

# MORE THAN A FAÇADE



# ABOUT InDeWaG

The InDeWaG, standing for Industrial Development of Water Flow Glazing, is an Innovation project, aiming in an active control of the thermal stability in interior places, while absorbing the solar energy and reducing solar heat gains. The project is financed by the Horizon 2020 Program of the European Commission. Along with several Universities, Laboratories and other organizations from Germany, Bulgaria and Spain, ETEM is a part of a multidisciplinary consortium of professionals, devoted to integrating a state-of-the-art concept and technology in buildings' envelopes.

Nearly Zero Energy Building (NZEB) performance levels will become a "must" for new buildings in Europe by the end of 2020 in compliance with the Energy Performance of Buildings Directive (EPBD). InDeWaG's objectives concentrate on the development of an exemplary building design, which has a huge potential to minimize energy requirements and meet NZEB performance levels in a multitude of building types and for different climatic zones and local building sites.



**ABSORBING**  
THE SUN ENERGY



# The InDeWaG VISION

The InDeWaG project tackles the cost reduction goal for construction of Nearly Zero Energy Building (NZEB) and provides energy efficient performance solution by using Water Flow Glazing (WFG) façades and Radiant Interior Walls. The distinguishing characteristic of a smart glazing is the reduction of both heating and cooling demand during the whole year by means of energy efficient elements. Design, evaluation and industrial manufacturing of WFG modules will be the final result of the InDeWaG project.

WFG modules will lead to a significant improvement in the smart glazing façade market, introducing a new product that could readily adapt in response to changing climatic conditions or occupants preferences. The expected impact on costs is considered significant due to reduction of energy costs, heating and cooling demand.



**NZEB**  
NEARLY ZERO  
ENERGY BUILDING



# ETEM and InDeWaG

The Façade and Partition walls systems were designed and developed for the Fluid Flow Glazing technology by ETEM's Research&Development team under the InDeWaG project, financed by the Horizon 2020 Program of the European commission.

The technology is the essence of the InDeWaG project, leading to a multi-layer architectural and technological advantages:

- maximum use of daylight
- NZEB Performance
- standardized building components
- minimum HVAC expenses
- no need for conventional sun-shading
- full transparency
- full daylight autonomy
- reduced solar radiation



## DESIGN SPECIFICS

The InDeWaG project, along all its system components and know-how is based on an in-depth multidisciplinary full scope analysis, covering all stages of the design process:

- theoretical model
- mathematical and computational analysis
- scaled and real-size prototyping
- intermediate testing of the system components
- proof of concept
- notified body testing and assessment
- monitoring the performance under real-life environmental conditions



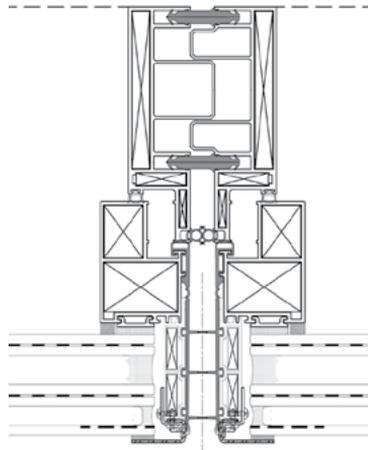
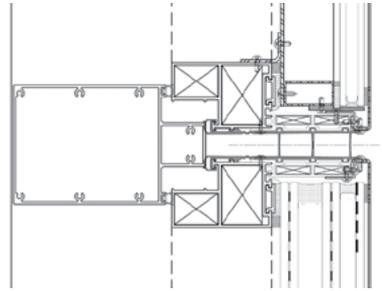
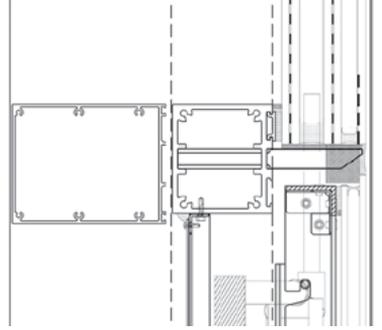
Piloting for the InDeWaG project, the new modular façade system is ETEM's first frame-in-frame solution for both single story and high rise buildings.

The Façade provides a floor-to-ceiling solution, achieving a fully transparent building envelope with up to 1300 x 3000 mm glazing units.

The Façade is in full compatibility with the InDeWaG Fluid Flow Glazing Unit Technology, resulting in radiant Cooling and Heating Living Environment, with minimized HVAC consumption, aiming in NZEB performance.

#### FAÇADE SYSTEM ADVANTAGES:

- Easy mounting and maintenance frame-in-frame design
- Standardized system components
- Complete System Modularity
- Suitable for up to 1300 x 3000 x 86 mm Triple glazing units
- Developed to meet the NZEB performance
- Compatible with the InDeWaG Fluid Flow Glazing technology, leading to radiant cooling and heating with minimized HVAC consumption and eliminating the need for conventional sun-shading



# UNITISED FAÇADE SYSTEM





# PARTITION WALLS SYSTEM

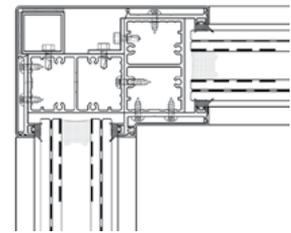
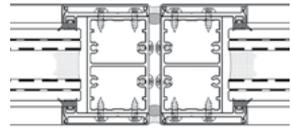
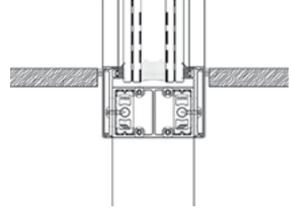
Completing the InDeWaG project, the new partition walls system is a fast and smooth solution for glazed room partitions.

Following the design concept, the Partition Walls provide a floor-to-ceiling solution, achieving fully transparent room partitions with up to 1300 x 3000 mm glazing units.

The Partition walls system is in full compatibility with the InDeWaG Fluid Flow Glazing Unit Technology, resulting in radiant Cooling and Heating Living Environment, with minimized HVAC consumption, aiming in NZEB performance.

## PARTITION WALLS SYSTEM ADVANTAGES:

- Easy and fast assembling and mounting
- Standardized system components
- Complete System Modularity
- Suitable for up to 1300 x 3000 x 60 mm Double glazing units
- Developed to meet the NZEB performance
- Compatible with the InDeWaG Fluid Flow Glazing technology, leading to radiant Cooling and Heating with minimized HVAC consumption and eliminating the need for conventional sun-shading



THE INDEWAG PROJECT IS AN **INNOVATION RESEARCH PROJECT**, LED BY A MULTIDISCIPLINARY CONSORTIUM TEAM OF PROFESSIONALS FROM BULGARIA, SPAIN AND GERMANY:

