

Im Minimum wird das Wesentliche, das im Überfluss unterging, wieder sichtbar  
. Wolfgang Pehnt . Sanaa . Spiel der Gegensätze



Flüchtlingslager . Dabaad . Kenia  
20 jähriges Bestehen



### Flüchtlingssituation . weltweit

ca. 45.2 Mio. Menschen

. Afghanistan 2.6 Mio.

. Irak 1.1 Mio.

. Somalia 750.000

. Syrien 850.000

. Sudan 580.000





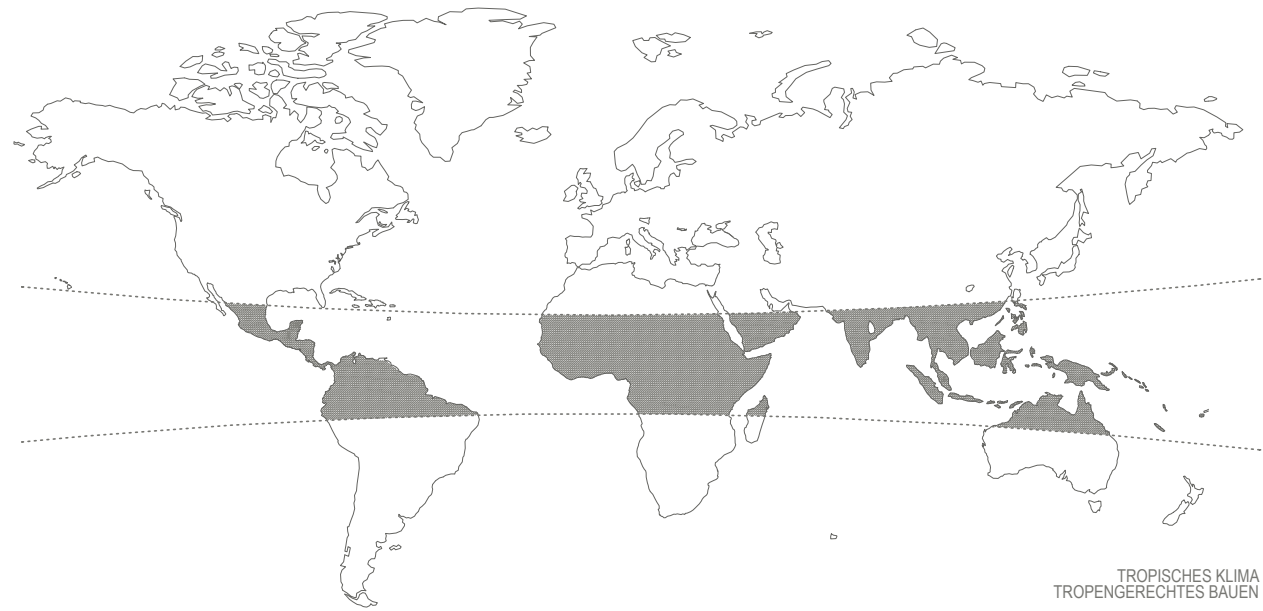




ERDBEBENGEFÄHRDETE WELTREGIONEN  
ERDBEBENGERECHTES BAUEN



WELTWEITE NATIONALE KONFLIKTE 2012  
QUELLE . HIIK HEIDELBERG INSTITUTE FOR INTERNATIONAL CONFLICT RESEARCH

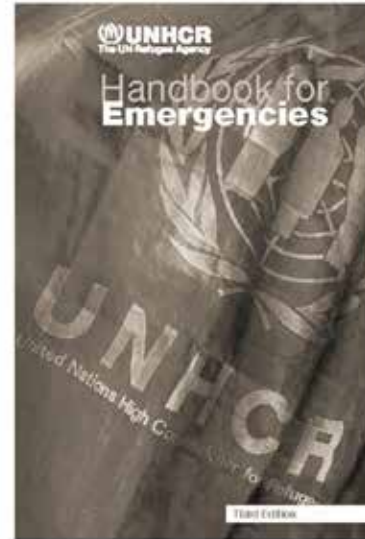


TROPISCHES KLIMA  
TROPENGERECHTES BAUEN



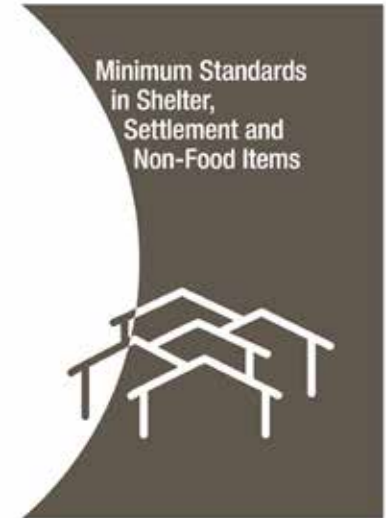






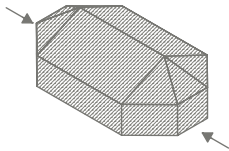
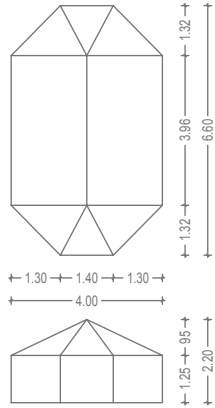
.SKKM INSTITUT FÜR STRUKTUREN UND KONSTRUKTIONSTECHNIKEN

RICHTLINIE  
FÜR DAS  
FÜHREN IM  
KATASTROPHENEINSATZ



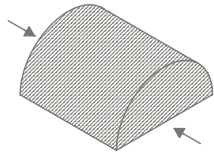
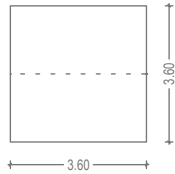
NOTUNTERKUNFT  
FRAME

16 M² FAMILIENZELT



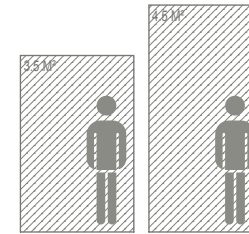
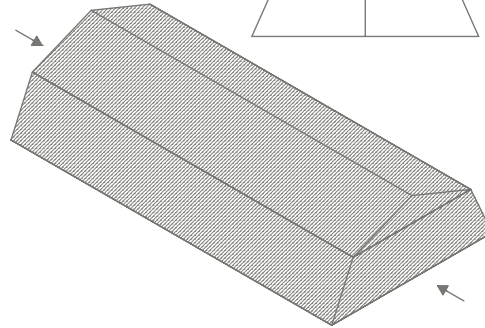
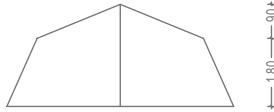
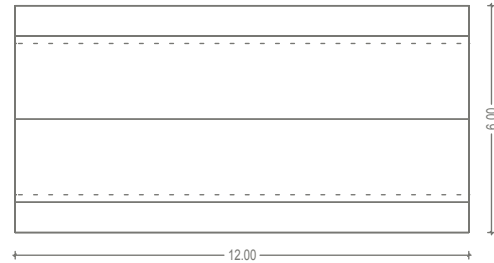
SHELTER  
TUNNEL

12 M² 3 PERS. ZELT



SHELTER  
WAREHOUSE

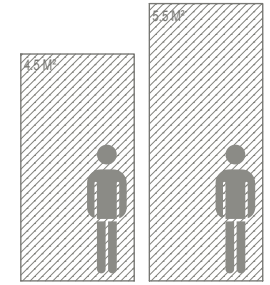
72 M² ZELT



FLÄCHENBEDARF / PERSON  
WITTERUNGSGESCHÜTZTER BEREICH  
(SPHERE PROJECT)



FLÄCHENBEDARF / PERSON  
WITTERUNGSGESCHÜTZTER BEREICH  
WARMER REGIONEN  
(UNHCR PROJECT)



FLÄCHENBEDARF / PERSON  
WITTERUNGSGESCHÜTZTER BEREICH  
KALTE / STÄDTISCHE REGIONEN  
(UNHCR PROJECT)

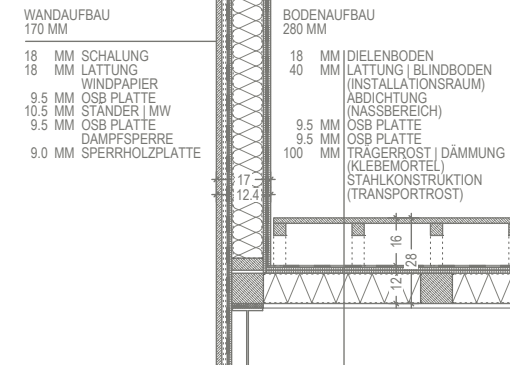
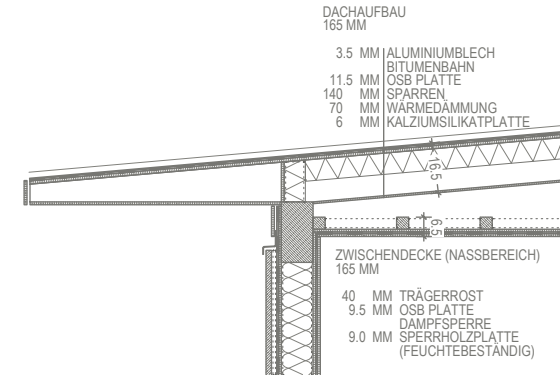
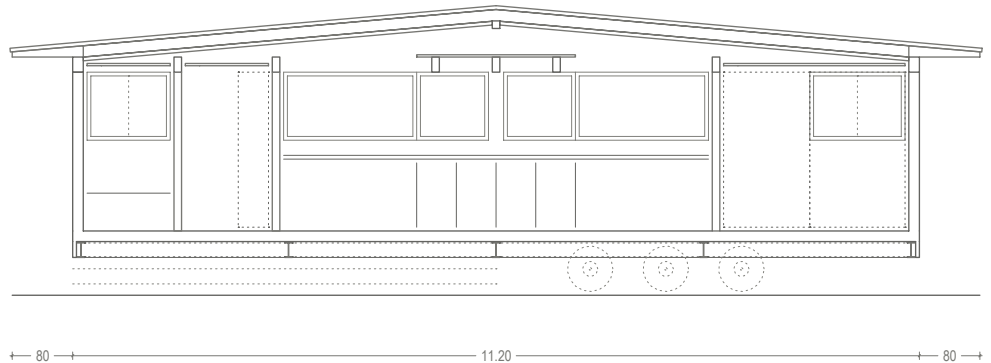
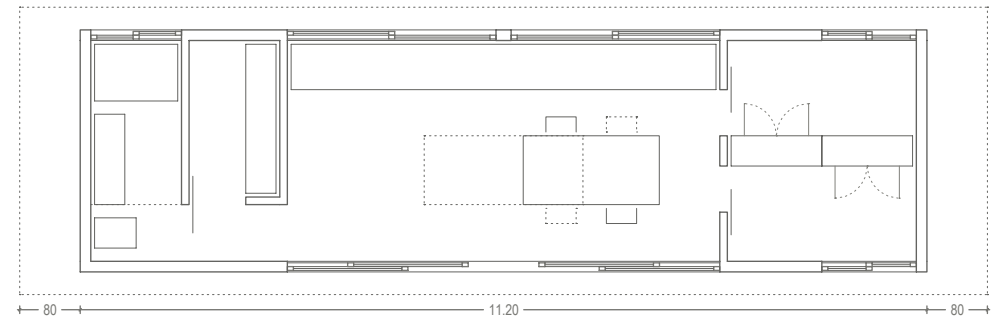


