionBricks, Singapore (SG)
- Memmingen, Kita Karoline Goldhofer  
heilergeiger Architekten, Kempten (DE)
- Möriken (CH), PlusEnergie-Haus  
Setz Architektur, Rapperswil (CH)
- Münsing (DE), MFH  
Strobl Grundstücksgemeinschaft, Münsing (DE)
- Munich Airport (DE), Audi Brand Experience Center  
Audi, Ingolstadt (DE)
- Navidad (CL), Rural House #1  
Cristobal Vial Arquitectos, Santiago (CL)
- Nicosia (CY), Science & Technology Center  
Saffet Kaya Design, London (UK)
- Niegripp (DE), Ennogie solar roof  
Ennogie, Magdeburg (DE)
- Nordrach (DE), Schwarzwaldhof  
Michael Welle Architektur, Offenburg (DE)
- Nova Lima (BR), Elephant's Hill House  
24 7 Arquitetura, Campinas (BR)
- Nürnberg (DE), PV-Façade Labenwolf Gymnasium  
Hochbauamt Nürnberg (DE)
- Ober Ramstadt (DE), ArKol strip collector  
DAW, Ober Ramstadt (DE)
- Oberbergen (DE), Haus am Hang  
Staudenschreiner Holzbau, Schwabmünchen (DE)
- Oberlangen (DE), SolteQ solar roofs
- Oberwiesenthal (DE), FASA LODGE  
FASA, Chemnitz (DE)
- Oberwil-Lieli (CH), SFH  
Megasol Energie, Deitingen (CH)
- Oslo (NO), Orkla Group Center  
Intelligent Solar, Siauliat (LT)  
Pj Tech, Ulsteinvik (NO)  
Sagstuen, Hunndalen (NO)
- Oslo (NO), Schweigaads gate 33  
LPO Arkitekter, Oslo (NO)  
BaneNor Eiendom, Oslo (NO)
- Paderborn (DE), IT-Campus  
Ferdinand und Ferdinand Architekturbüro, Budapest (HU)
- Pärnu (EE), Kärg  
Straw Building, Pärnu (EE)
- Palma de Mallorca (ES), Bodega Son Mayol  
Avancis, Torgau (DE)
- Paris (FR), Tribunal de Paris  
Renzo Piano Building Workshop, Paris (FR)
- Parma (IT), Green Life Headquarter Crédit Agricole  
Frigerio Design Group, Genova (IT)
- Paso Robles (US), Saxum Vineyard Equipment Barn  
Clayton Korte Architects, San Antonio (US)
- Peine (DE), Grundschule Stederdorf  
Carsten Grobe Passivhaus, Hannover (DE)
- Pfäffikon (CH), EFH  
Megasol Energie, Deitingen (CH)
- Pollenfeld-Preith (DE), Extension of the office  
Bauer Energietechnik, Ingolstadt (DE)
- Port (CH), School  
Skop Architektur, Zürich (CH)
- Prien (DE), Niedrigstenergie-Sonnenhaus  
Ingenieurbüro Exergenion, Prien (DE)
- Radolfzell (DE), aquaTurm  
Architektur- und Ingenieurbüro Räßle, Radolfzell (DE)
- Reichertshofen (DE), SFH  
Bauer Energietechnik, Ingolstadt (DE)
- Rheine (DE), SFH  
Michael Nowak, Rheine (DE)
- Riehen (CH), SFH  
Planeco, Münchenstein (CH)
- Rotterdam (NL), Hospice de Liefde  
studio AAAN, Rotterdam (NL)  
De Kovel Architecten, Rotterdam (NL)
- Sant Cugat del Vallès (ES), Hewlett Packard  
Onyx Solar Energy, Ávila (ES)
- Schlehdorf (DE), Glentleiten Open Air Museum  
Florian Nagler Architekten, München (DE)
- Schlieren (CH), Carport Migros  
Megasol Energie, Deitingen (CH)
- Schlins (AT), Office building din  
Fink Thunher Architekten, Bregenz (AT)
- Sendenhorst (DE), Eichenhof  
Dachziegelwerke Nelskamp, Schermbeck (DE)

# ARCHITECTURAL AWARD BUILDING-INTEGRATED SOLAR TECHNOLOGY 2020



- Snarøya (NO), Spar  
Meinich Arkitekter, Oslo (NO)  
NICE Solar Energy, Schwäbisch Hall
  - Stuttgart (DE), BIPV at the Z3 building  
Ed. Züblin, Stuttgart (DE)
  - Sursee (CH), Office building BF Architekten  
ErteX Solartechnik, Amstetten (AT)
  - Tennwil (CH), PlusEnergie-Haus  
Setz Architektur, Rapperswil
  - Tilburg (NL), Bus station  
architectenbureau cepezed, Delft (NL)
  - Tiste (DE), Renovation  
autarq, Prenzlau (DE)
  - Treben (DE), Sonnenscheune  
Becker+Wohlfarth+Krüger Architekten, Kirchberg (DE)
  - Tübingen (DE), Office building Westspitze  
a+r Architekten, Stuttgart (DE)  
Westspitze Gewerbebau, Berlin (DE)
  - Urtenen (CH), Renovation farmhouse  
