WOOD Cape Town Conference

CheiChei Living | Zanzibar

a timber equitable living concept

24 February 2022

OMT ARCHITECTS

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Equitable real estate developments for the lower- and middle-class market in East Africa are limited. At the same time, the demand for housing is vast and rapidly growing. The CheiChei Living project intents to serve this market by offering equitable and sustainable housing at high standard of finishes *and* for a competitive price. To reduce the project's footprint and to empower local communities the design focusses on construction methods optimized to allow for local recourses and local craftmanship.

The architectural concept for this project evolves around simple but flexible layouts allowing for a wide range of apartment types; from small duka's (shops) and studio apartments up to shared living concepts and everything in between. This flexibility leads to multiple living opportunities for different generations combined into one settlement. Through the flexible character of the building layout a diverse urban context can be created even when making use of the same building envelopes. In this way the project remains equitable for all and at the same times creates heterogeneous and inclusive communities.

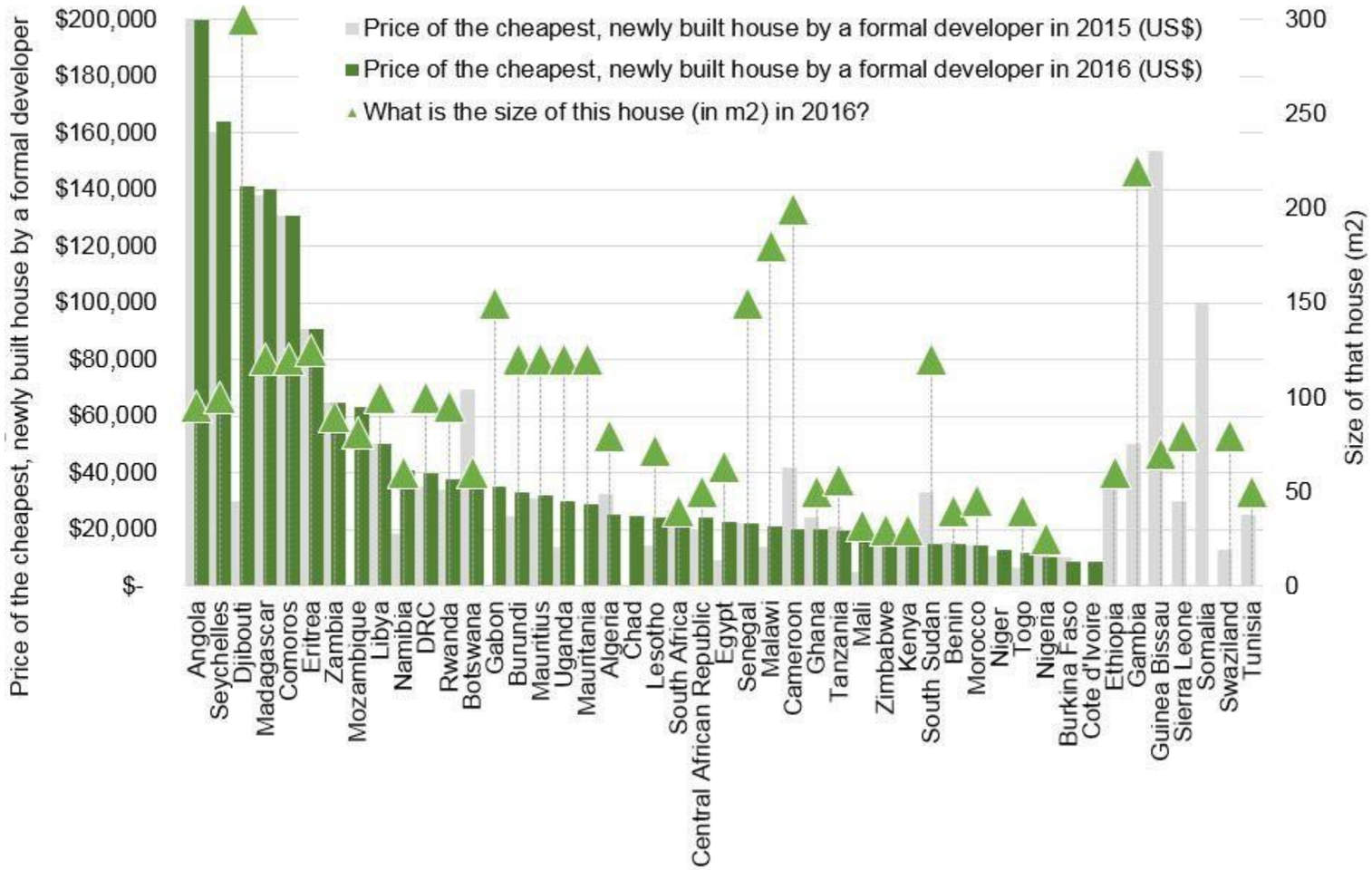
The buildings are designed as a sustainable four-story timber structure making best use of a range of different applications of timber elements. To optimize life safety, waterproofing and to provide structural stiffness, the cores - including the bathrooms - are build conventional. The combination of the chosen building techniques allows for (local) prefabrication and an efficient assembly process. By making optimized use of flexible and individual fit-out options, the project can react to changing demands and requirements to little additional costs. The modular approach allows for high finishing standards and a ditto living quality.