VERFÜGBARE CAMPFLÄCHE  
45 M²

mobile smile . notunterkunft

. Mischkonstruktion

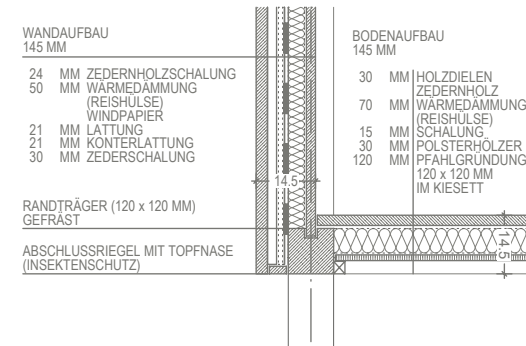
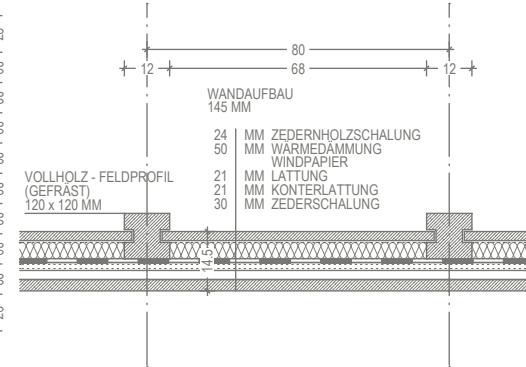
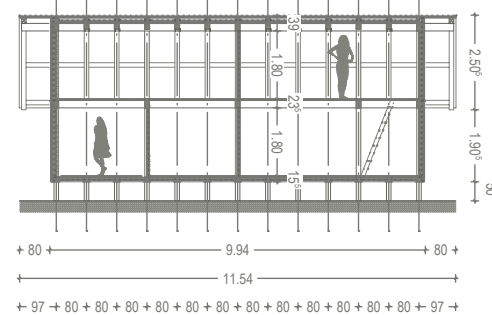
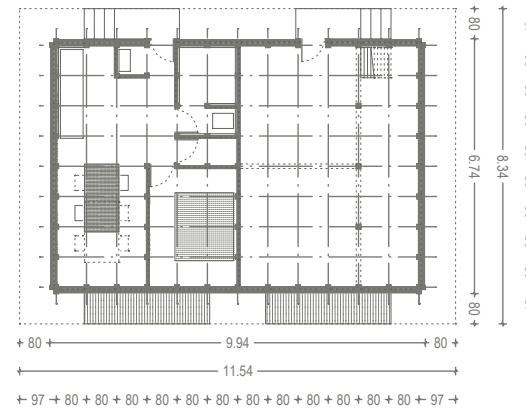
. flexible Nutzung



itakhura house . kunihiro ando

. traditionelle Bauweise

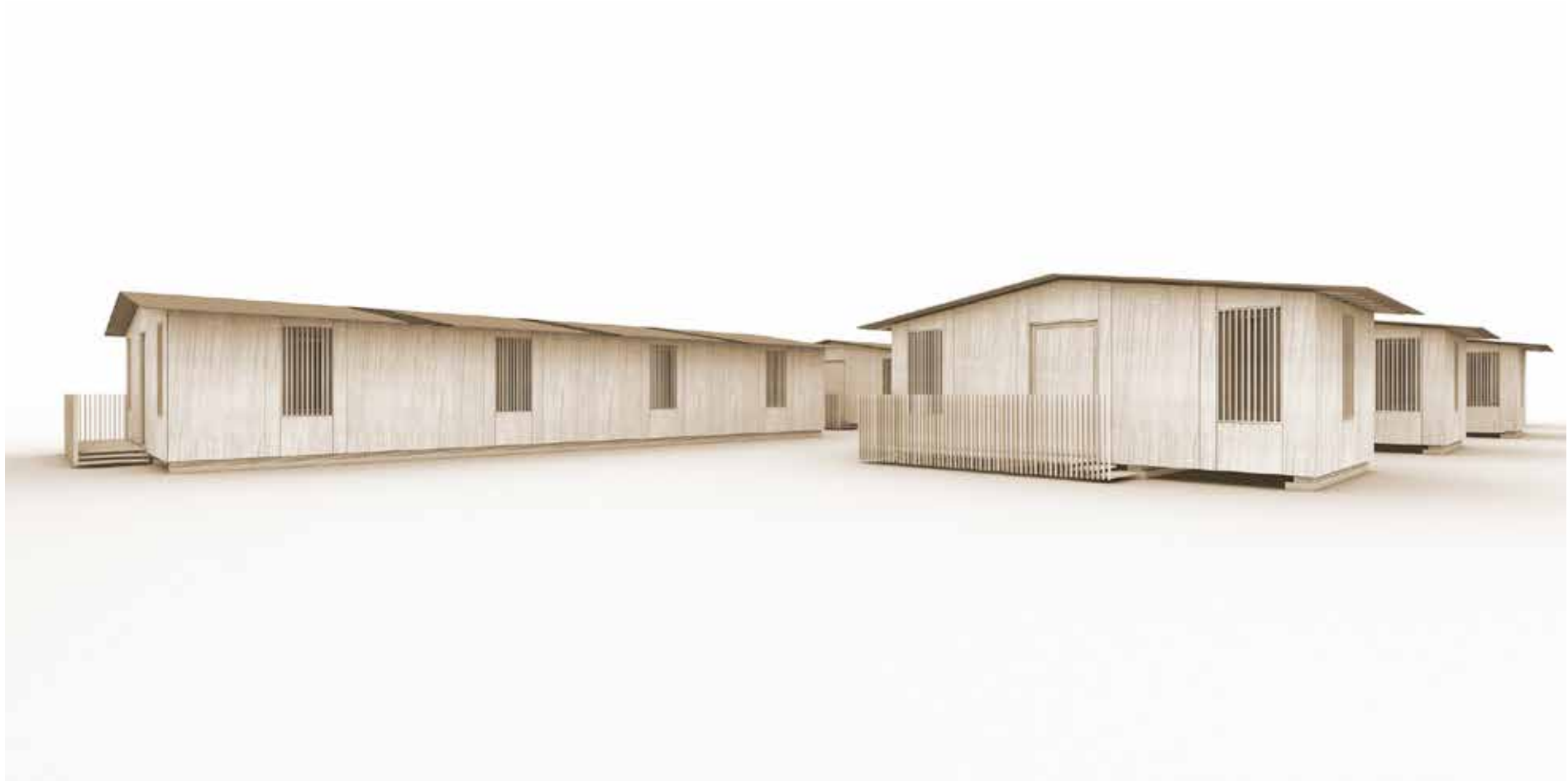
. lokale Ressourcenverwendung



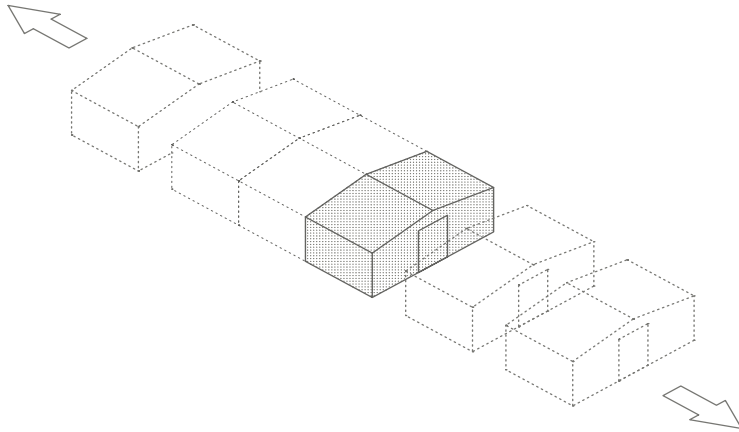
entwurf . soforthilfe

. Massivholzbauweise

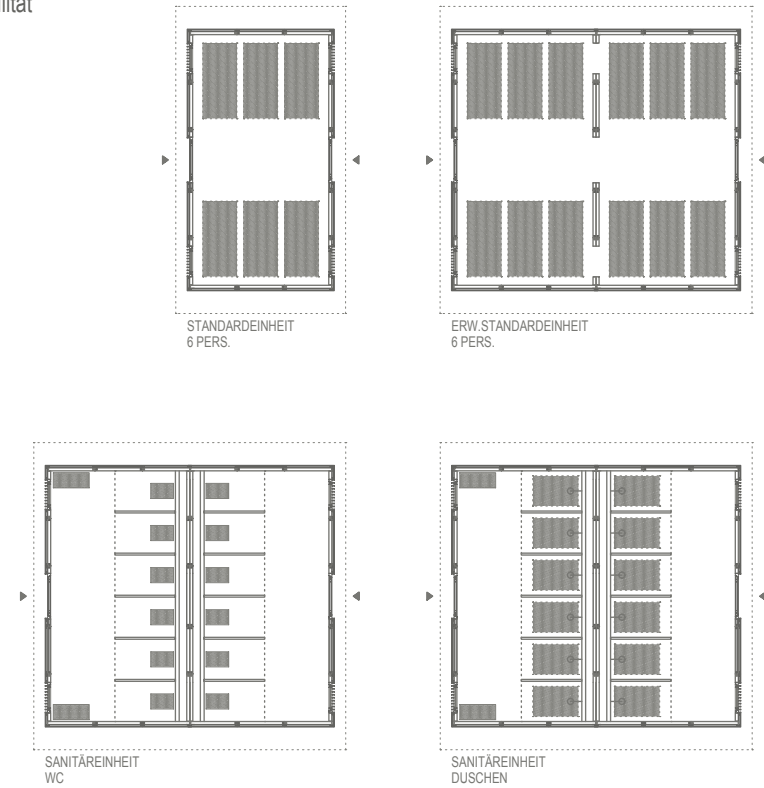
. Brettsperrholz



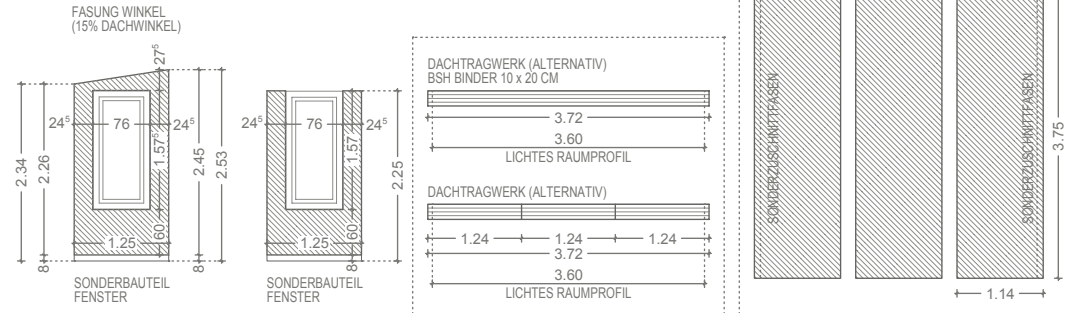
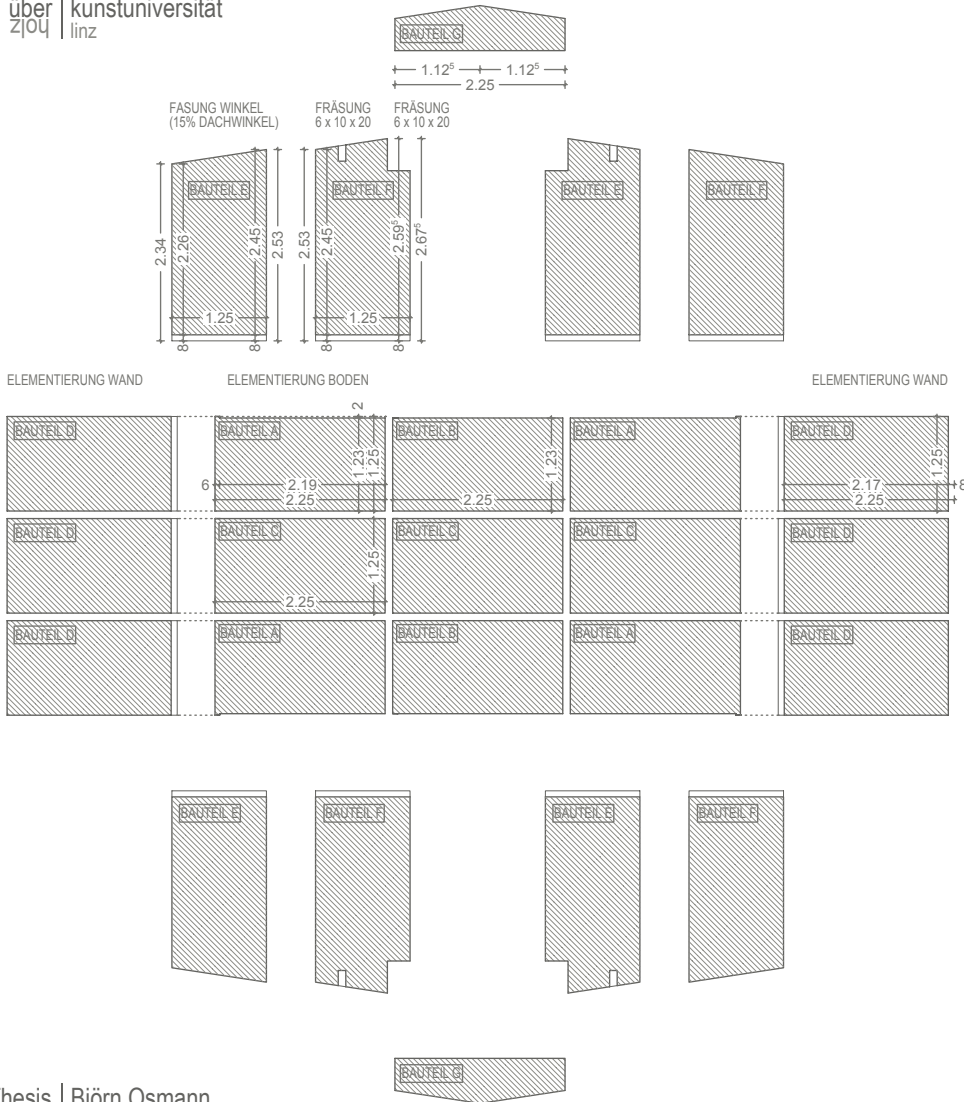
### Nutzungserweiterung



