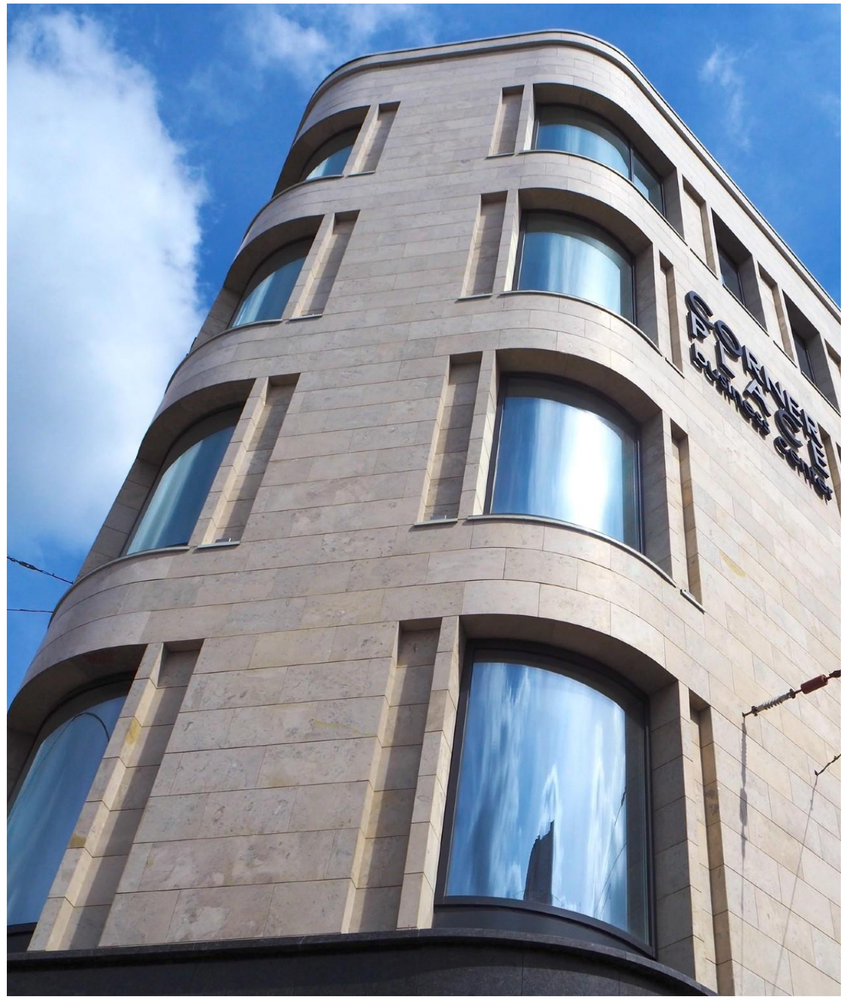


NATURAL STONE FACADE SOLUTIONS

2021

Learning Objectives

- Review Applications for stone ventilated stone systems.
- Explain details of building blocks of high performance stone subsystems.
- Review attachment choices.
- Explain value engineering opportunities including replacing HSS.

ABOUT

For over 25 years U-kon Engineering has stood for innovative sub-structure systems for ventilated facades.

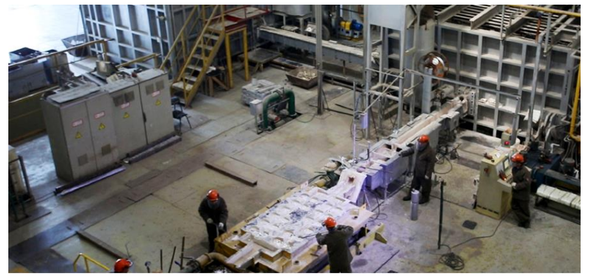
In collaboration with leading manufacturers of facade cladding materials, we develop and produce high-quality solutions with a focus on an optimum price and performance ratio.

Our state of the art production facility that TUV ISO 9001 certified can produce materials in short notice.

Production capacity - 240,000 m2 per month
Industrial and warehouse complex - 7000 m2
Implemented facades - 21,000,000 m2
Over 40 system modifications





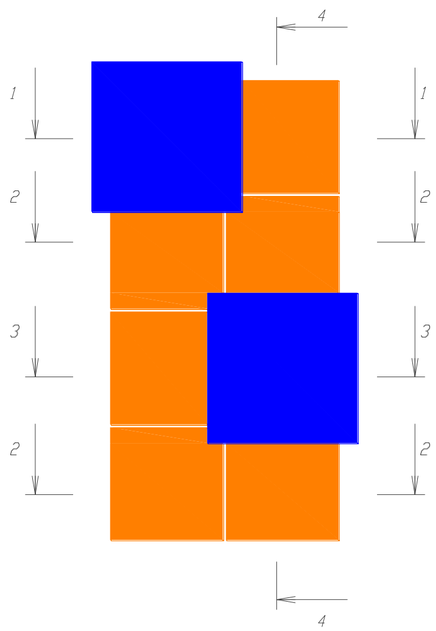



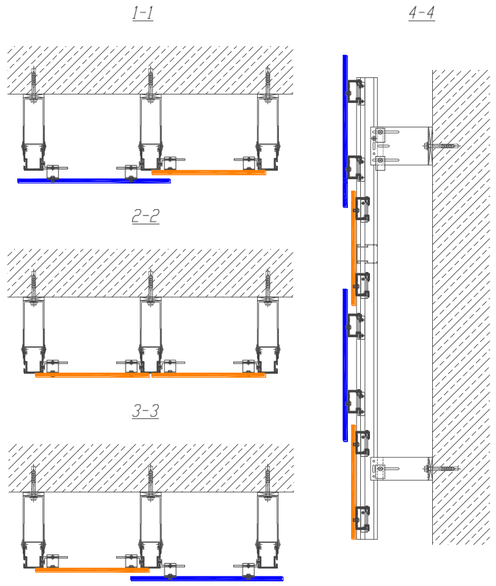
R&D

Our R&D and Engineering team are constantly in search of architectural and technical excellence of facade systems. We share our entire knowledge with our customers and provide custom solutions to reduce the increasing complexity of facade design and installation.

As part of our work, we would like to highlight the technical support provided for each project from start to end of the construction.

All our experience in design and realization make it possible for us to achieve almost any facade design.