OMT ARCHITECTS

The World Bank Group estimates that by 2030

three billion people = 40 percent of the world's population

will need new housing units



SOURCE: CENTRE FOR AFFORDABLE HOUSING FINANCE IN AFRICA

CheiChei LIVING

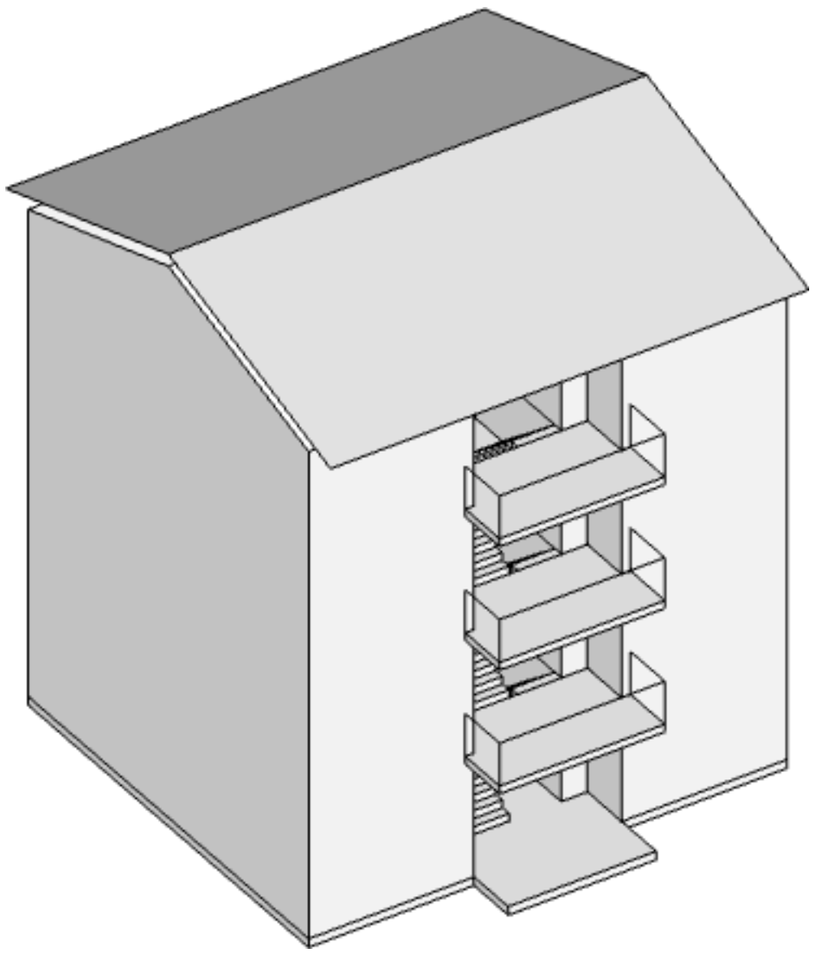
FRAMEWORK

SUSTAINABLE & EQUITABLE LIVING
challenges & thresholds

BEST PRACTICE