### Nutzungsflexibilität



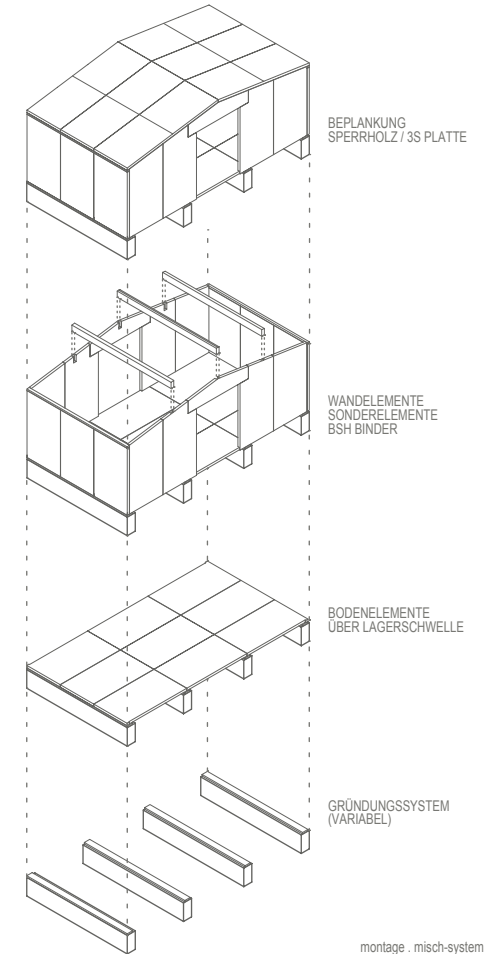
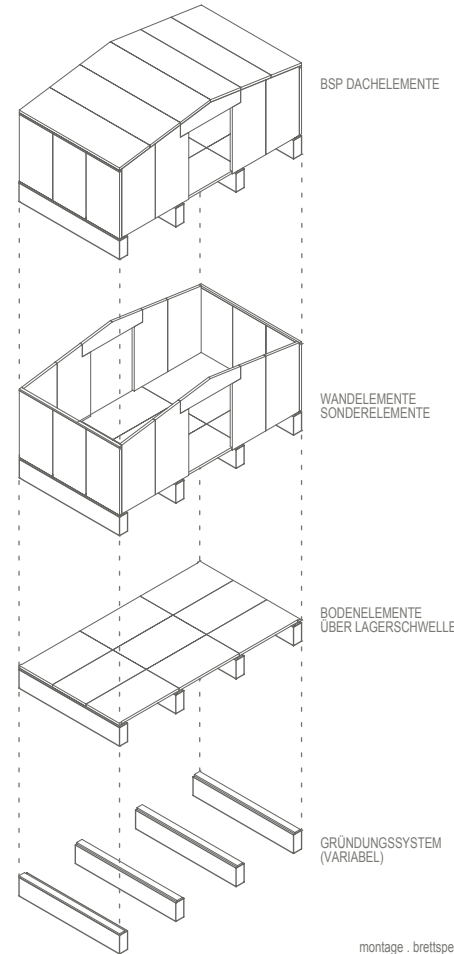




montageablauf . bsp

. Mischkonstruktion

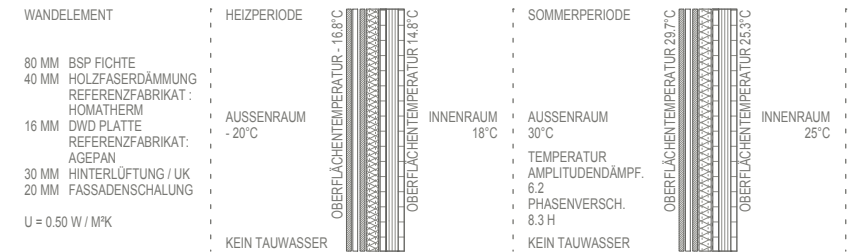
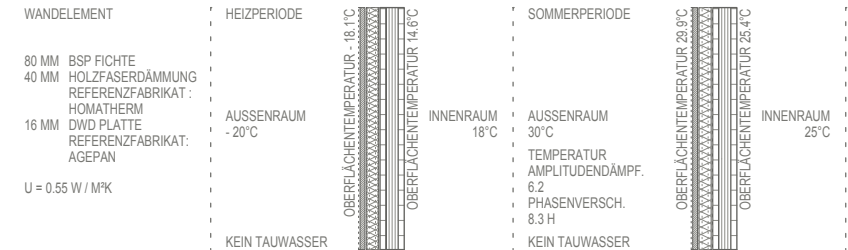
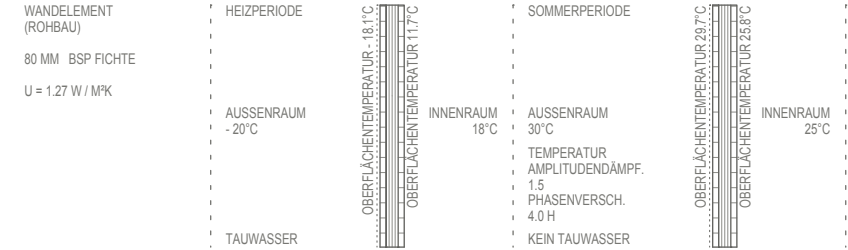
. Brettsperrholz