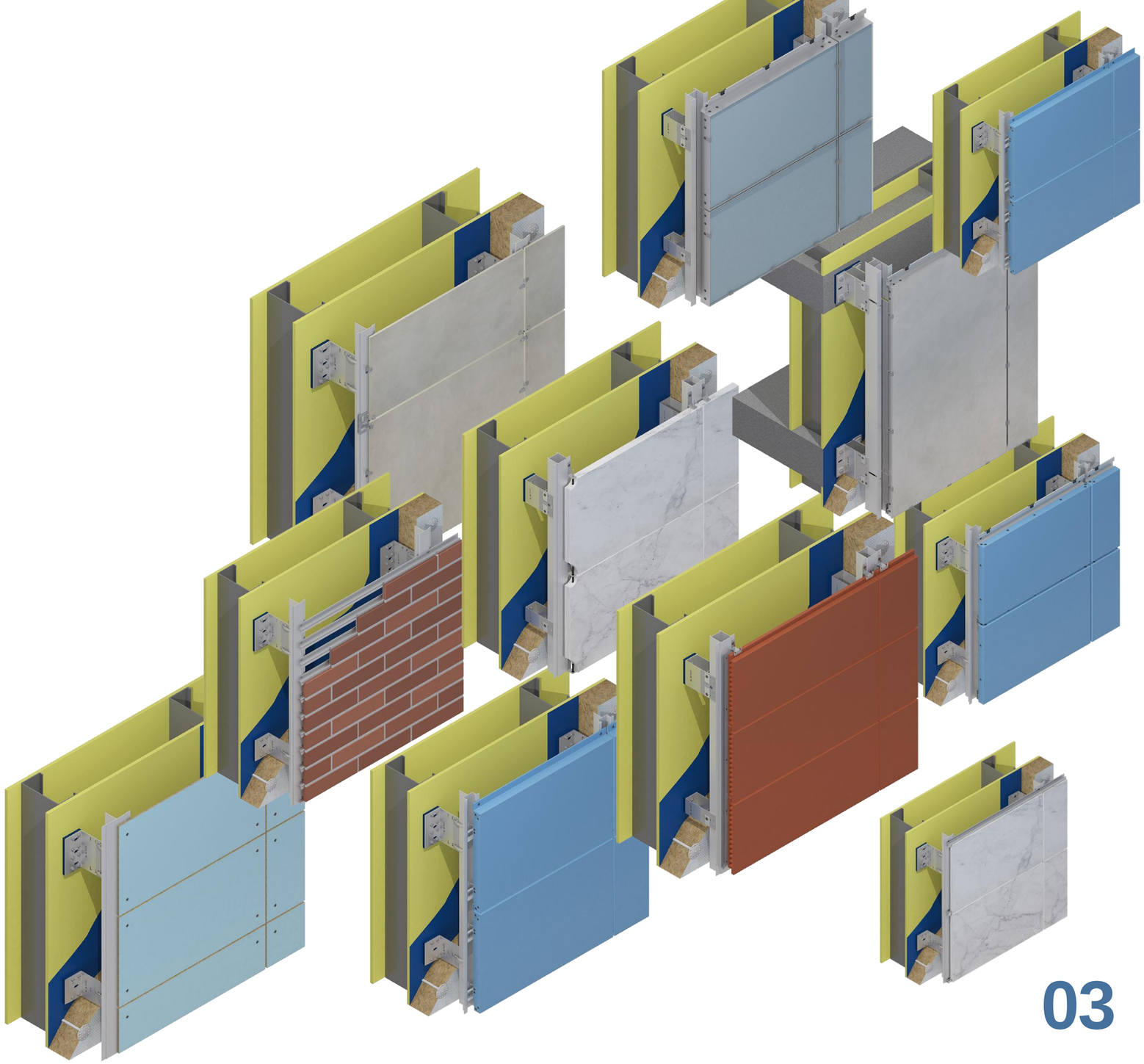


SYSTEMS

Our substructure systems are able to adapt to the specific needs of each project.

We can provide customized systems for specific projects and provide full support at every stage of the project starting from the early design stage.

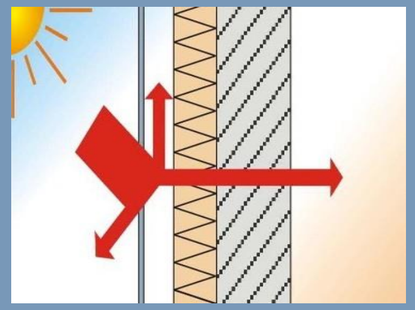
U-kon Systems has always been considered a high-quality rear ventilated facade manufacturer in terms of technology, quality and safety. All these qualities helped us to win large-scale projects such as universities, hospitals, airports stadiums etc.



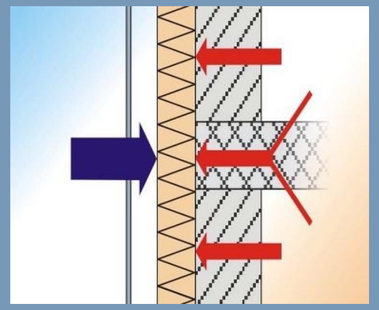
U-kon SYSTEMS

REAR VENTILATED SYSTEM

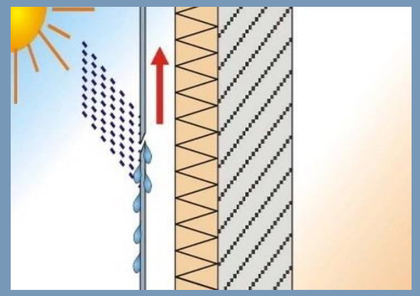
System provides a shield against rain, snow, and ice, preventing penetration water, mold through exterior walls and providing an excellent thermal and sound performance of the building.



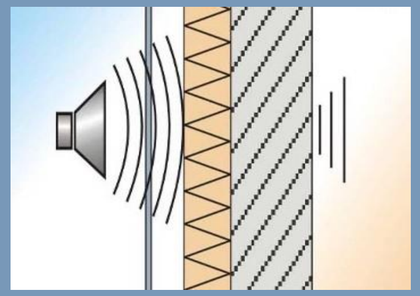
The cladding protects enclosure walls against the direct sun. The air cavity between insulation and cladding created a "chimney effect" which cools the building and helps to save energy in the summertime.



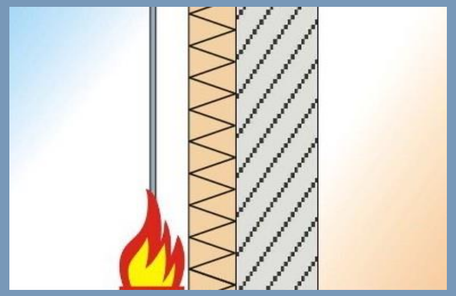
In wintertime exterior insulation layer preventing the escape of heat from the inside of the building.



The rear ventilated facade allows water to penetrate through open joints but not more than 5%. Effective ventilation behind the cladding effectively removing any water inside of facade system.



The rear ventilated facade consists of several layers including fibre insulation which helps to reduce a sound level up to 15 dB.

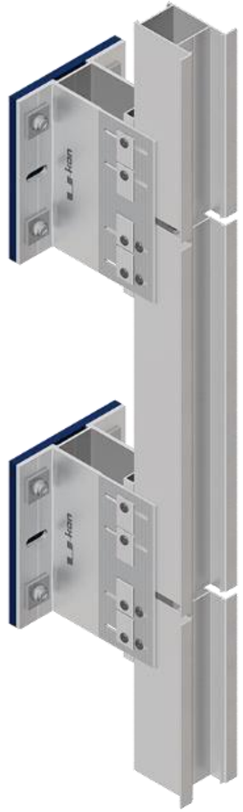


Proper design rear ventilated facade is a fire safe.

U-kon® SYSTEMS

CONFIGURATIONS

U-kon Systems offering several options to attach wall brackets to the wall depends on facade design, structural or thermal requirements.



Assembly block “ATS HIGH”
Allowing us to install wall brackets directly to the floor slabs avoiding the installation of wall brackets to the wall. This solution has a lot of advantages:
-Best thermal performance by reducing the number of connections (wall brackets) to the wall
- Fast installation
- Suitable for all U-kon Systems
- Best solution for complex facade design

Assembly block “ATS”
ATS assembly provides an effective installation substructure system Ukon to the concrete, CMU and brick backup walls.
The ATS assembly can be used for heavy cladding panels 250 kg/m2 (51 psf)
Suitable for all U-kon Systems

