LINEA
cladding systems

LINEA –
The new natural stone façade

Sustainable and economical
Innovative technical design
Elegance and superior architectural quality

The new natural stone façade

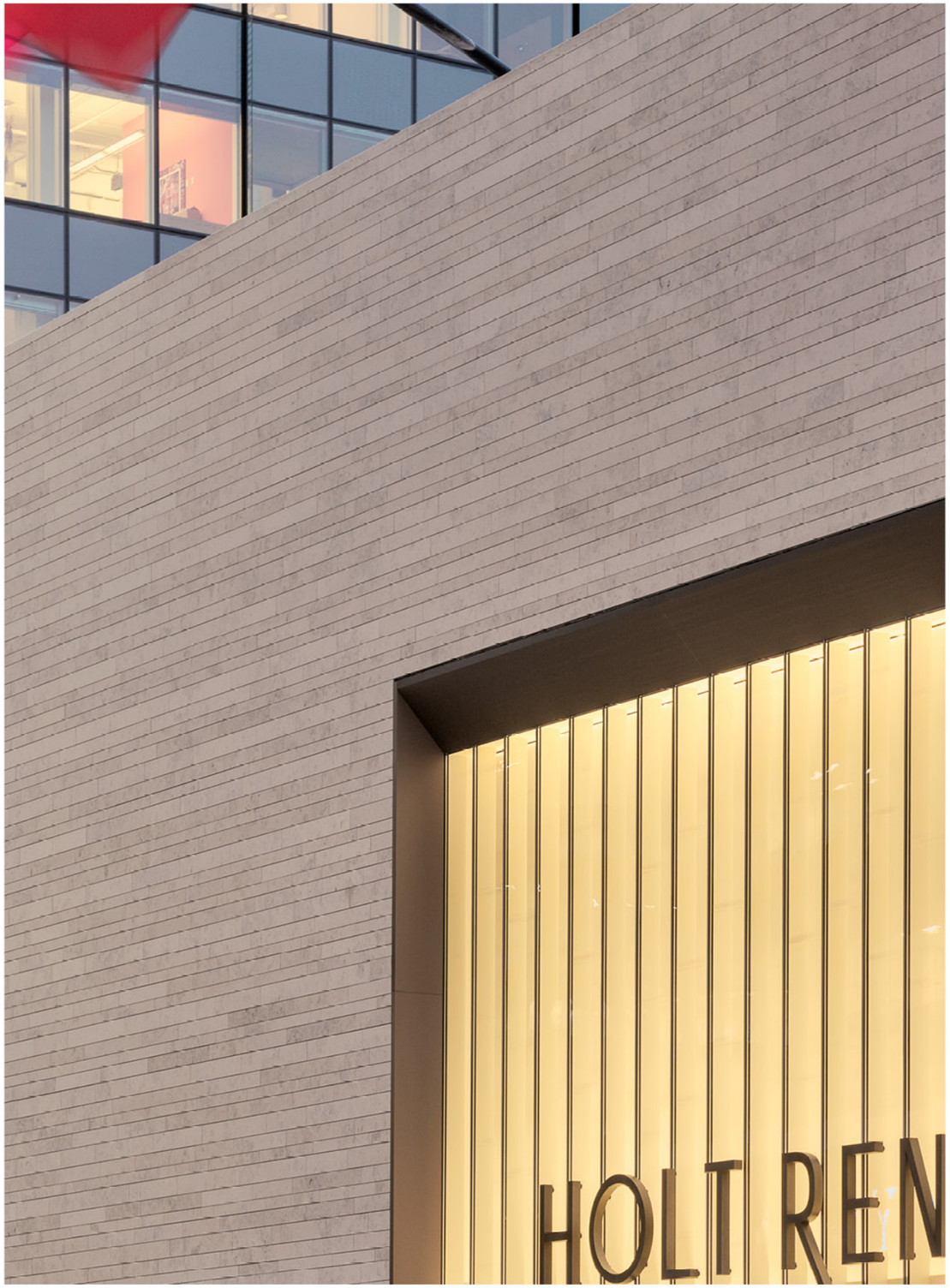
The patent-pending ventilated cladding system LINEA is arranged using smaller stone patterns and offers a wide variety of design options for the realization of high-end natural stone façades.
Our cladding systems consist of specific components that can be precisely combined and thus offer unrivaled flexibility in façade design. The simple installation and comprehensive manual bring our systems to the pinnacle in the world of façade design.

The inconspicuous aluminum sub-construction allows for fast and efficient installation of natural stone panels in a variety of dimensions, colours, and finishes. The revolutionary LINEA system enables the mounting of natural stone panels for small pattern claddings in an economical and mechanically safe way that was previously not feasible. The LINEA sub-construction consists of specialized vertical profiles and clips. These vertical profiles can be fixed to any type of primary sub-construction made of aluminum, steel or wood. Clip positions are pre-drilled on the vertical profiles using CNC machines to match the different panel dimensions and ensure an accurately fitted joint pattern. The clips can also be pre-installed on the profiles upon request.