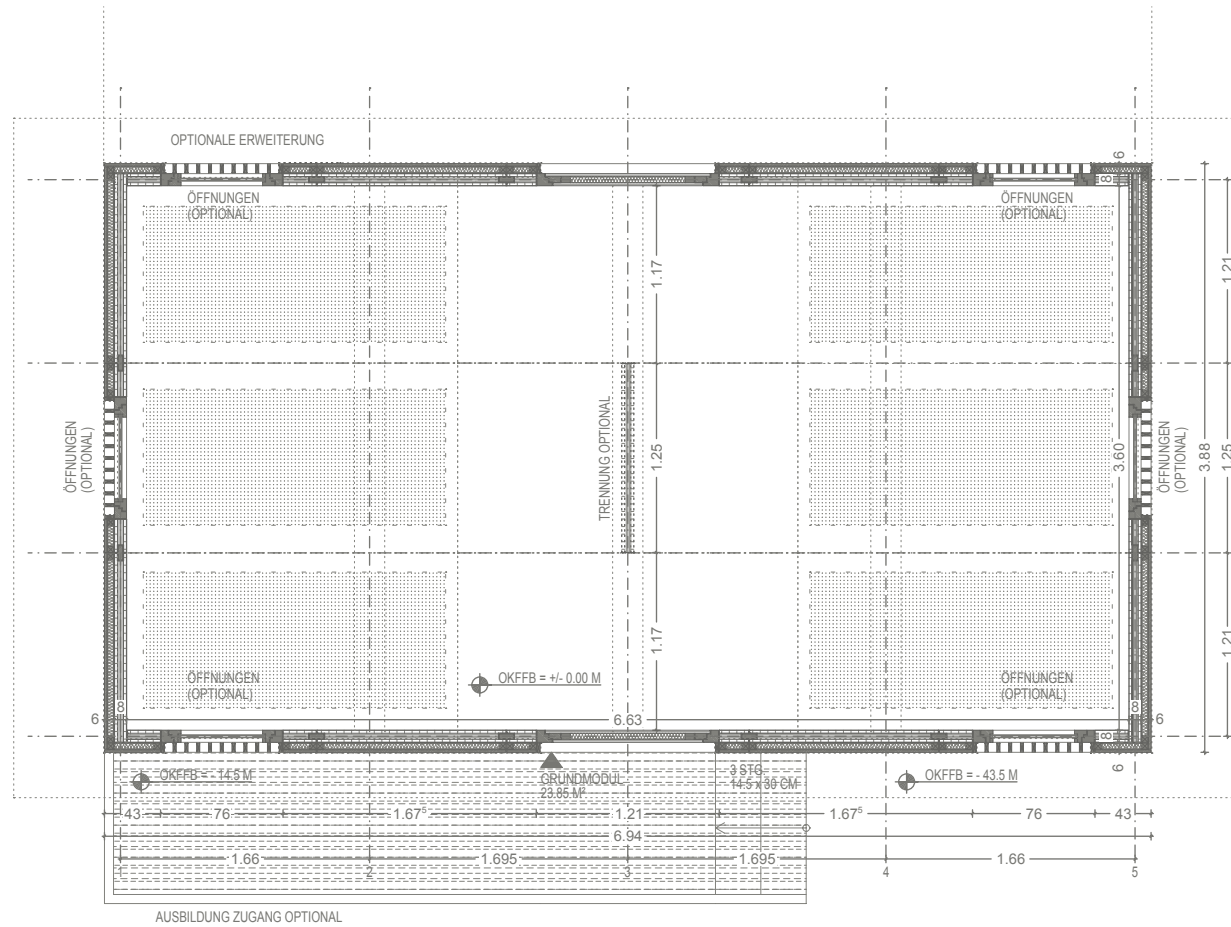


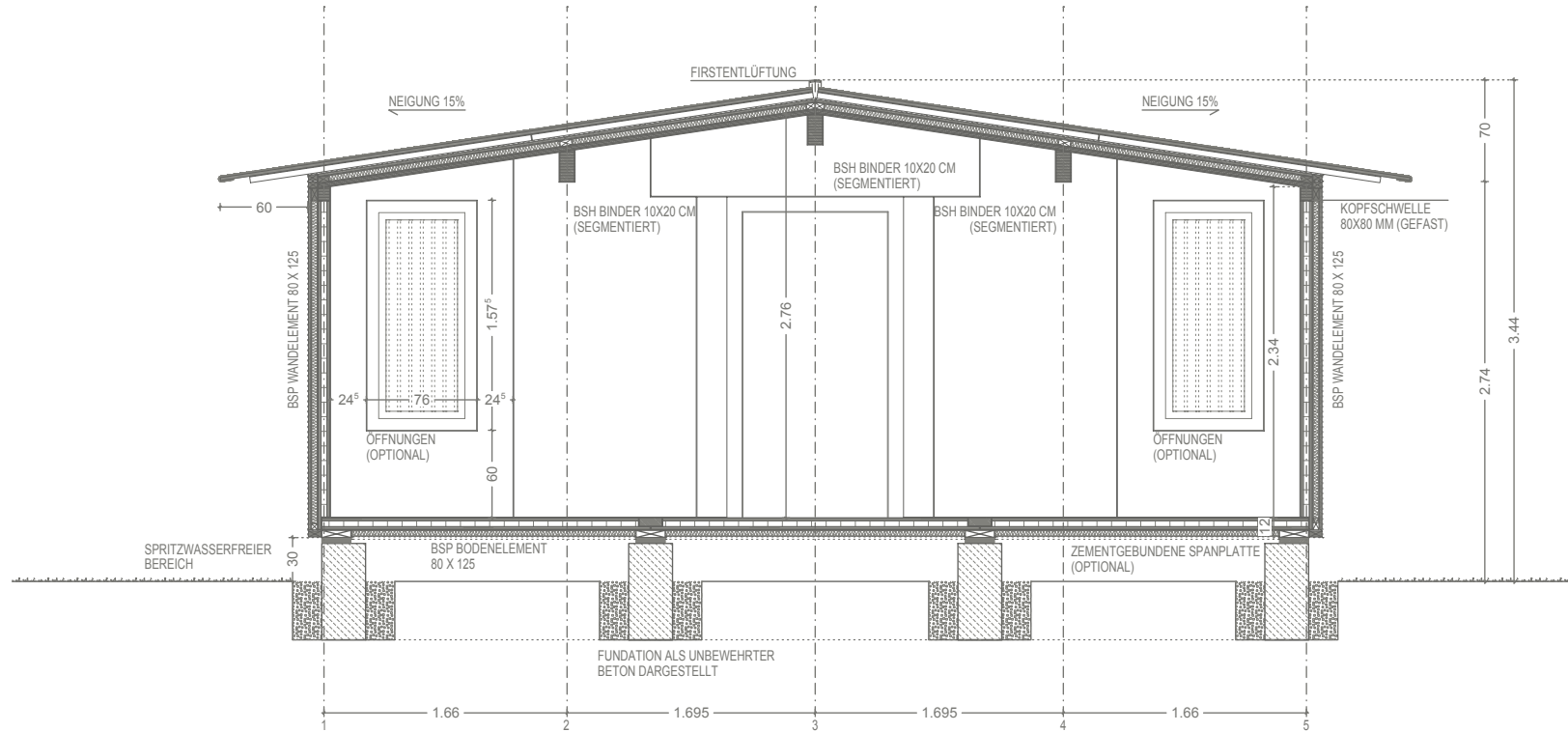
bauteileigenschaften . bsp

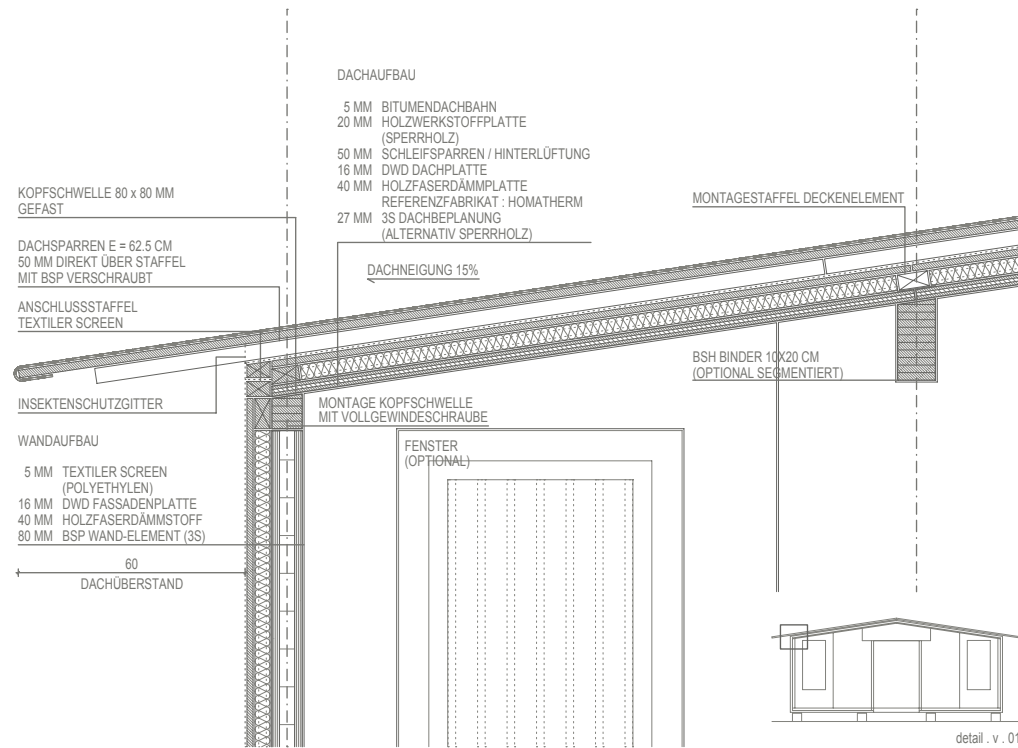
- . Wärmeschutz
- . Witterungsschutz
- . Sicherheitsaspekt

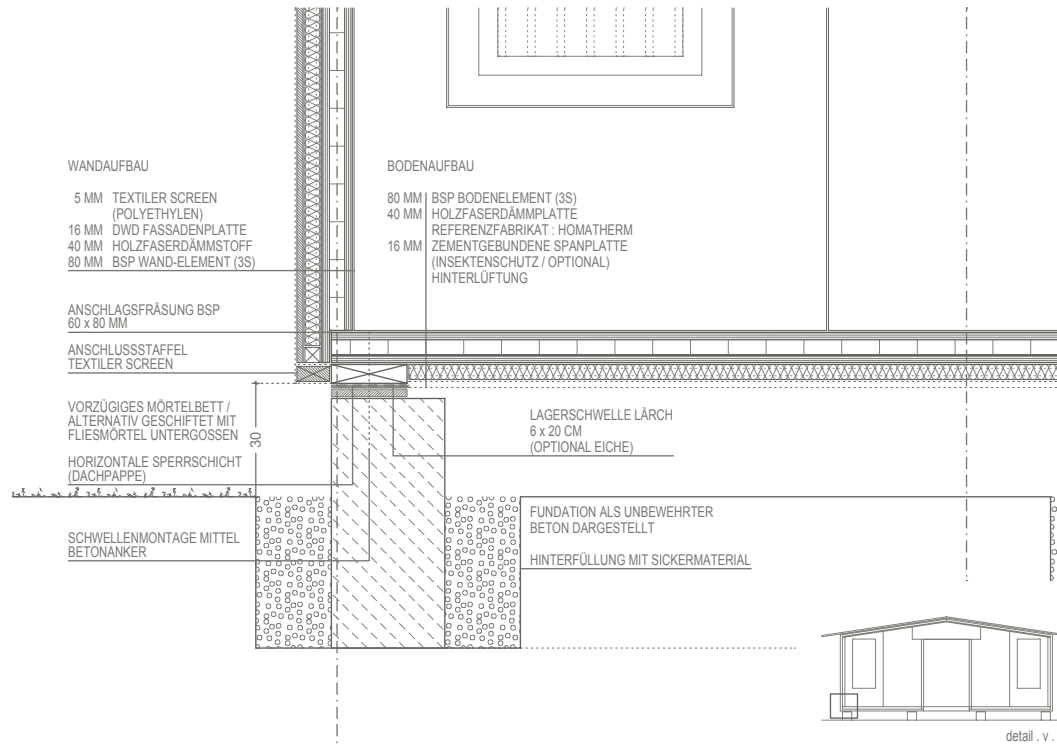
B A U P H Y S I K . BAUTEILKATALOG WAND

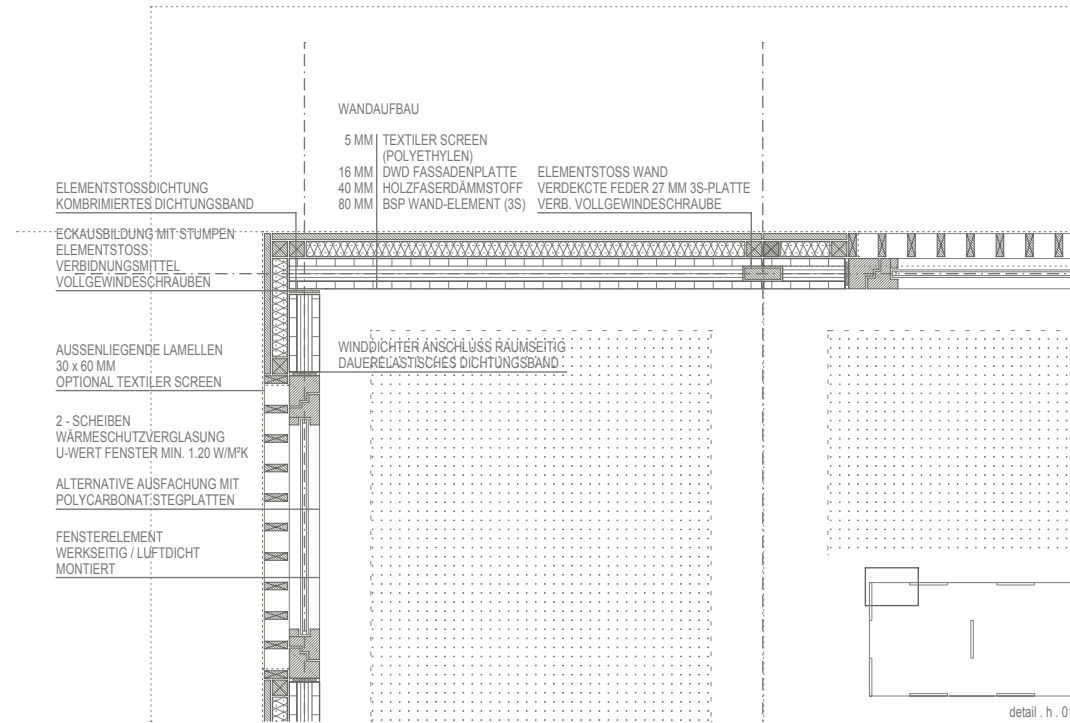








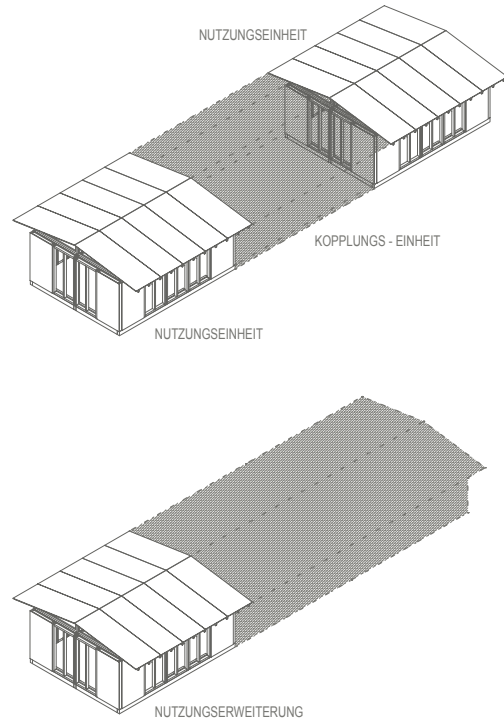




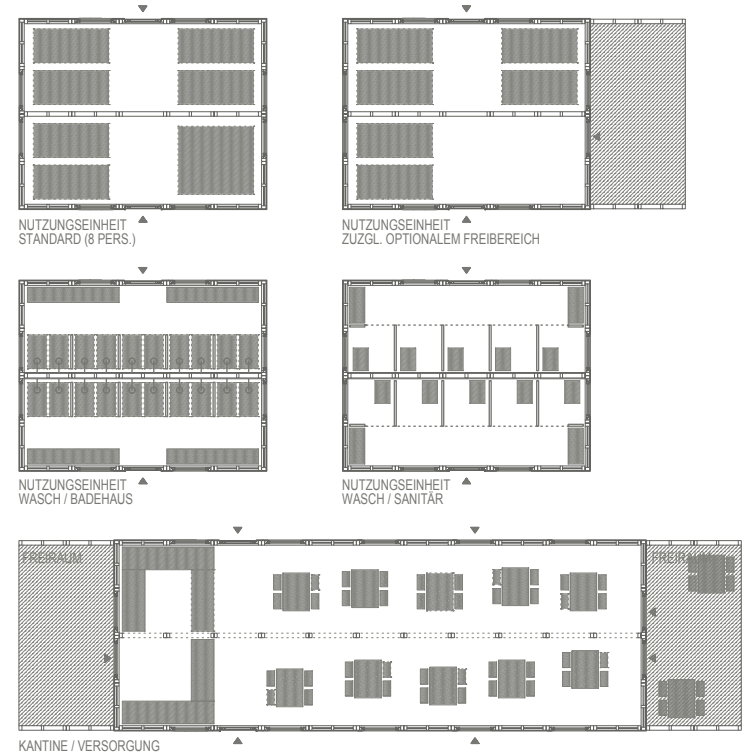








Erweiterung



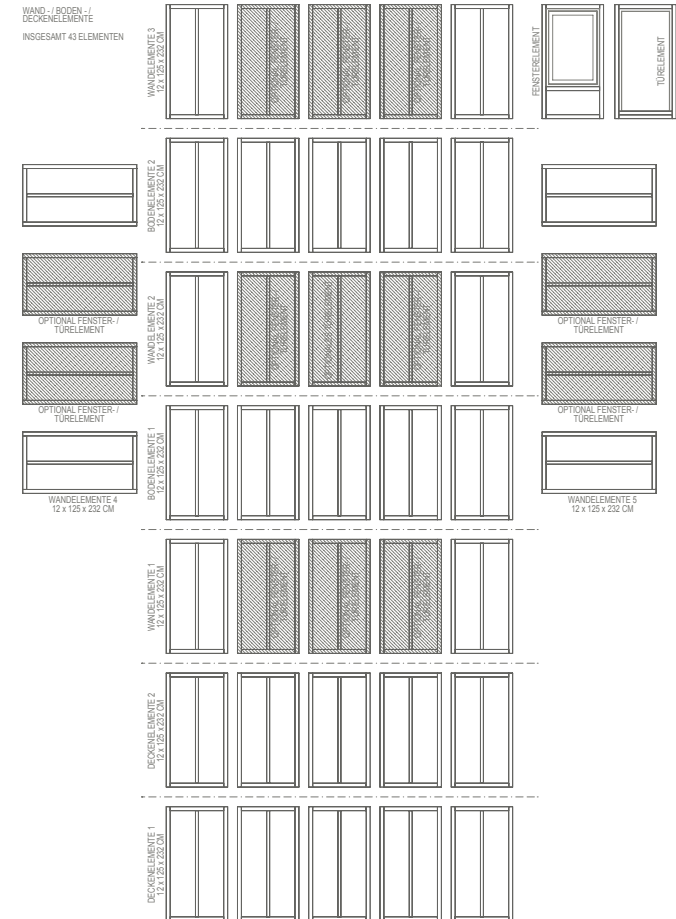
Nutzungsflexibilität

elementierung . rahmenbau

. optimierte Anzahl (43 Stück)

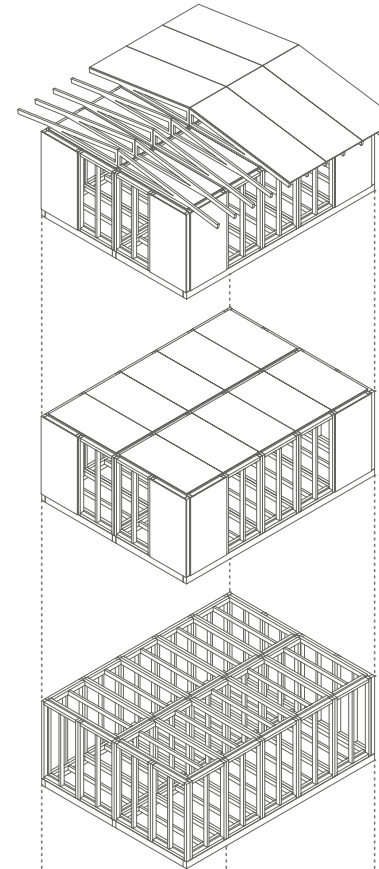
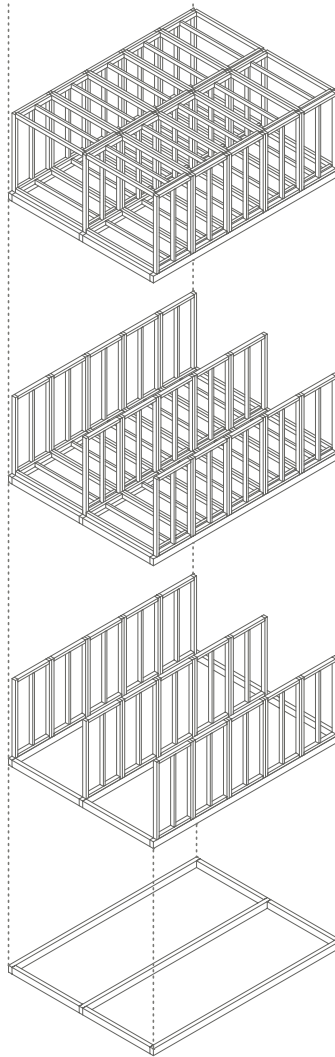
. Transportmittel-Abstimmung

. handelsübliche Stellformate 1.25 M x 2.32 M



montageablauf . standardeinheit

- . optionales Gründungssystem
- . Aufstellung der Rahmenelemente
- . aussteifende Beplankung Wand / Dach



- bauteileigenschaften . tech. Ausbau
- . flexible Erweiterung der Aufbauschichten
- . Ausbaustand dem Ort entsprechend
- . evtl. erforderlicher technischer Ausbau (Winterperiode / Luftwechsel)

B A U P H Y S I K . BAUTEILKATALOG WAND

|                            |                  |                |   |
|----------------------------|------------------|----------------|---|
| WANDELEMENT (ROHBAU)       | HEIZPERIODE      |                |   |
| 18 MM SPERRHOLZPLATTE      |                  |                |   |
| $U = 3.24 \text{ W / MPK}$ | AUSSENRAUM -20°C | INNENRAUM 18°C | AUSSENRAUM 30°C                                     |
|                            |                  |                | TEMPERATUR AMPLITUDENDÄMPF. 1.0 PHASENVERSCH. 0.2 H |
|                            | TAUWASSER        |                | KEIN TAUWASSER                                      |



|  |                   |                |   |
|--|-------------------|----------------|---|
|  | SOMMERPERIODE     |                |   |
|  |                   |                |   |
|  | AUSSENRAUM 29.4°C | INNENRAUM 25°C | AUSSENRAUM 30°C                                     |
|  |                   |                | TEMPERATUR AMPLITUDENDÄMPF. 1.0 PHASENVERSCH. 0.2 H |
|  | TAUWASSER         |                | KEIN TAUWASSER                                      |



|   |                  |                |   |
|---|------------------|----------------|---|
| WANDELEMENT   | HEIZPERIODE      |                |   |
| 18 MM SPERRHOLZPLATTE<br>40 MM HOLZFASERDÄMMUNG<br>REFERENZFABRIKAT : HOMATHERM |                  |                |   |
| $U = 0.85 \text{ W / MPK}$  | AUSSENRAUM -20°C | INNENRAUM 18°C | AUSSENRAUM 30°C                                     |
|   |                  |                | TEMPERATUR AMPLITUDENDÄMPF. 1.1 PHASENVERSCH. 2.5 H |
|   | TAUWASSER        |                | KEIN TAUWASSER                                      |



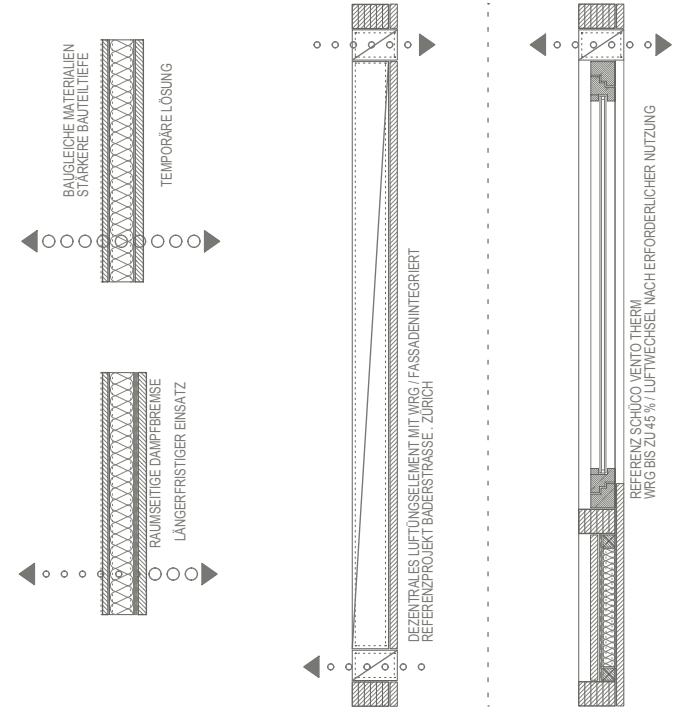
|  |                   |                |   |
|--|-------------------|----------------|---|
|  | SOMMERPERIODE     |                |   |
|  |                   |                |   |
|  | AUSSENRAUM 29.8°C | INNENRAUM 25°C | AUSSENRAUM 30°C                                     |
|  |                   |                | TEMPERATUR AMPLITUDENDÄMPF. 1.1 PHASENVERSCH. 2.5 H |
|  | TAUWASSER         |                | KEIN TAUWASSER                                      |