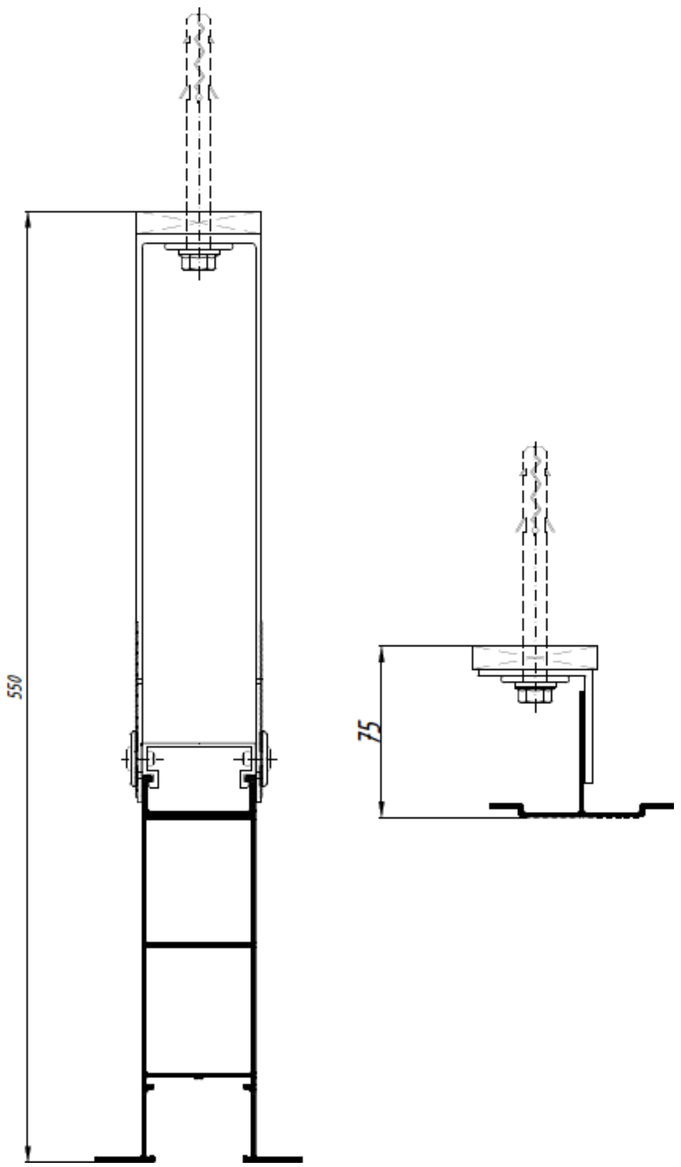
Assembly block “LT”
The most common system to attach wall brackets directly to steel or wood studs wall.
Suitable for all U-kon Systems

WALL BRACKET ADJUSTABILITY

The U-kon Systems has a wide variety of wall brackets that can accommodate any thickness of exterior insulation.

The maximum standard extension is 550 mm (21.5”)

The bracket is adjustable in three directions.



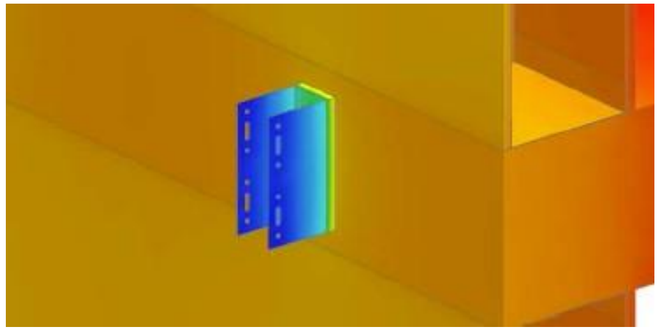
U-kon® SYSTEMS

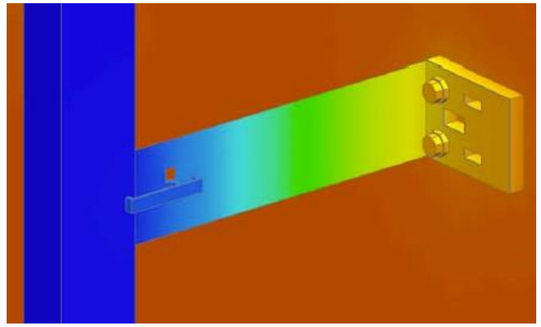
THERMAL PERFORMANCE

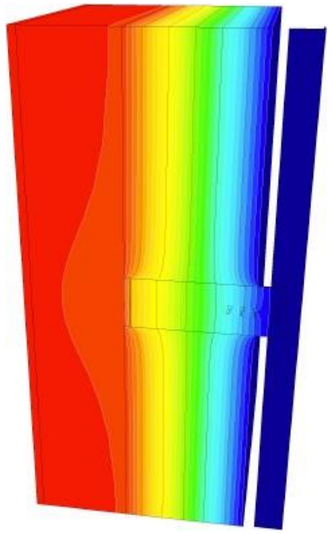
U-kon Systems can achieve the highest thermal performance requirements.

The U-kon System components Passive House certified.

The U-kon System components conducted long term actual full scale thermal tests and 3D modelling

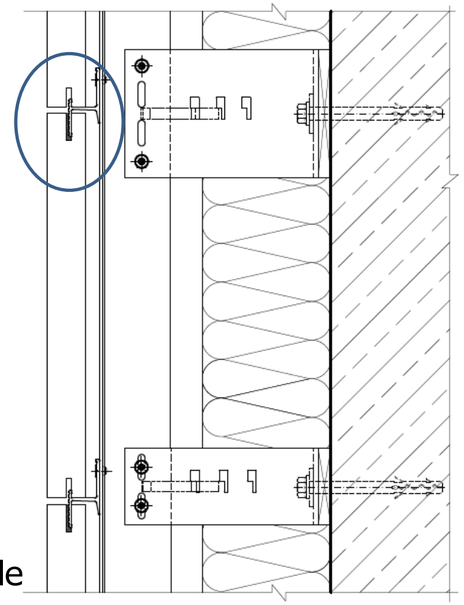


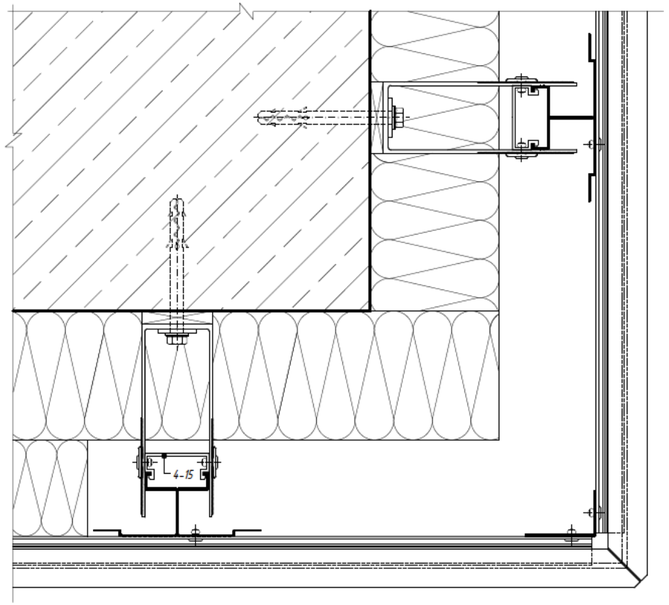




LT-316

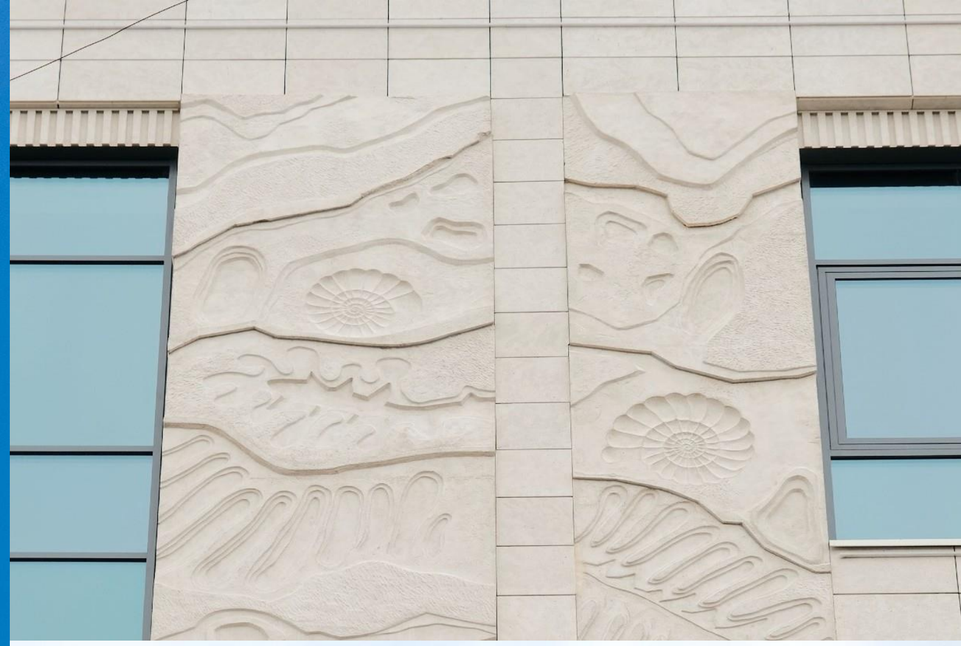
Thermally broken rainscreen system to attach stone wall panels using continuous kerf

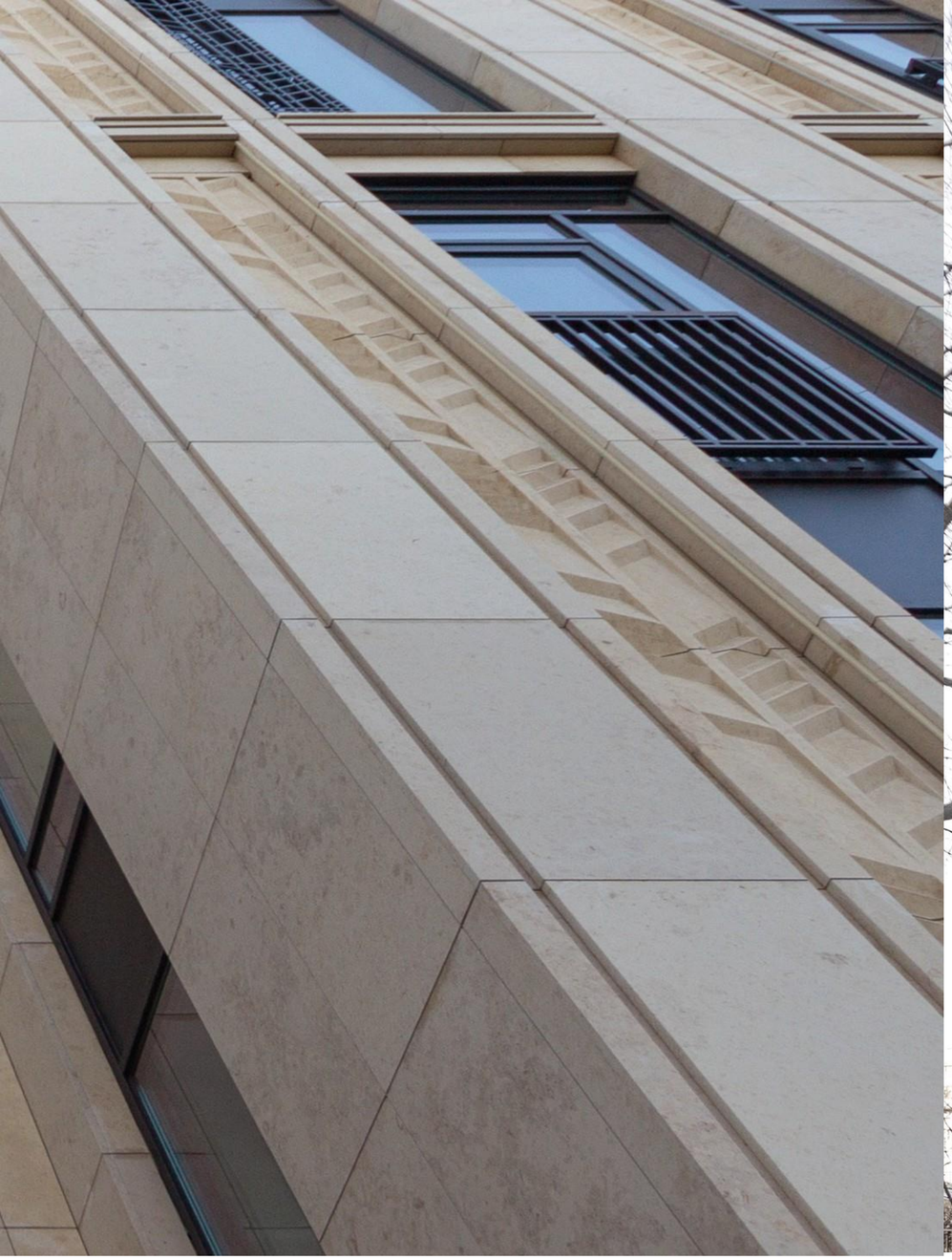




BENEFITS:

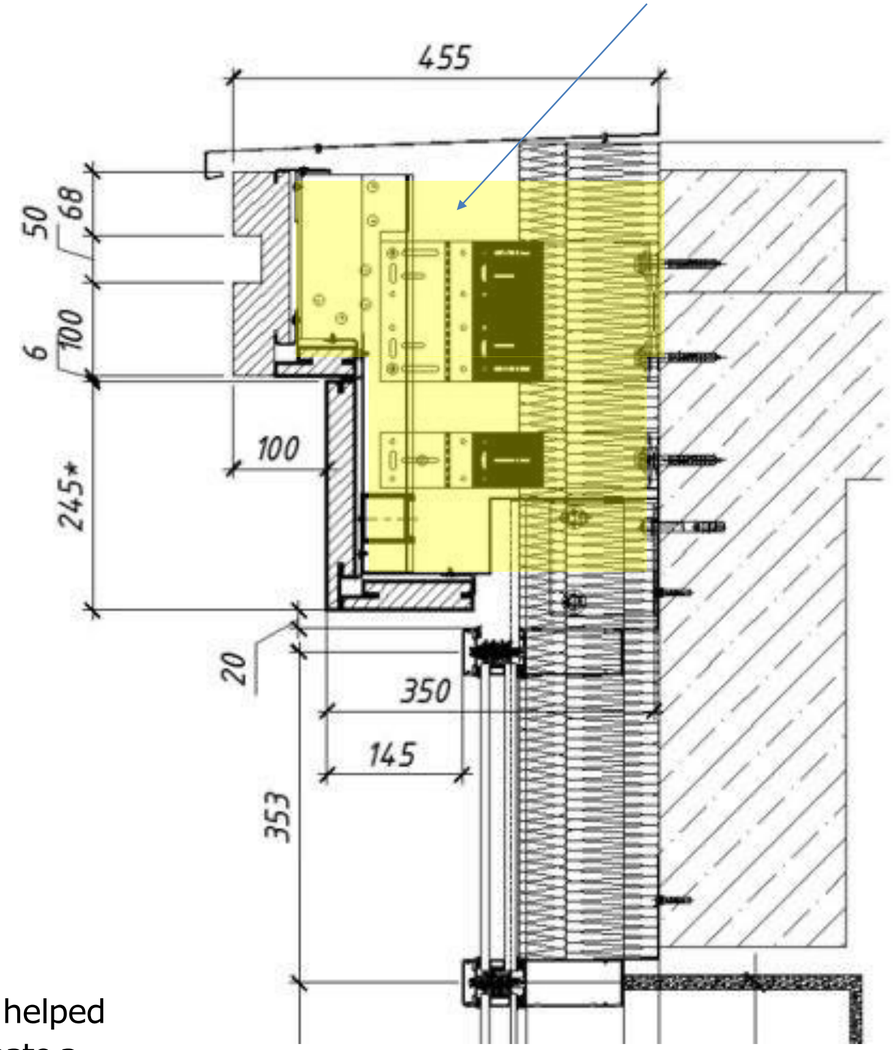
- Fast installation
- Stone thickness 20 mm - 60 mm
- Vertical or horizontal layout
- Various installation pattern available
- Possible to use for soffits application