Wohnbaugenossenschaft Solidarisch Wohnen, Bern (CH)
  - Vacallo (CH), deltaROSSO  
deltaZERO, Paradiso (CH)
  - Vilnius (LT), Park Town  
Intelligent Solar, Siauliai (LT)
  - Visp (CH), Commercial construction  
Elektro Supersaxo, Visp (CH)
  - Wabern (CH), Weyerguet  
Halle 58 Architekten, Bern (CH)
  - Warszawa (PL), Poland 2118 Project  
+ Vertical Oasis Building  
FAAB Architektura, Warszawa (PL)
  - Weingarten (DE), SFH  
Sigma Energy Systems, Philippsburg (DE)
  - Wetzikon (CH) Sonnenpark PLUS  
ErteX Solartechnik, Amstetten (AT)
  - Wien (AT), Dachverband der Sozialversicherungen  
Schöberl & Pöll, Wien (AT)
  - Wien (AT), Multi-Aktiv-Fassade  
Treberspurg & Partner Architekten, Wien (AT)
  - Wien (AT), PV roof garden Türkenwirt building  
Baumschlager Hutter, Wien (AT)
  - Wien (AT), Twin - Haus des Meeres  
PUMAR - Pesendorfer Ziviltechniker, Wien (AT)  
LOOPING Bauplanung, Wien (AT)
  - Wilhelmshaven (DE), Power self sufficient MFH  
Wilhelmshavener Spar- und Baugesellschaft
  - Winterthur (CH), PV-„wood“-balcony  
Amena Solar- und Energietechnik, Zürich (CH)
  - Wörrstadt (DE), SFH  
Diego Lobo-Guerrero, Wörrstadt (DE)
  - Wörth (DE), Haus-im-Haus  
Bio-Solar-Haus, St. Alban (DE)
  - Wohlen (CH), Eishalle Sportpark Bünz matt  
phalt Architekten, Zürich (CH)  
Planeco, Münchenstein (CH)
  - Wohlen (CH), Schlössli  
Megasol Energie, Deitingen (CH)
  - Wolfach-Kirnbach (DE), Sumhofspeicher  
Hardy Happel Architektur, Wolfach (DE)
  - Wulfertshausen (DE), Haus Apfelwiese  
Staudenschreiner Holzbau, Schwabmünchen
  - Wurmlingen (DE), EFH in Stroh  
Architekt Otto Merz, Mudelfingen (DE)
  - Zermatt (CH), Cable car station Klein Matterhorn  
Megasol Energie, Deitingen (CH)
  - Zermatt (CH), Cable car station Trockener Steg  
Megasol Energie, Deitingen (CH)
  - Zofingen (CH), Metrohm  
&Seifert Architekten, Zürich (CH)  
Planeco, Münchenstein (CH)
  - Zürich (CH), Coop Letzipark  
Megasol Energie, Deitingen (CH)  
Planeco, Münchenstein (CH)
  - Zürich (CH), MFH Höngg  
Kämpfen Zinke & Partner, Zürich (CH)  
Planeco, Münchenstein (CH)
  - Zürich (CH), MFH mit Energiezukunft  
René Schmid Architekten, Zürich (CH)
  - Zürich (CH), MFH Segantinistrasse  
Megasol Energie, Deitingen (CH)  
Planeco, Münchenstein (CH)
  - Zürich (CH), MFH Zwysigstrasse  
Kämpfen Zinke & Partner, Zürich (CH)
  - Zürich (CH), MFH Affoltern-/Oberwiesenstrasse  
CR Energie, Collombey (CH)
  - Zürich (CH), PV-Façade GLL  
Planeco, Münchenstein (CH)
  - Zürich (CH), Wohnhaus Solaris  
huggenbergerfries Architekten, Zürich (CH)  
ErteX Solartechnik, Amstetten (AT)
- Submissions for the „Student Award“**
- C-House (Solar Decathlon China 2018)  
TU Braunschweig - Institut Gebäude- & Solartechnik (DE)
  - FutureHAUS (Solar Decathlon Middle East 2018)  
Virginia Tech School of Architecture + Design (US)
  - Long-Plan (Solar Decathlon China 2018)  
South China University of Technology, Guangzhou (CN)  
Politecnico di Torino (IT)
  - Mahali One (Solar Decathlon Africa 2019)  
Mahali, Stellenbosch (ZA)
  - MizanHome (Solar Decathlon Middle East 2018)  
Faculty of Engineering, Universiti Sains Islam Malaysia
  - A global building study analyzing the influence of building geometry on the potential solar energy generation and energy losses in dense urban areas (Master Thesis)  
Jakob Moritz Becker, Bauhaus-Universität Weimar (DE)
  - Communal Power Plant (Konzeptuelles Diplomprojekt)  
Klara Jörg, Universität für angewandte Kunst Wien (AT)
  - The Lake House (Student project)  
Lujain Ikhmais  
Reza Pournajafi  
Eastern Mediterranean University