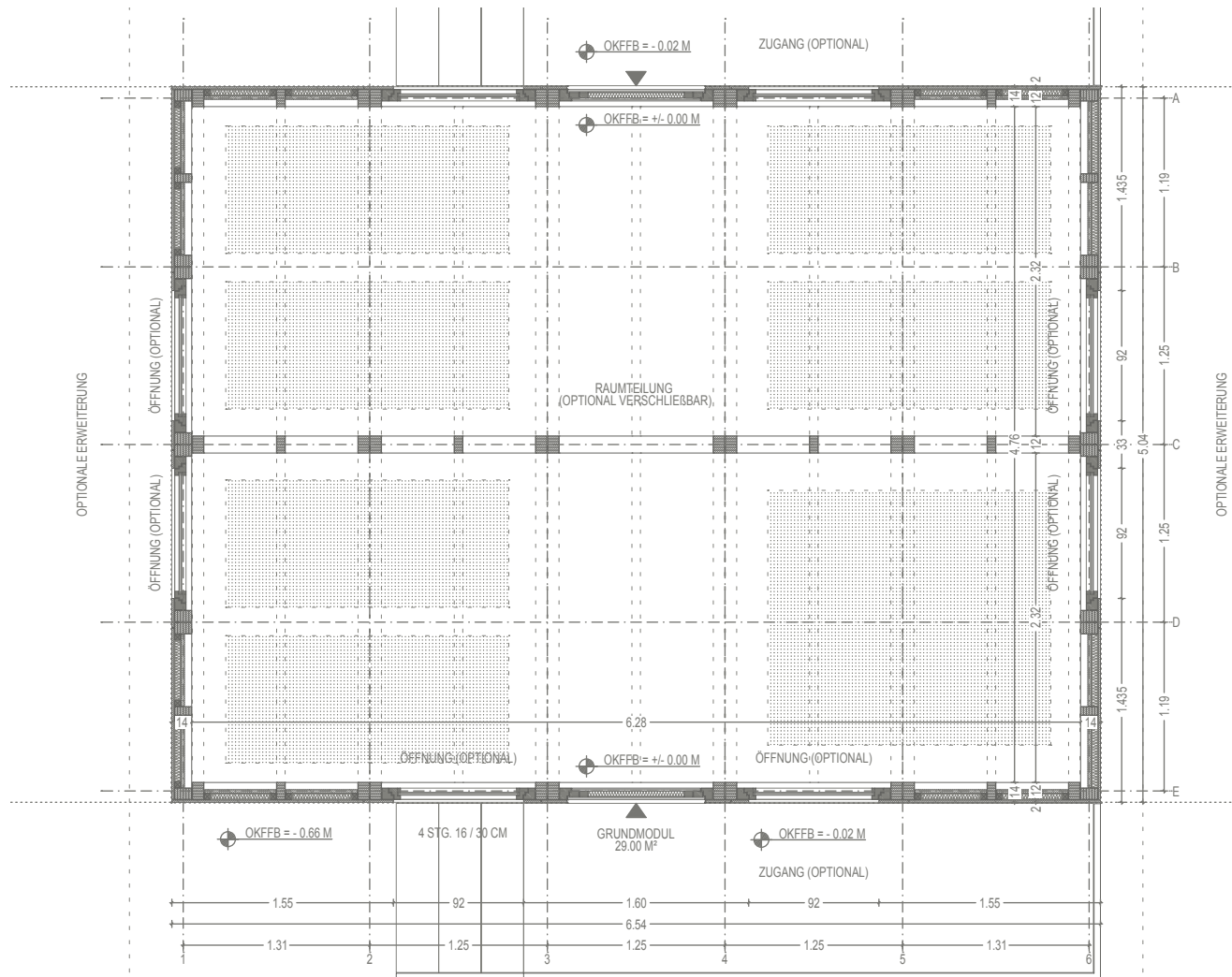


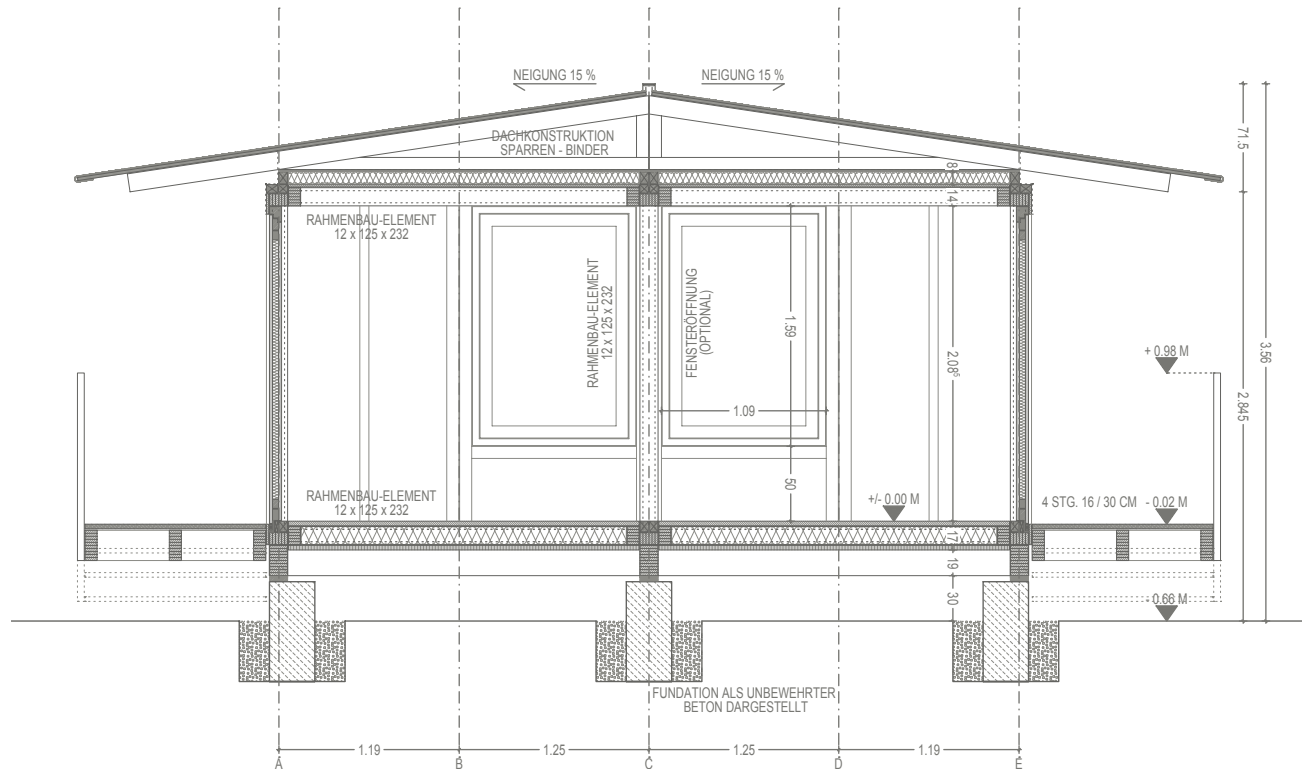
|  |                  |                |   |
|--|------------------|----------------|---|
| WANDELEMENT  | HEIZPERIODE      |                |   |
| 18 MM SPERRHOLZ<br>40 MM HOLZFASERDÄMMUNG<br>REFERENZFABRIKAT : HOMATHERM<br>27 MM SPERRHOLZ |                  |                |   |
| $U = 0.72 \text{ W / MPK}$   | AUSSENRAUM -20°C | INNENRAUM 18°C | AUSSENRAUM 30°C                                     |
|  |                  |                | TEMPERATUR AMPLITUDENDÄMPF. 2.2 PHASENVERSCH. 5.3 H |
|  | TAUWASSER        |                | KEIN TAUWASSER                                      |



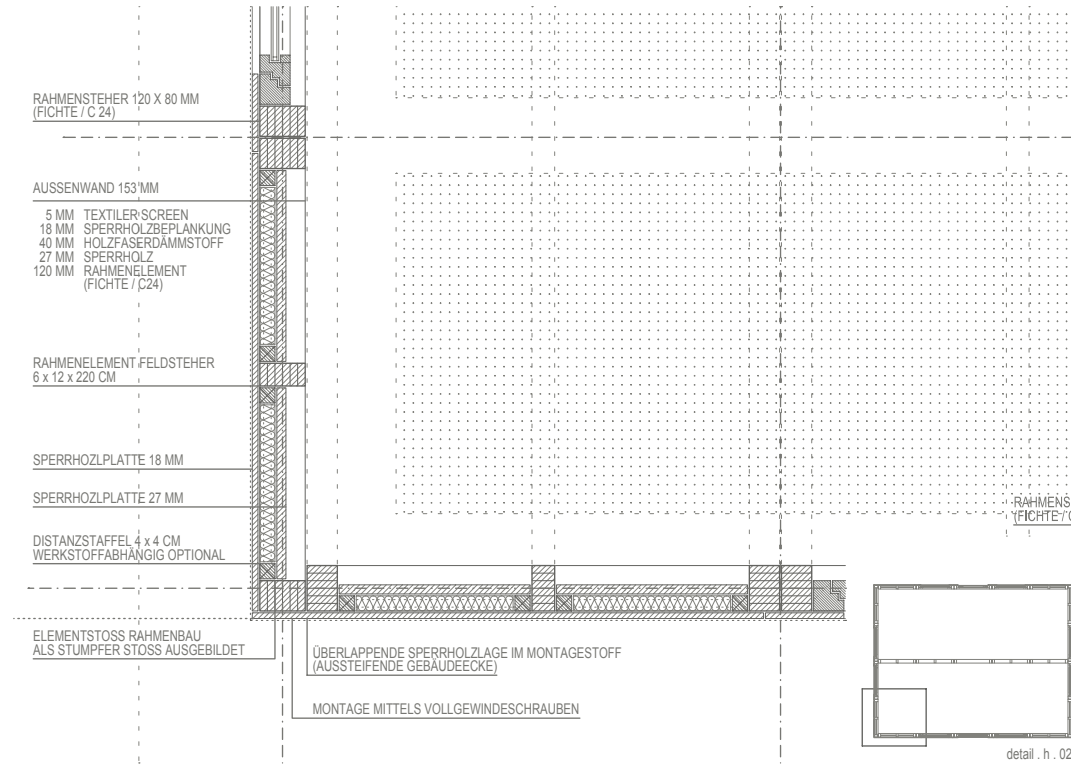
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|--|-------------------|----------------|---|
|  | SOMMERPERIODE     |                |   |
|  |                   |                |   |
|  | AUSSENRAUM 29.9°C | INNENRAUM 25°C | AUSSENRAUM 30°C                                     |
|  |                   |                | TEMPERATUR AMPLITUDENDÄMPF. 2.2 PHASENVERSCH. 5.3 H |
|  | TAUWASSER         |                | KEIN TAUWASSER                                      |