The natural stone panels are grooved on the backside allowing anchoring in the clip. The stones can be calibrated to identical or intentionally different thicknesses to achieve customized esthetic properties such as shadow effects to better realize the clients' visions.

Product advantages

- Versatile design options through a wide range of natural-stones and finishes
- Small joints and inconspicuous anchoring
- Variable panel heights for an individualized cladding design
- Economical, small pattern natural stone cladding
- Stress-free anchoring of the individual stone panels
- Panels can be individually mounted and dismantled
- Economical design and installation utilizing random-length pieces
- Simple installation of pre-configured profile components regardless of weather conditions
- Exceptional sustainability with regards to natural resources, energy efficiency, durability and recyclability
- Realization of passive house standard in connection with a thermal-bridge free sub-construction from GFT Fassaden AG or BWM Dübel+Montagetechnik GmbH



Holt Renfrew

Toronto, Canada

Dietfurt Limestone grey, honed

Range of materials

Top of the line Dietfurt natural stones are ideally suited for different surface finishes. Their natural and timeless colours offer an enormous variety of design options and can be tailored to each client's vision.

For more information about our material range please visit **https://www.franken-schotter.com/en/natural-stone/**.

Technische Daten

Natural stones
Dietfurt Limestone, Dietfurt Dolomite,
Dietfurt Travertine, Origin: Treuchtlingen-Dietfurt,
Kaldorf, Wachenzell (Bavaria), Germany

Panel thickness
30 to 40 mm (alternatives available upon request)

Panel dimensions
– Panel heights: 120 to 200 mm
(alternatives available upon request)
– Panel lengths: random lengths up to 900 mm
(alternatives available upon request)

Fixing
Inconspicuous clip system

Finishes
– sandblasted – honed
– bush-hammered – brushed

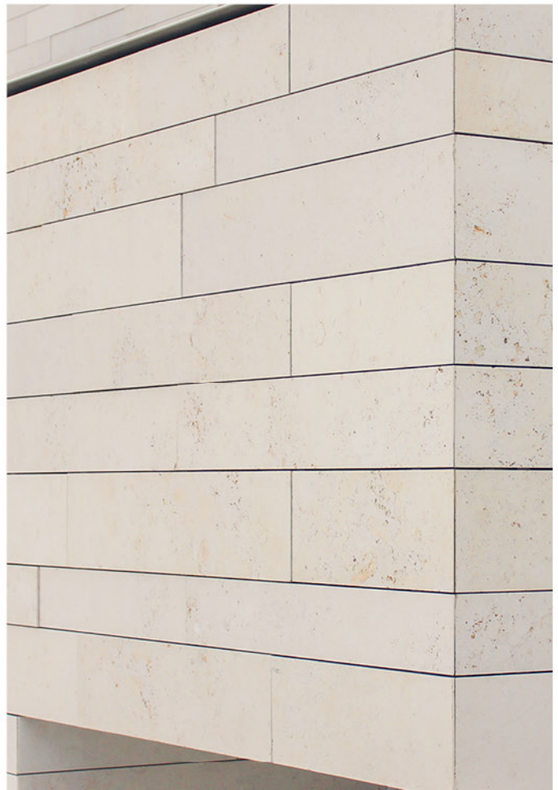
UV-Protection
All panels are 100 % lightfast and UV stable