≠

INNOVATION



OPPORTUNITY

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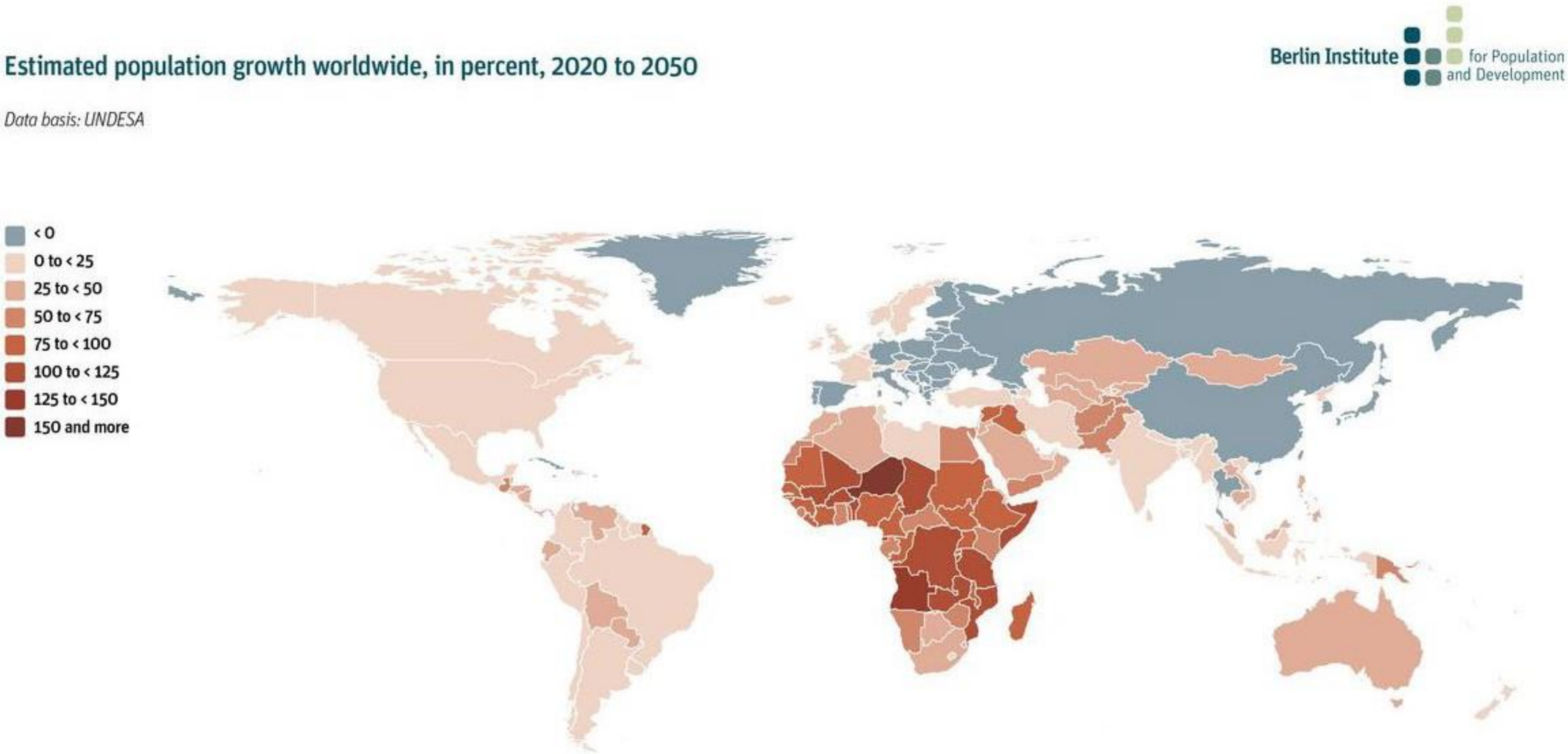
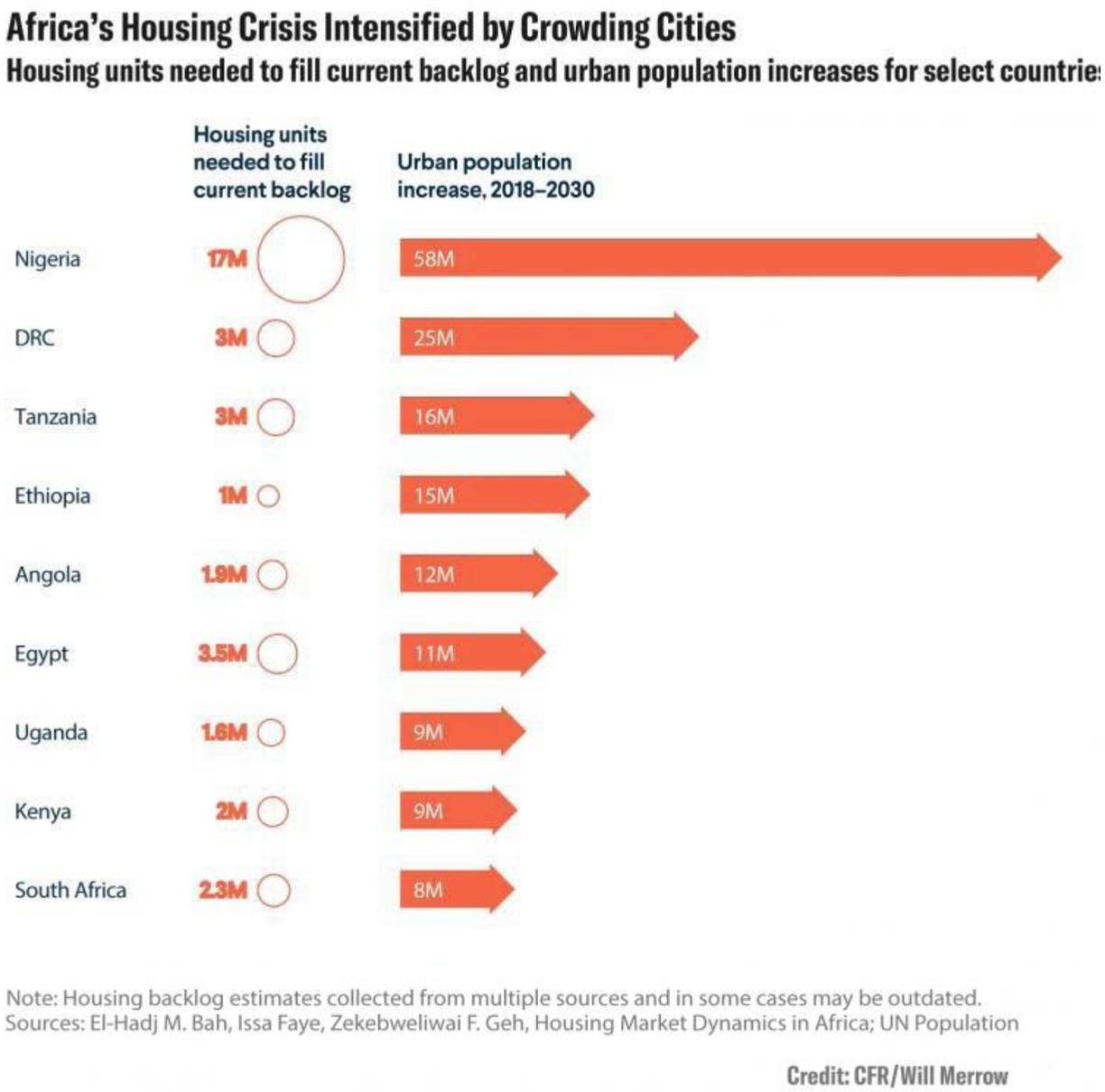
RISK