INSTALLATION DETAILS

All U-Kon System, instead of HSS

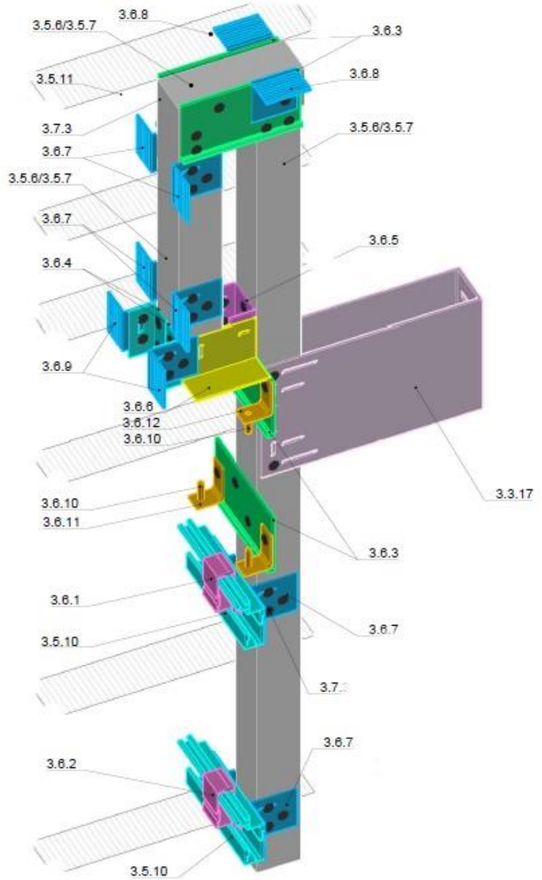


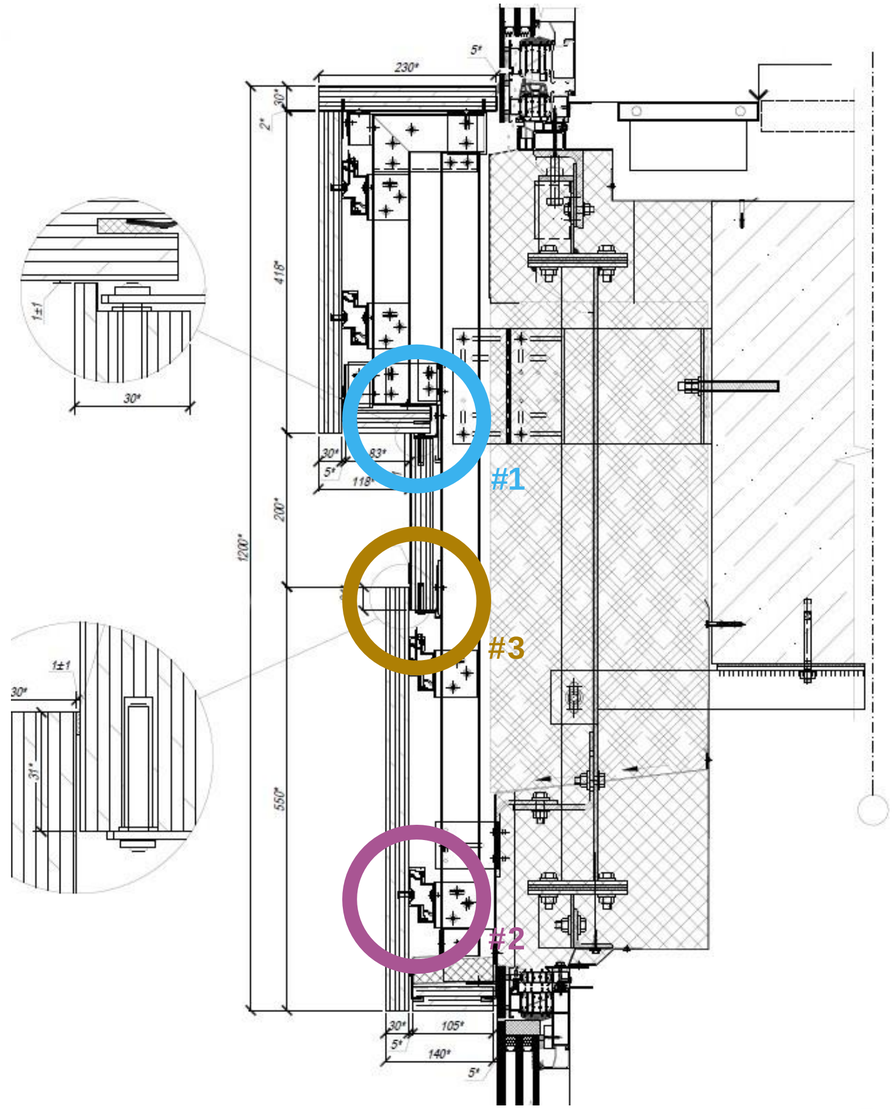
Value Engineering: removing HSS

ATS type Wall brackets with additional extensions helped to achieve the necessary offset from the wall to create a cornice, cutting cost, and improving adjustability

Using 30 mm panels helped to reduce the weight of the cornice and cost of the materials

INSTALLATION EXAMPLES





Great example showing how of combination of 3 different assemblies can help to achieve architectural idea.

#1 System 316 (KERF)
#2 System 228 (KEIL)
#3 System 325 (PIN)

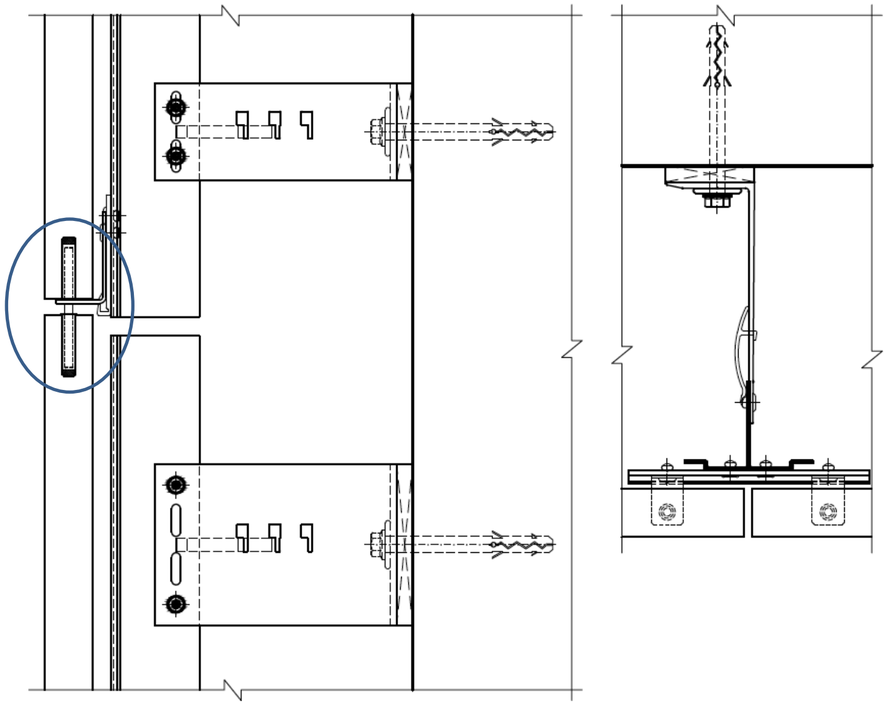
Using System #2 allows us to overlap the panel installed with System #3. Both system using the same vertical profile. This method can eliminate additional vertical profiles and wall brackets.