BKZ
6.3, non-flammable

Recycling
Natural stone and sub-construction are completely recyclable

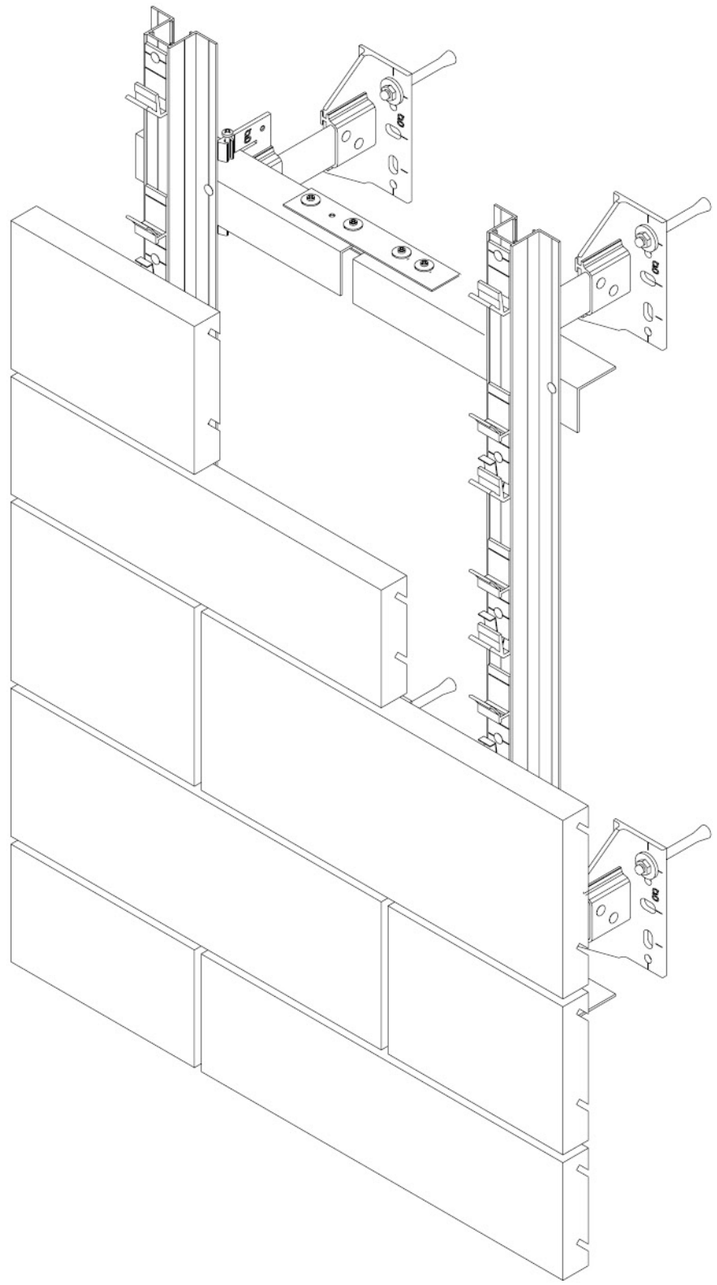
Ecology
Suited for Minergie Eco

Additional features
Top quality workmanship and project specific fabrication finished in our own factories allow for simple and installation-friendly fixing



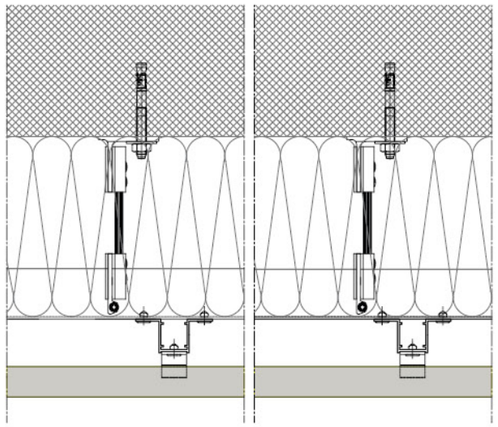
Technically innovative construction

Façade construction in a 3D-view

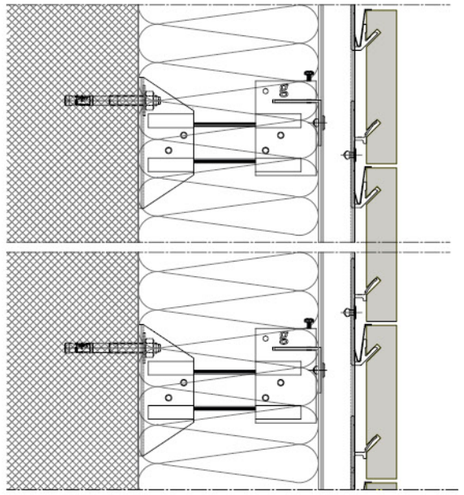


Façade construction with sectional drawings

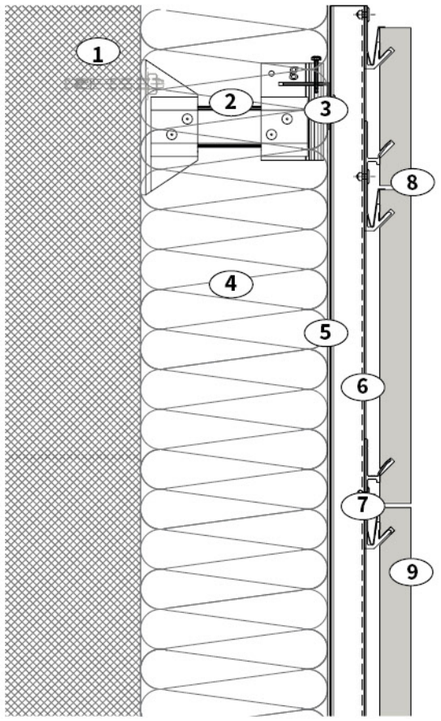
Horizontal view



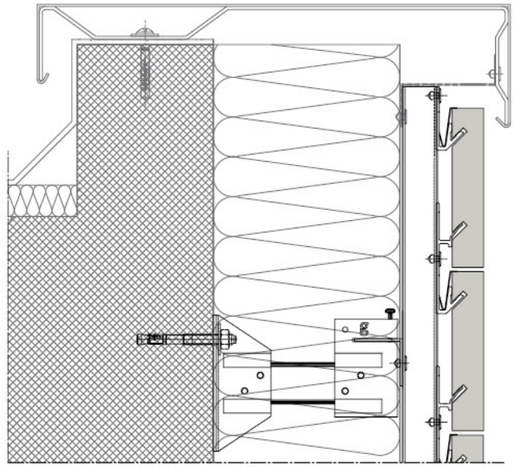
Vertical view



Pedestal completion (bottom)

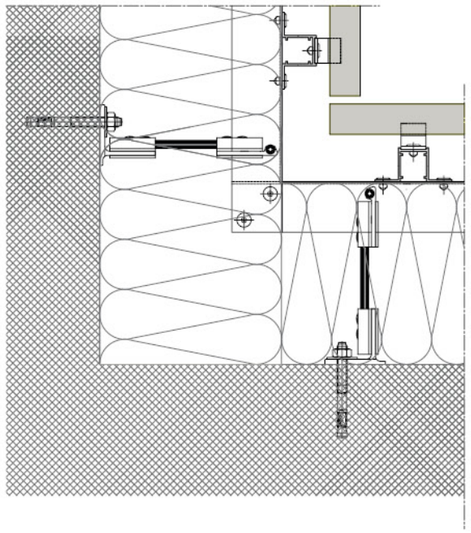


Attic completion (top)

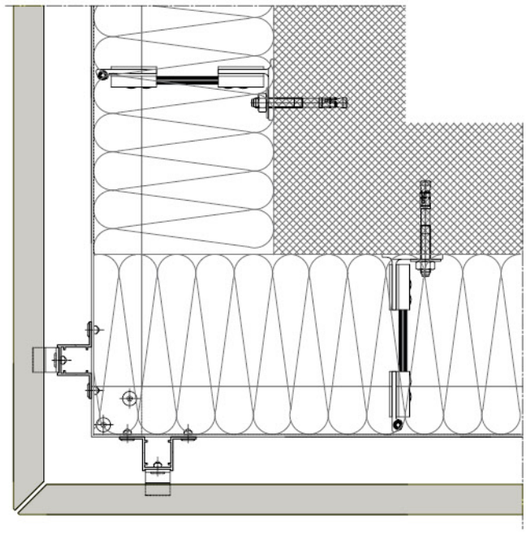


1. 1. Mounting bracket anchor
2. 2. GFT Thermico mounting bracket horizontal
3. 3. GFT 90° angle horizontal
4. 4. Insulation
5. 5. Cladding membrane
6. 6. Vertical GFT 88 load bearing profile
7. 7. GFT 88 joint bracket
8. 8. GFT 88 locking spring
9. 9. Natural stone with LINEA groove

Interior corner



Exterior corner



Private Residence

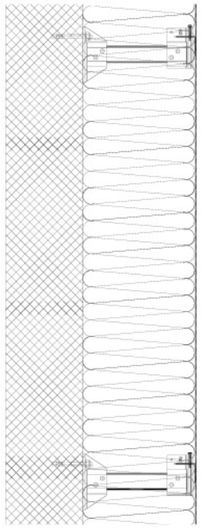
Chämberg, Switzerland

Dietfurt Limestone beige, sandblasted

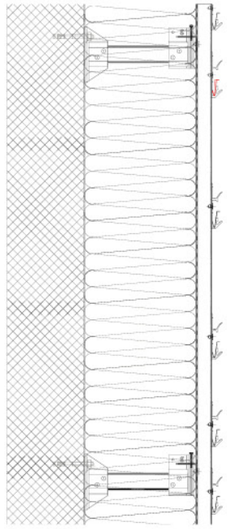
Installation is simple and not influenced by weather conditions

Installation sequence on walls

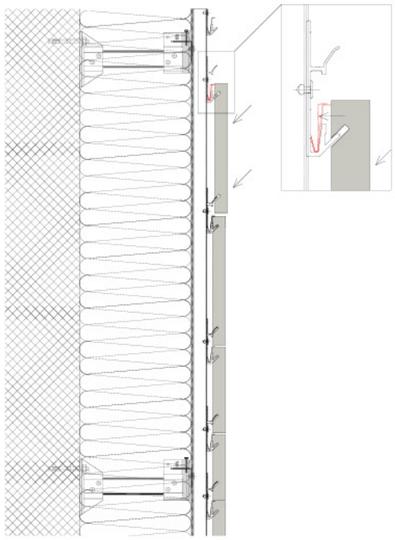
1. Installation of the primary undercons-truction incl. arrangement of the hori-zontal L-angle.



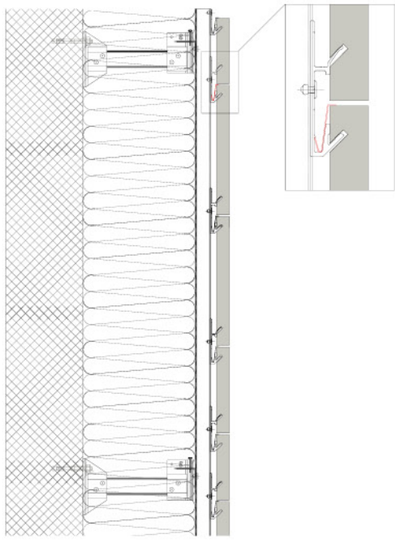
2. Installation of the insulation incl. anchorage. Cladding membrane are glued on the horizontal L-angle.



3. Vertical GFT 88 load bearing profile incl. pre-assembled clips are double riveted on the intersection of the hori-zontal L-angle. A fix- and variable floa-ting point must be designed for the vertical profiles.



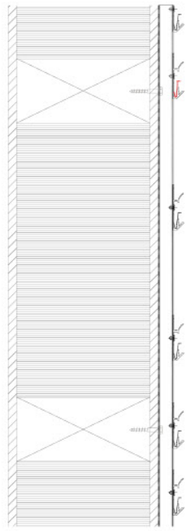
4. Natural stones with integrated kerfs are placed in the clamp, a safety spring locks in the stone and secures it.



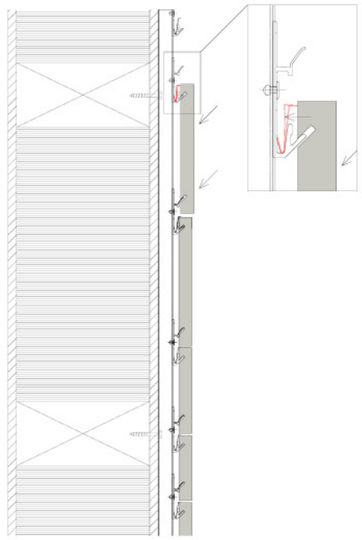
5. Complete suspended LINEA cladding system.

Installation on wooden beams

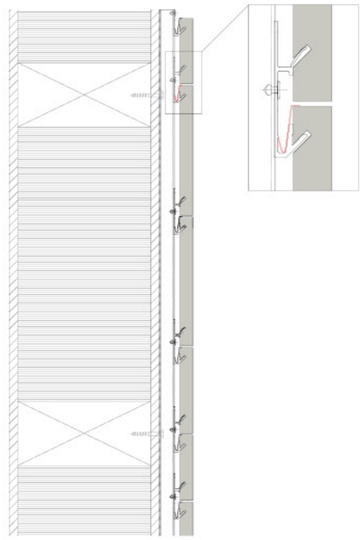
1. Cladding membrane is fixed to the wooden element.



2. Vertical GFT 88 bearing load profile incl. pre-assembled clamps are scre-wed into the wood. A fix- and variable floating point must be designed for the vertical profiles.



3. Natural stone with integrated chan-nels are placed in the clamp until the stone reaches the pre-assembled safety spring secures it.



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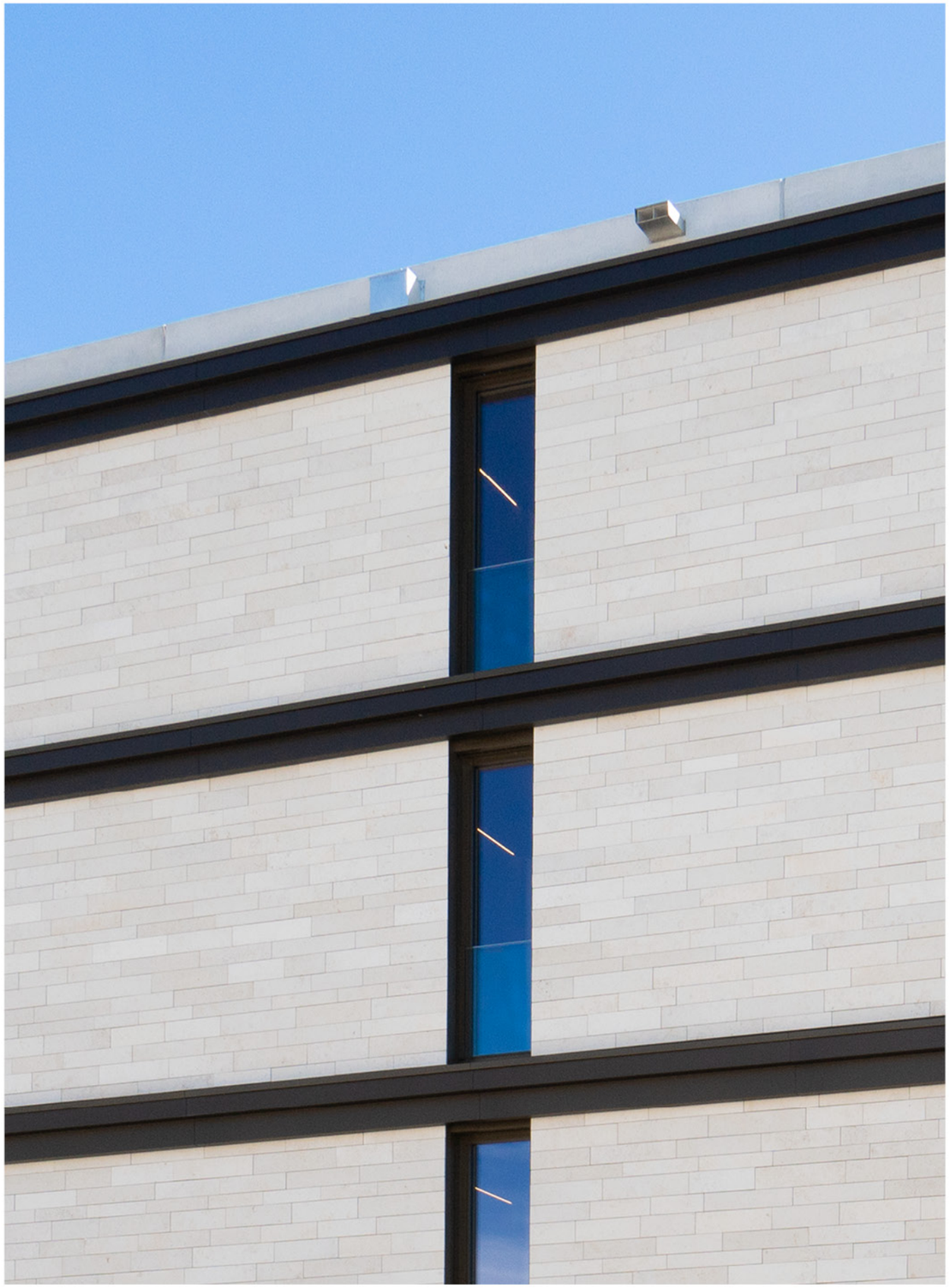

IBB Hotel Eichstätt

Eichstätt, Germany

Dietfurt Limestone beige, sandblasted

Invisible Under-Construction

Specification

All building components of the façade planner regarding the under construction in this specification are marked and pictured in black.

These details are offered as a planning basis….. as well as the plan……The detailed plan with system cutting allotment and execution details are attached for further planning. The dimensions and profile are to be taken out of the description for the calculation basis. Connections are to be produced covered and riveted. Dilatation must be taken into account for the prevention of noise development. The connector/ piles / dilatation detail must be submitted with the offer.

1.1 Planning

The planning documents provided to you serve as a basis for measurement, system model and calculation. The complete façade is to include all reference lines (in x, y and z-axis) including the evaluation of the measurements. The alignment of the façade is done by laser, the tolerances of the unevenness is up to 20mm and needs to be adjusted through the under construction. Construction management must be informed of deviations larger than 20mm.
The allocation, element and position plan as well as a detailed plan for all necessary connecting points must be worked out and provided to the architect in two copies for approval.

Pos. 1.1	Total	1 gl	……

1.2 Statical calculation

The planning documents provided to you were tested statically. Construction, dimensions and profile cross sections must once again be statically tested. Furthermore the various substrates must be explicitly integrated and tested. Extracting tests for the anchors must be conducted and documented on-site on substrates with unknown stability. Proof of testing must be divided according to the structural plan and reported. All statically proofed testing must be provided to the architect twofold.

Pos. 1.2	Total	1 gl	……

1.3 Samples

A 3-piece façade sample is to be constructed according to plan. The exact construction sites will be defined by the architect and construction management. The mock up contains a joint formation in transition, façade conclusion as well as an exterior corner and an interior sample. An insulated construction including cut out for blind holders are to be installed. All construction materials are to be installed with original profiles or replica and cover.
The mock up is to be deconstructed and presented for reference to the builder at the beginning of construction.

The sample is to be used for the indemnification of the details and must be integrated with the appropriate lead time in the execution timeline.

All costs for connections, transitions, cutting, anchor materials, as well as cut outs, waste, tool costs, assembly and disassembly etc. are to be calculated in the unit price.

Pos. 1.3	Total	1 gl	……

2.0 Under construction
See Detail ….

The under construction consists of a primary horizontal level as well as a secondary vertical under construction. This primary construction contains CNS- and GFT Thermico STAR consoles with horizontal load bearing profiles or alternatively with GFT Economica consoles including isolator. Tolerances of up to 20mm can be absorbed by the consoles, the evening out of unevenness must be included in the calculation.

The horizontal support spacing of the consoles are provisionally calculated with….mm and must be statically tested.
A GFT-CNS console thread must be anchored in the front of the ceiling of each story in order to carry the main weight burden. Horizontal GFT Thermico STAR consoles fill the area in between. The distance between the vertical profiles can be tuned in accordance with the statically maximum allowance of the support spacing and can additionally be adjusted to the established U-value.
The underconstruction fulfills a U-value of …..Wm/K. The insulation area is …..mm, the isolation between the horizontal load bearing profiles is to be clamped and additionally fastened mechanically according to the installation guidelines of the manufacturer.
The subsequent vertical construction consists of strand profiles GFT 88 – head profile which are double riveted on the cross point of the horizontally shifted under construction. These make up the clamp lead of the stone fixation.

The dilatation gap and sketch must be calculated with a 3mm shock joint formation and profile. By installation of the vertical profiles there is a correct fix- and variable point according to statical calculation that must be accounted for. In the locating channel of the GFT-88 -, profiles of various GFT gaps and finishing clamps must be riveted and fixed according to the height of the stone panels. The prerequisite for the façade is a complete grid arrangement, or prearrangement of the profiles and clamps in the factory as another execution possibility.

All parties relevant to the installment of the façade must be in accordance. A statical test certificate of the construction must be produced and enclosed. All transitions, endings, cuts, anchor materials as well as cut outs, waste, tool costs, etc. must be calculated into the total costing. All finishes are to be done according to the specifications of the architect:

The stone for the façade is to be supplied by:

Switzerland / Liechtenstein:	Germany / Europe	Austria:
GFT Fassaden AG	Franken-Schotter GmbH & Co. KG	GFT Fassaden AG
Reto Dörig	Ralph Ruf	Thomas Buchsteiner
Schuppisstrasse 7	Hungerbachtal 1	Pichl 100
9016 St. Gallen	91757 Treuchtlingen-Dietfurt	8973 Schladming
T +41 71 282 40 00	T +49 9142 802 264	T +43 6454 666 30 0
F +41 71 282 40 01	F +49 9142 802 267	F +43 6454 666 30 10
rdo@gft-fassaden.swiss	projects@franken-schotter.de	rdo@gft-fassaden.swiss
www.gft-fassaden.swiss	www.franken-schotter.com	www.gft-fassaden.swiss

The under construction consists of the following:
See Detail….

CNS consoles incl. isolator, horizontal or of equal quality, anchor with steel bolts in the ceiling front
GFT Thermico STAR consoles – horizontal, anchor with brick dowel or……
Or GFT Economica consoles - horizontal or of equal quality, anchorage with……
Horizontal load bearing, GFT L-profile…../45-2,3 mm, raw aluminum
GFT shock profile for horizontal profile, raw aluminum (273 174)
Heat insulation, d=….mm, one ply or two ply …..mm
GFT 88 head leading profile, raw aluminum (273 244)
Double riveted in cross point with BWM special rivet SNA 5*12 K 14 (051 215)
GFT 88 gap clamp middle with safety spring (for gap greater than 5mm) (650 880)
GFT gap clamp middle with no safety spring (for gap up to 4mm) (650 881)
GFT 88 upper conclusion clamp always with safety spring (650 882)
GFT 88 lower conclusion clamp always without safety spring (650 883)
GFT 88 safety spring (650 884)
GFT 88 shock profile for GFT 88 load bearing profile (273 244) 4x rivet BWM special rivet SNA 5*12 K 14 (051 215)

Pos. 2.0 Total …. m^2 EP …… ……

3.0 Façade covering with natural stone

Façade- natural stone
See Detail……

The natural stone façade system LINEA comes in various natural stones with different finishes. Natural stones and finishes are available in various combinations. In addition the stone panels are available in different sizes and thicknesses.

The coordination of the installation foundation, under construction, panel dimensions and static requires a detailed, exact planning of the façade. Panel heights are available between 120 up to 200mm, standard heights are 121 / 152 / 183mm, see detail. Panel lengths are between 450 and 900mm in random lengths or in exact lengths. Panel thickness is approximately 30mm. Panel thickness' can also be produced in 40mm in order to achieve design variations. Static proof must be provided. Exterior as well as interior corners can be cut on a miter and specifically ordered.
The LINEA system calls for angled slots in the back of the natural stone panels, these allow for quick and easy installation of stone panels without the use of concrete. Safety clamps inhibit the movement of the stone panels from side to side. Damaged stones may be individually replaced depending on the gap size.