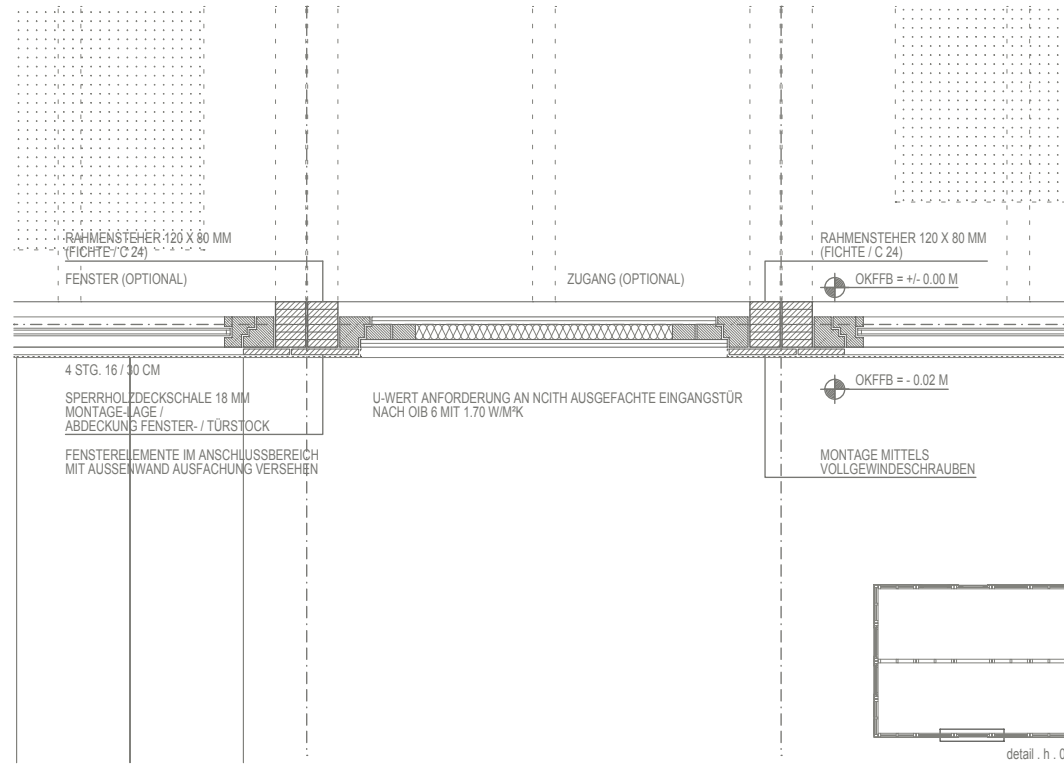


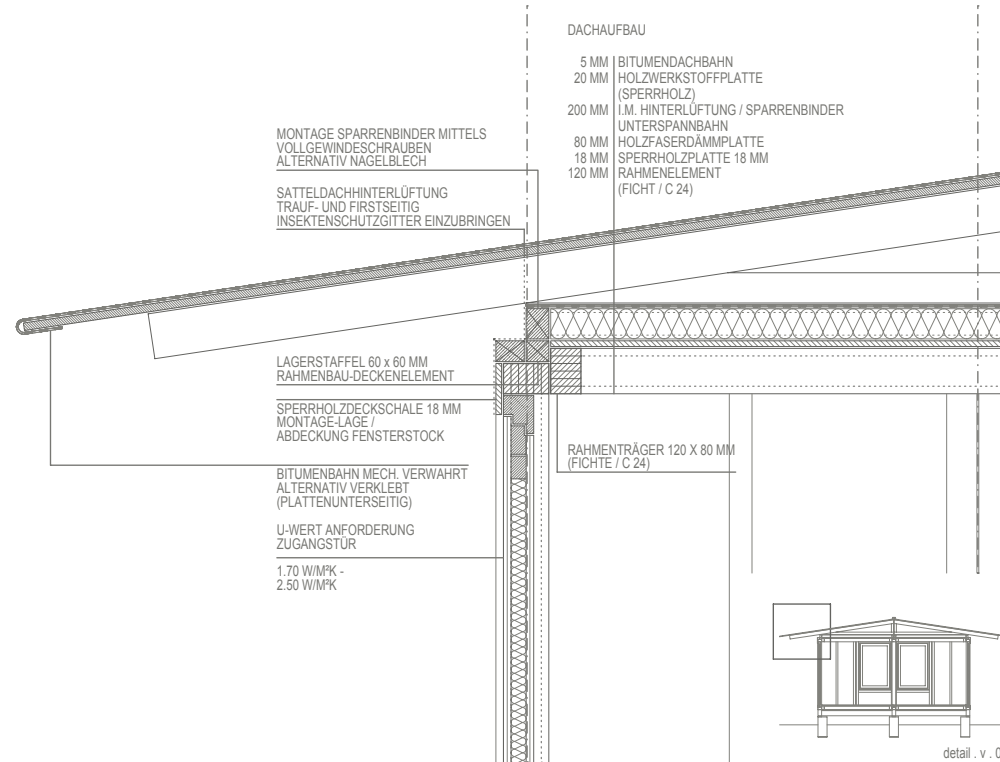


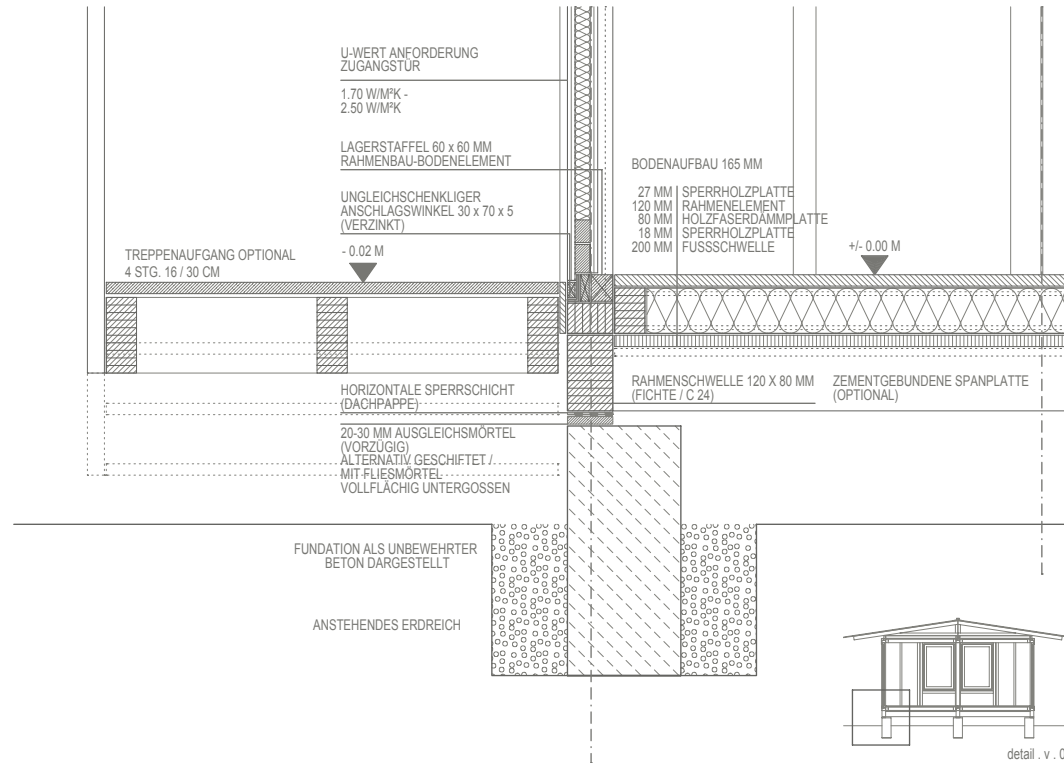








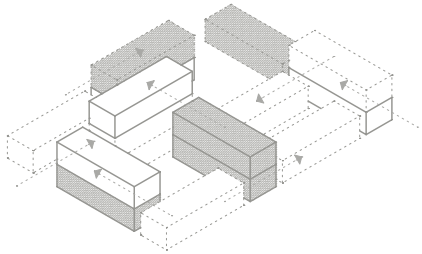




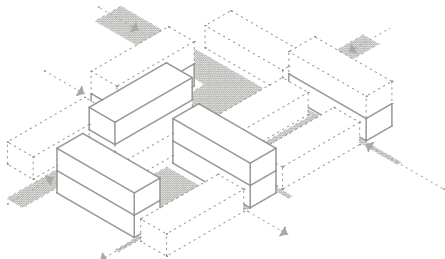




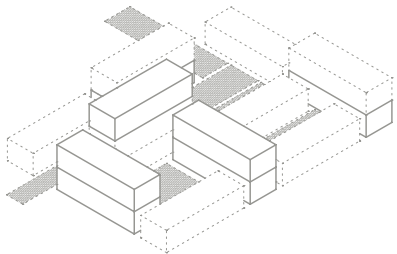
KONZEPT KUBATUR . RAUM GRUPPE



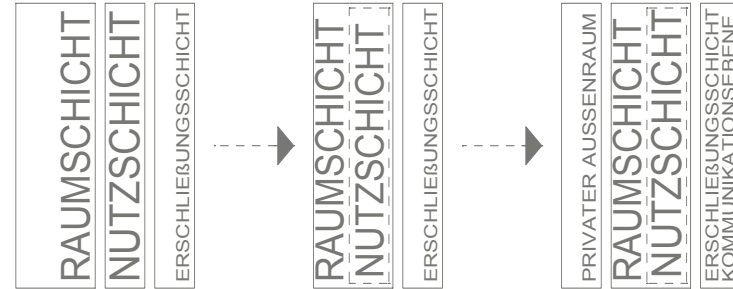
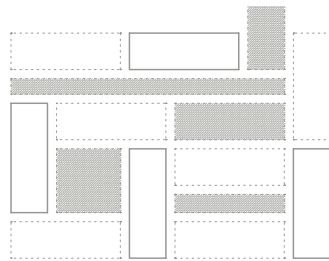
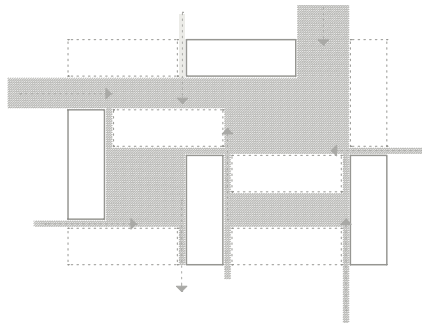
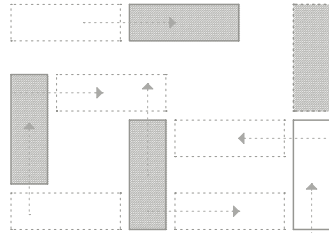
BAUGRUPPE  
NACHBARSCHAFTSBEZIEHUNG



ZUWEGUNG  
DURCHWEGUNG

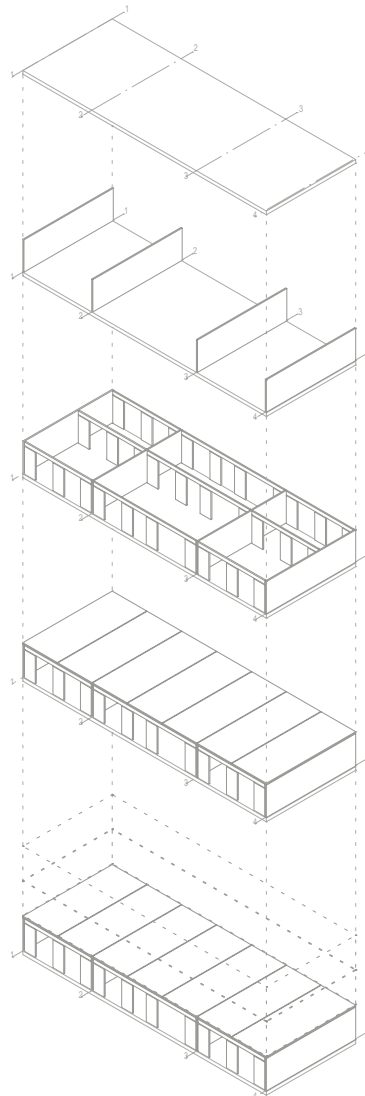


FREIRAUM  
KOMMUNIKATIONSFLÄCHEN



montageablauf . standardeinheit

- . Flachgründung
- . Reduzierung auf wenige Elementzuschnitte
- . optionale Erweiterbarkeit



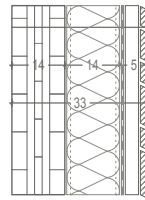


fassadenvarianten . ausbaustudie

. Abhängigkeit vom Ort

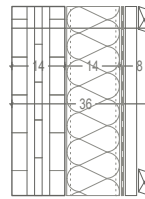
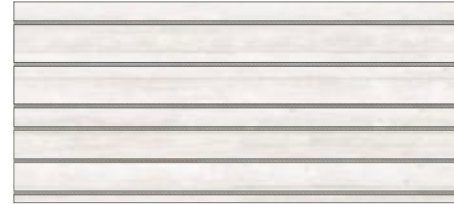
. Verfügbarkeit der Mittel

. kulturelle Integrität



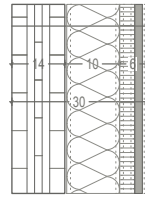
AUSSENWANDT 330 MM REI 60 / Rw 63 DB / U-WERT 0.214 W/M<sup>2</sup>K

- 140 MM BRETTSPERRHOLZ WANDELEMENT (5S)
- 140 MM HOLZFASERDÄMMPLATTE  
DIFFUSIONSOFFENE FOLIE SD = 0.3 M
- 30 MM KONTERLÄTTUNG SENKRECHT (HINTERLÜFTET)
- SCHWARZMATT ABGESTRICHEN
- 20 MM SICHLÄTTUNG SÄGERAU  
VARIIERENDE BREITE (10 / 7.5 / 5)



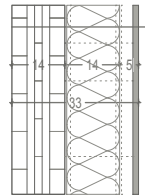
AUSSENWANDT 360 MM REI 60 / Rw 63 DB / U-WERT 0.214 W/M<sup>2</sup>K

- 140 MM BRETTSPERRHOLZ WANDELEMENT (5S)
- 140 MM HOLZFASERDÄMMPLATTE  
DIFFUSIONSOFFENE FOLIE SD = 0.3 M
- 30 MM KONTERLÄTTUNG SENKRECHT (HINTERLÜFTET)
- SCHWARZMATT ABGESTRICHEN
- 30 MM LÄTTUNG WAAGERECHT  
SCHWARZMATT ABGESTRICHEN
- 20 MM SICHLÄTTUNG SÄGERAU  
VARIIERENDE BREITE (10 / 7.5 / 5)