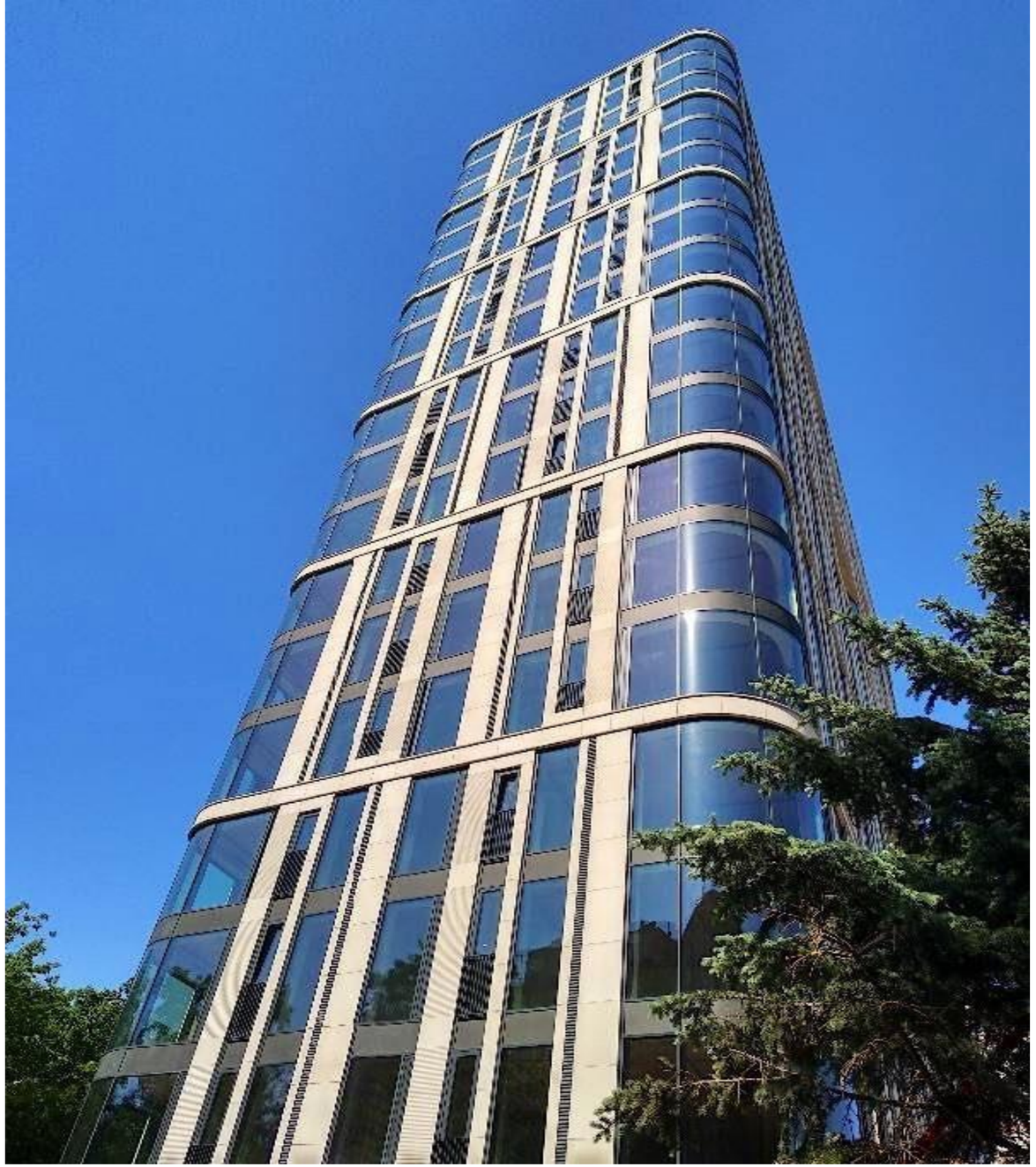
LT-325

Thermally broken rainscreen system to attach stone wall panels using pin

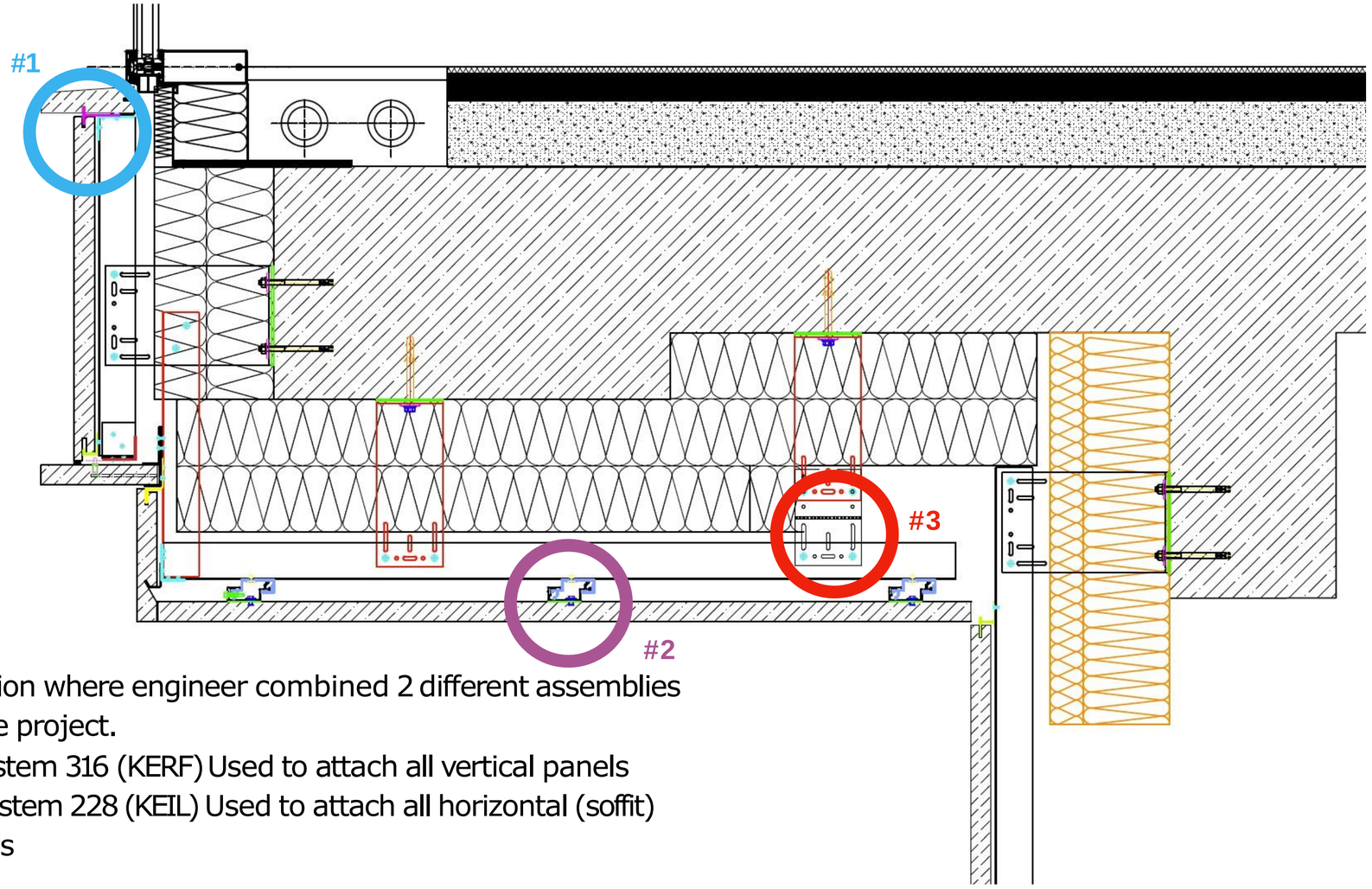
BENEFITS:

- Site fabrication
- Stone thickness 20 mm - 60 mm
- Vertical or horizontal layout
- Various installation pattern available
- Possible to use for soffits application
- Possible to install curved panels





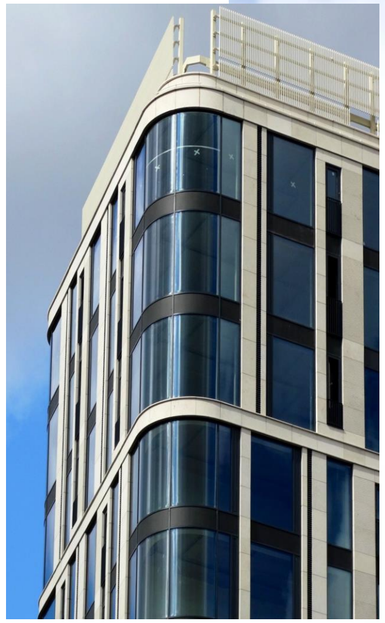
INSTALLATION DETAILS



Solution where engineer combined 2 different assemblies in one project.
#1 System 316 (KERF) Used to attach all vertical panels
#2 System 228 (KEIL) Used to attach all horizontal (soffit) panels