All visible clamps and anchors in open gap areas will be colored according to the wishes of the architect. All installation works are to be coordinated with transitions and conclusions. All transitions, endings, cuts, anchor materials as well as cut outs, waste, tool costs, etc. must be calculated into the total costing.

See Detail……

The stone for the façade is to be supplied by:

Switzerland / Liechtenstein:	Germany / Europe	Austria:
GFT Fassaden AG	Franken-Schotter GmbH & Co. KG	GFT Fassaden AG
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F +41 71 282 40 01	F +49 9142 802 267	F +43 6454 666 30 10
rdo@gft-fassaden.swiss	projects@franken-schotter.de	rdo@gft-fassaden.swiss
www.gft-fassaden.swiss	www.franken-schotter.com	www.gft-fassaden.swiss

System: LINEA
Material: Dietfurt Limestone gala® beige / Dietfurt Limestone gala® grau / Dietfurt Dolomite® / Dietfurt Travertine
Finishes: sandblasted / honed / brushed / bushhammered / further finishes available upon request
Edges: sawn
Works: Backside angled slots, for concealed installation
Anchoring: clamp system LINEA, concealed
UV-protection: all panels are 100% lightfast und UV-resistant
BKZ: 6.3 non-flammable
Panel lengths: Random lengths 450 mm bis 900 mm
Panel thickness: …….
Panel heights: 121 / 152 / 183 mm

Pos. 3.0 …. ….. m^2 EP …… ……

Sparkasse

Tiengen, Deutschland

Dietfurter Kalkstein beige, sandgestrahlt

3.1.1 Additional / less cost to Pos. 3.0. according to finish type...

FACADE – Natural stone

Described in Pos. 3.0 with finish

Material: …
Finish: …

Pos. 3.1.1 .... m^2 EP …… per

3.1.2 Additional cost to Pos. 3.0. for mitred cuts

FACADE – Natural Stone

Described in Pos. 3.0 with mitred cut for corner construction

Beveled mitred cut

Additonal cost for mitred cut sawn 45°

Pos. 3.1.2 …. m EP …… per

3.1.3 Additional cost to Pos. 3.0. for shorter or longer panels

FACADE – Natural Stone

Described in Pos. 3.0 although executed in

Shorter or longer panels

Additional cost
shorter <450 mm and random longer >900 mm

Pos. 3.1.3 …. m^2 EP …… per

3.1.4 Additional cost for Pos. 3.0. for defined lengths

FACADE – Natural Stone

Described in Pos. 3.0 although executed in

Defined lengths

Additional costs
Individual lengths defined

Pos. 3.1.4 …. m^2 EP …… per

Multifaceted execution possibilities

Calculation basis for natural stone façade (for requests and orders)

Entity _____

City _____

Installer _____ Tel _____

Developer _____ Tel _____

Architect _____ Tel _____

Building type ☐ New ☐ Restoration ☐ Extension

Statistical value of dynamic pressure ☐ 0,9 KN/m2 ☐ 1,1 KN/m2 ☐ 1,3 KN/m2 ☐ .....

Building dimensions Height _____ m Breite : _____ m Länge _____ m

Facade elevation _____ m2 Facade structure to front edge _____ mm

No. of stories _____ Stk. Insulation thickness _____ mm

Story height _____ mm Ventilation area _____ mm

U-Value _____ W/m²K

Anchorage ☐ Concrete ☐ Lime- sandstone ☐ Wood

☐ Brick ☐ Steel ☐ _____

Type of anchorage _____ Permissible inclined load _____ KN

Have sample attempts been conducted and results attached? ☐ Yes ☐ No

Material _____ Thickness _____ mm

Finish _____ ☐ Callibrated ☐ Uncallibrated

Panel dimensions ☐ According to attached sketch

☐ Small format panels Height: 100mm - 200mm

☐ Medium format panels Height: 200mm - 600mm

☐ Large format panels Height: 600mm -

Sketch (DWG/DXF/PDF) ☐ Elevation ☐ Layout ☐ Vertical cross section

Dates Offer _____ Plan _____ Installation _____

Remarks _____

Date _____ Signature _____

LINEA
cladding systems

Distribution partners

Worldwide

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ABC STONE

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Natural stone façades are our passion – besides consulting and planning, we are specialized in the state-of-the-art production of inspiring and innovative cladding solutions in connection with our proprietary sub-constructions. We realize your ideas professionally and implement entire solutions with the highest esthetic, technical, safety and sustainability standards.

For more information please visit us at

www.linea-cladding.com