AUSSENWANDT 300 MM REI 60 / Rw 38 DB / U-WERT 0.24 W/M<sup>2</sup>K

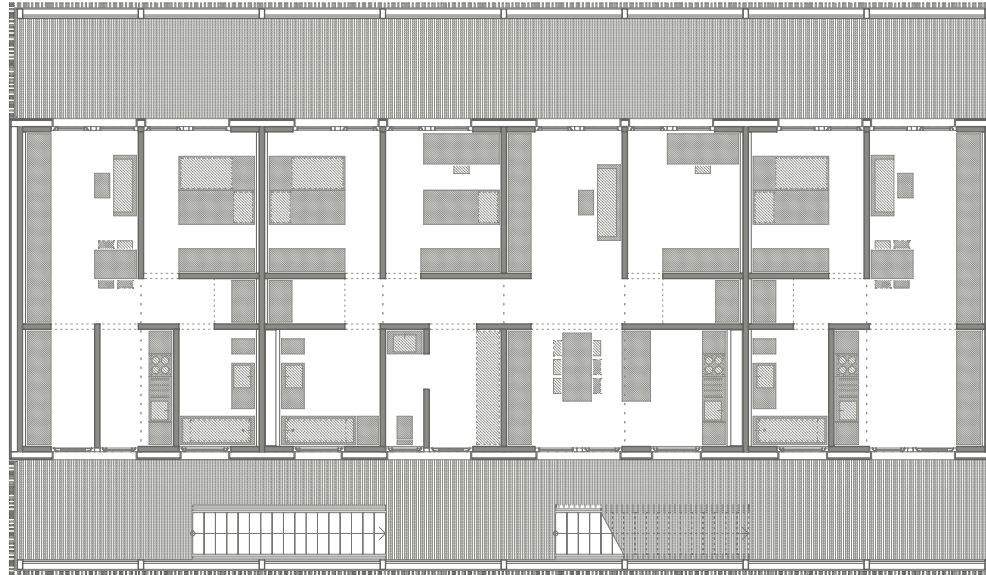
- 140 MM BRETTSPERRHOLZ WANDELEMENT (5S)
- 100 MM STEINWOLLE MW-PT
- 40 MM MAGNESITGEBUNDENE HOLZWOLLEPLATTE
- 20 MM KALK-ZEMENT GRUNDPUTZ  
ARMIERUNGSSPACHTELUNG  
SILIKONHARZPUTZ

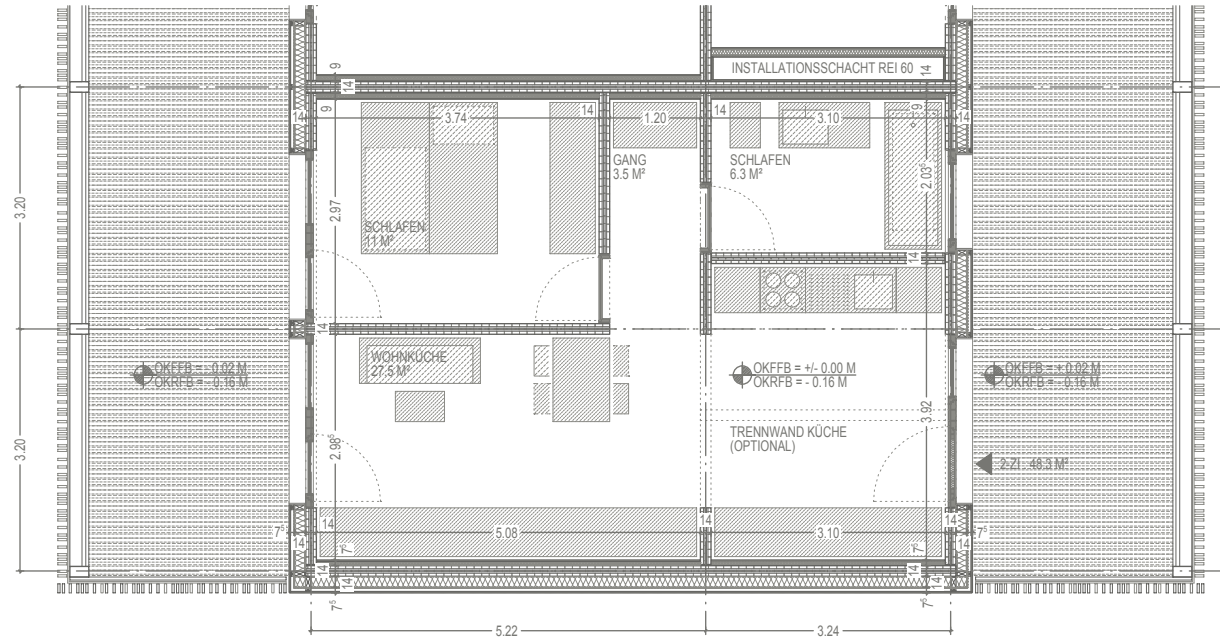


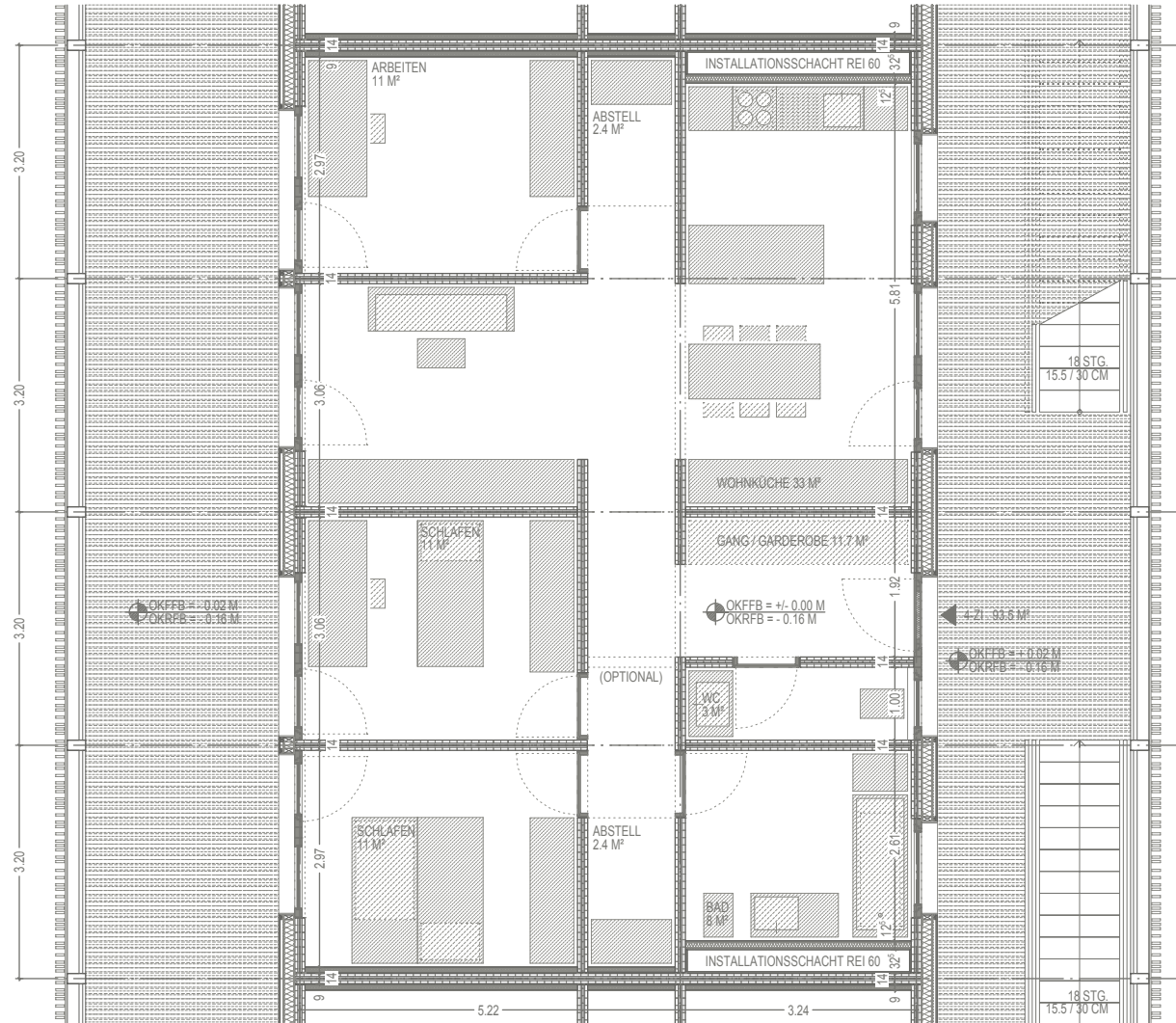
AUSSENWANDT 330 MM REI 60 / Rw 43 DB / U-WERT 0.214 W/M<sup>2</sup>K

- 140 MM BRETTSPERRHOLZ WANDELEMENT (5S)
- 140 MM STEINWOLLE MW-PT  
VLIESKASCHIERT
- 170 MM UK ALUMINIUM T-PROFILE
- 15 MM PLATTENMATERIAL / ALTERNATIV PUTZ

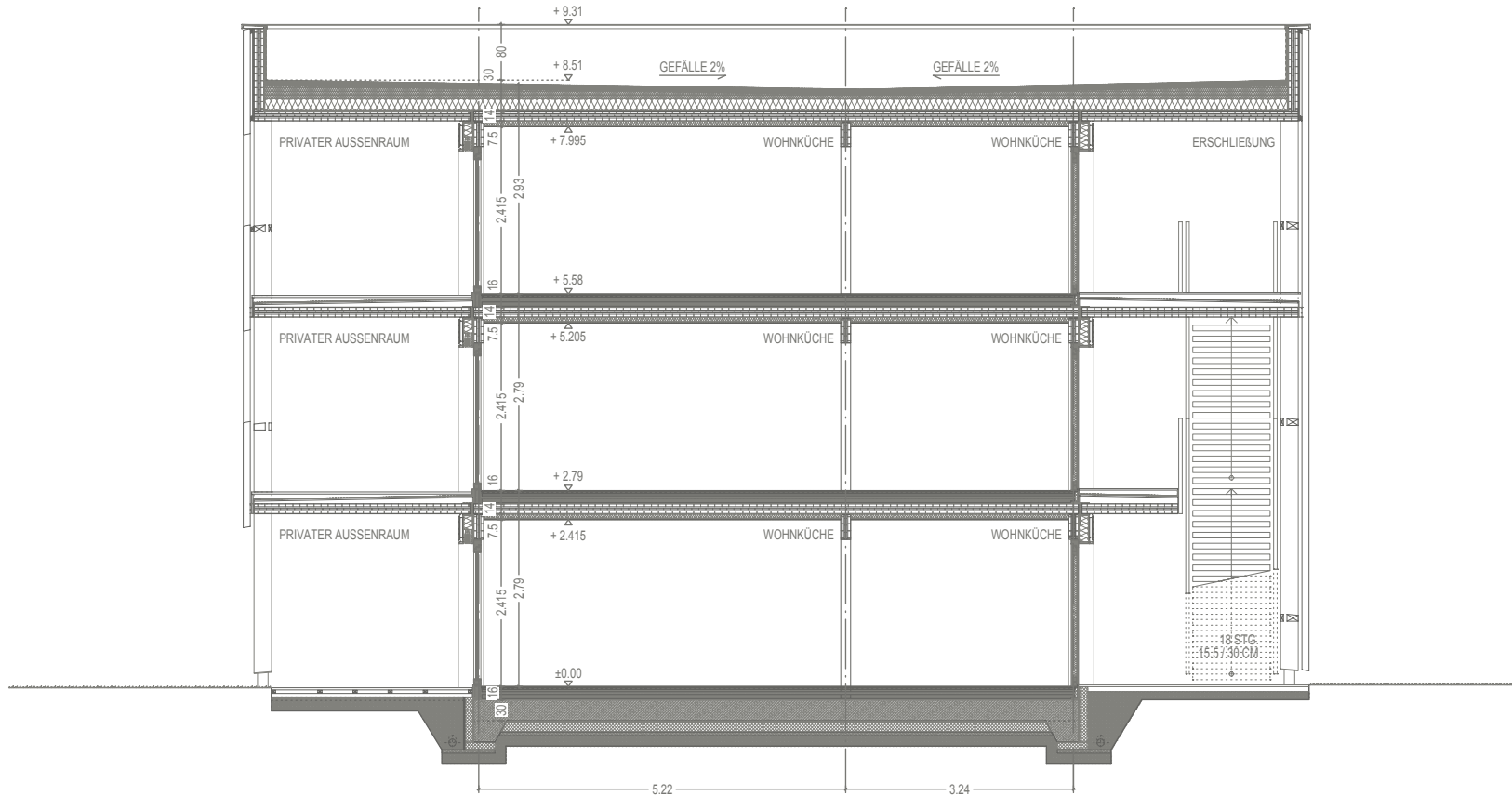












schnitt 01