Different slab thicknesses necessitate the use of wall bracket extension (#3)

U-kon® SYSTEMS



LT-228

Thermally broken rainscreen system to attach stone wall panels using undercut anchors

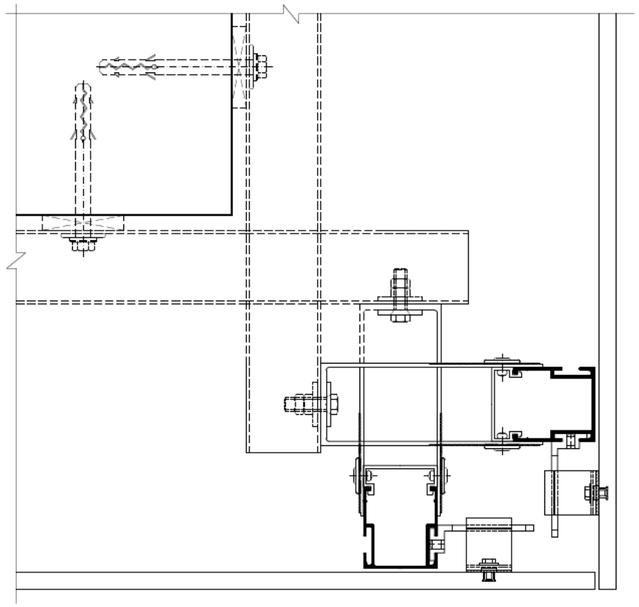
BENEFITS:

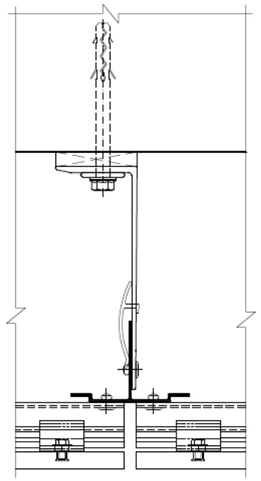
- Install large size of stone panels

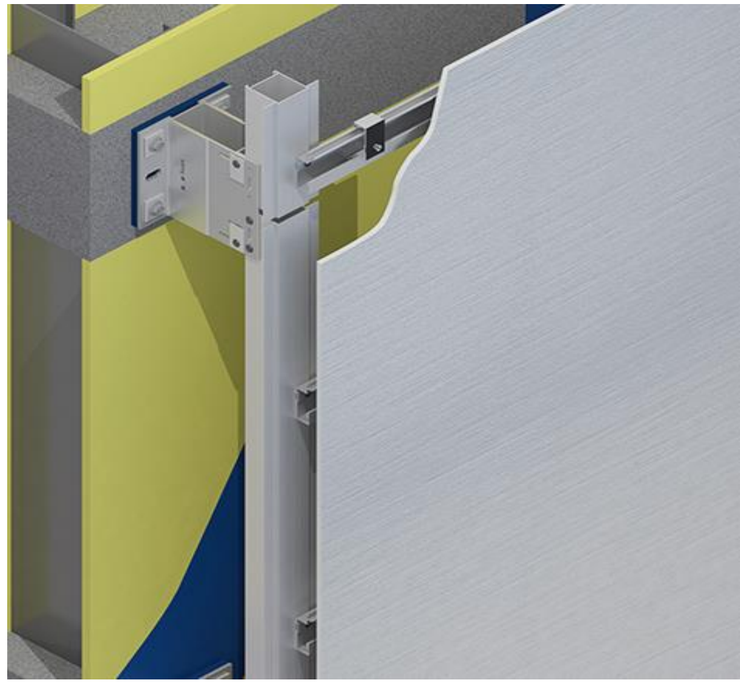
- Vertical or horizontal layout

-Various installation pattern available

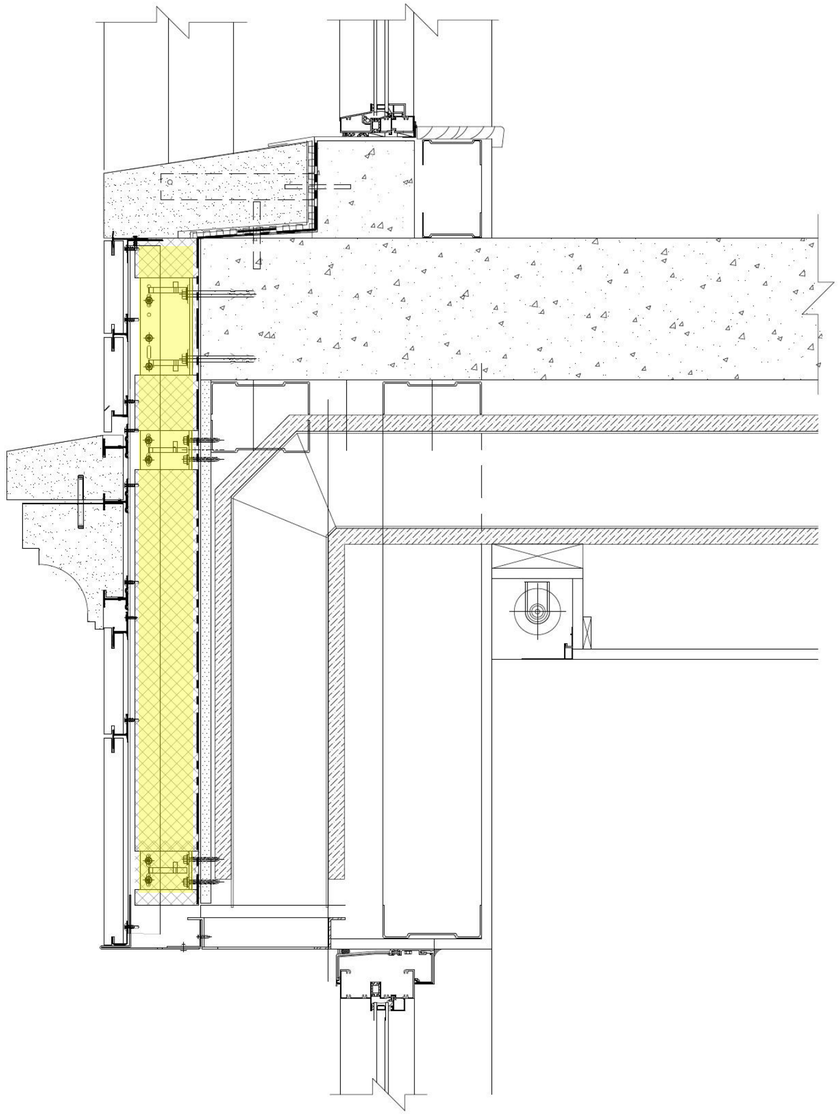
-Possible to use for soffits application







INSTALLATION DETAILS



Using special shape of horizontal profiles to secure heavy cornice pieces (limestone)
The same substructure were used to attach vertical stone panels above and below cornice .

U-kon SYSTEMS

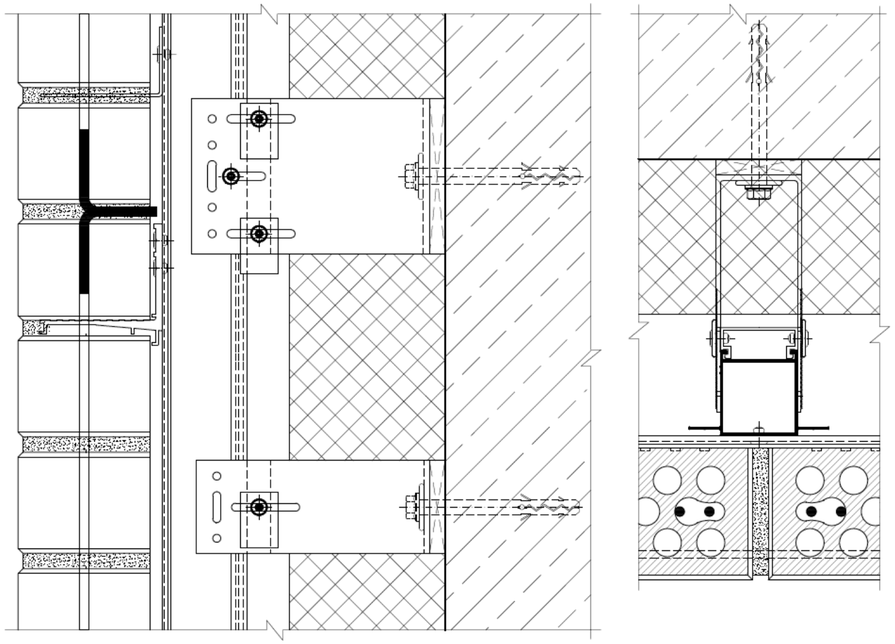
ATS-450

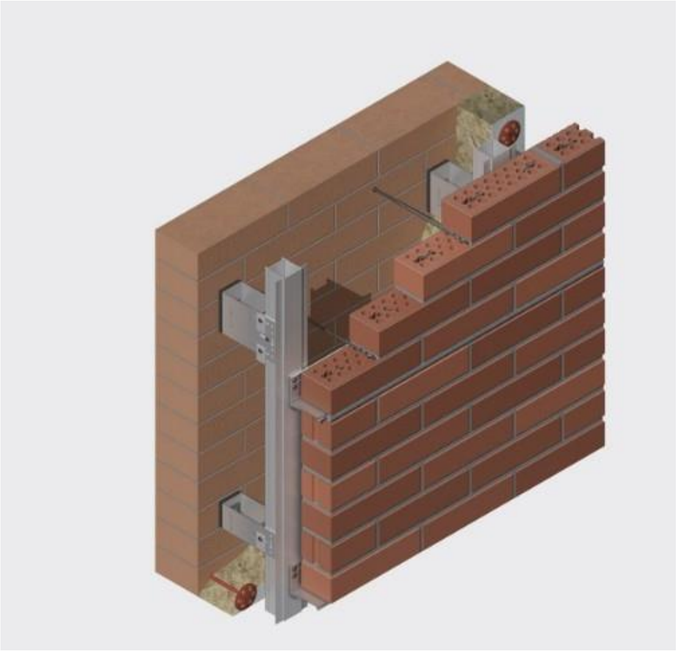
Thermally broken rainscreen system to attach
Full size brick

BENEFITS:

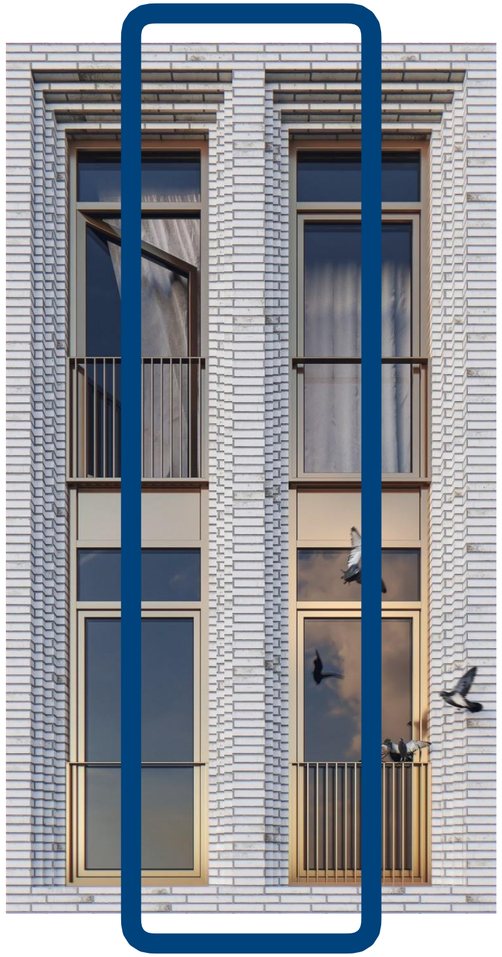
-Designed to withstand heavy claddin

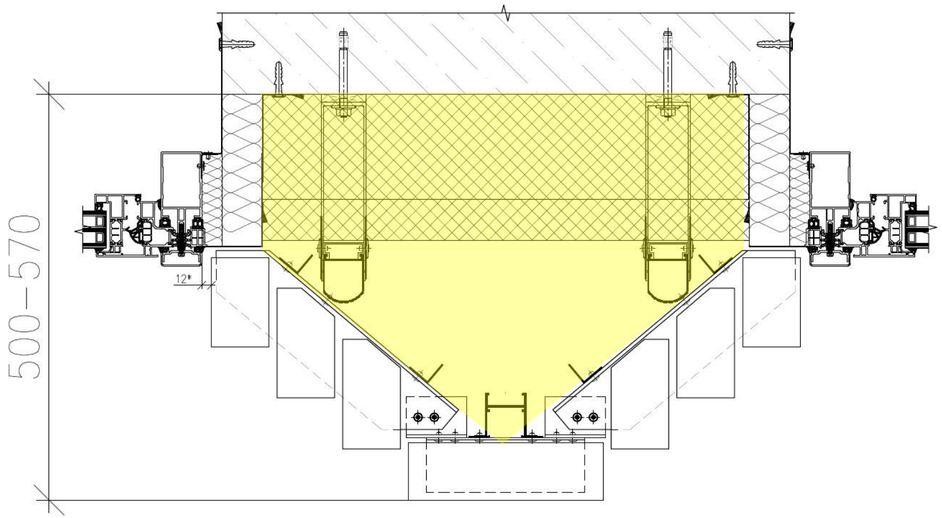
-Various installation pattern available

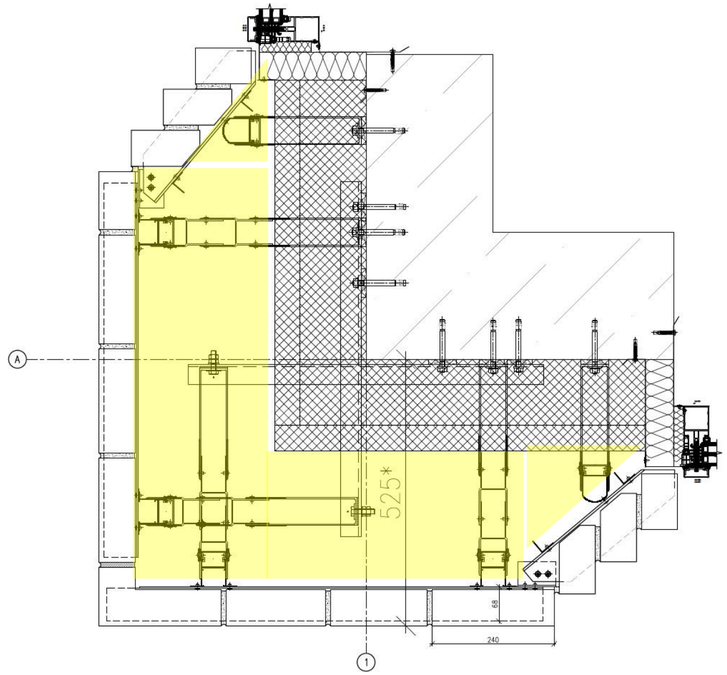




INSTALLATION DETAILS







Using heavy duty vertical profiles with combination of “U” shape wall brackets can accommodate any loads and use in complex facade shapes

THANK YOU
THIS SLIDE FOR YOUR NEXT PROJECT