SUSTAINABLE & EQUITABLE LIVING
necessity and opportunity through demographics



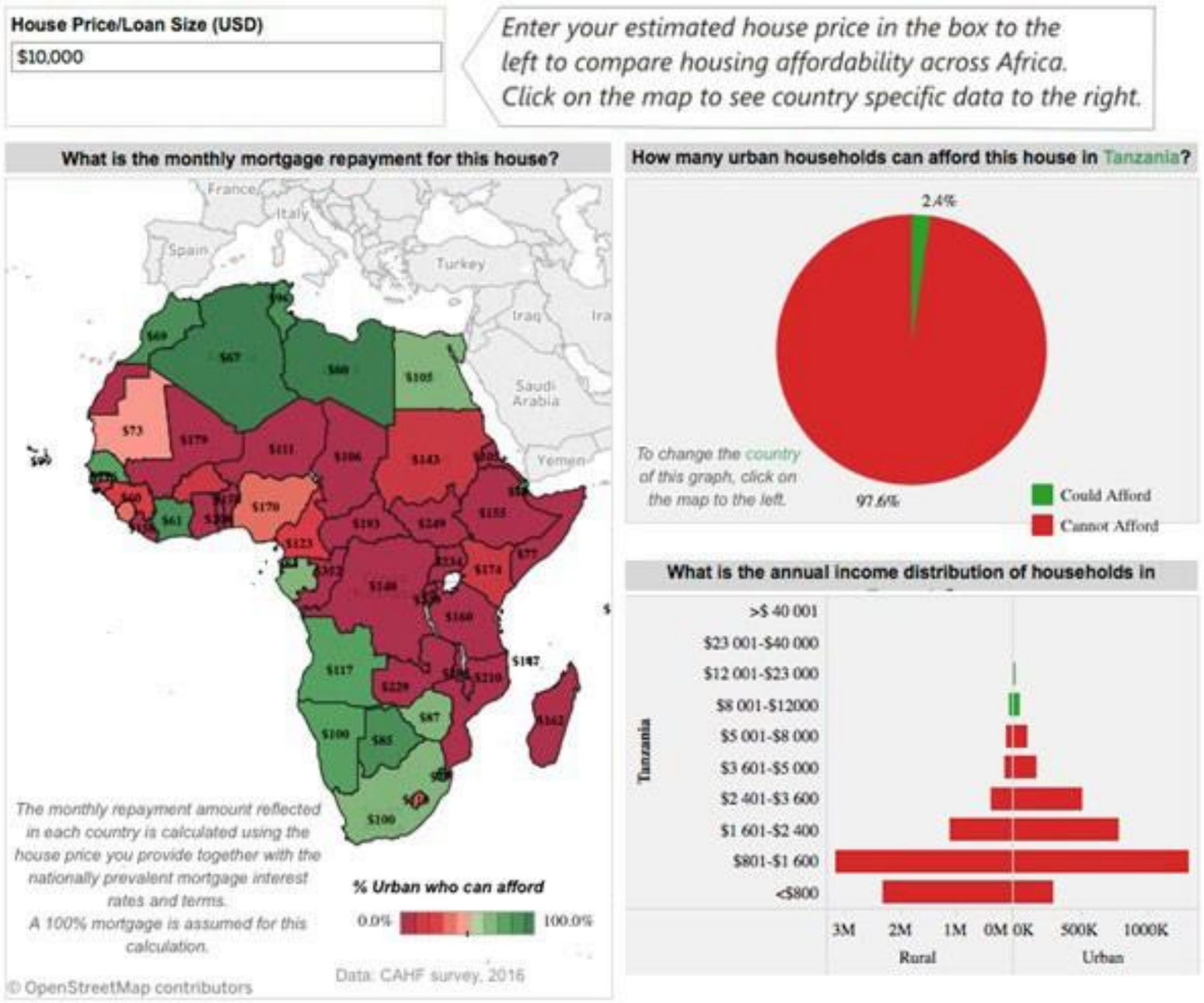
SOURCE: BERLIN INSTITUTE

SUSTAINABLE & EQUITABLE LIVING
backlog and growth challenge



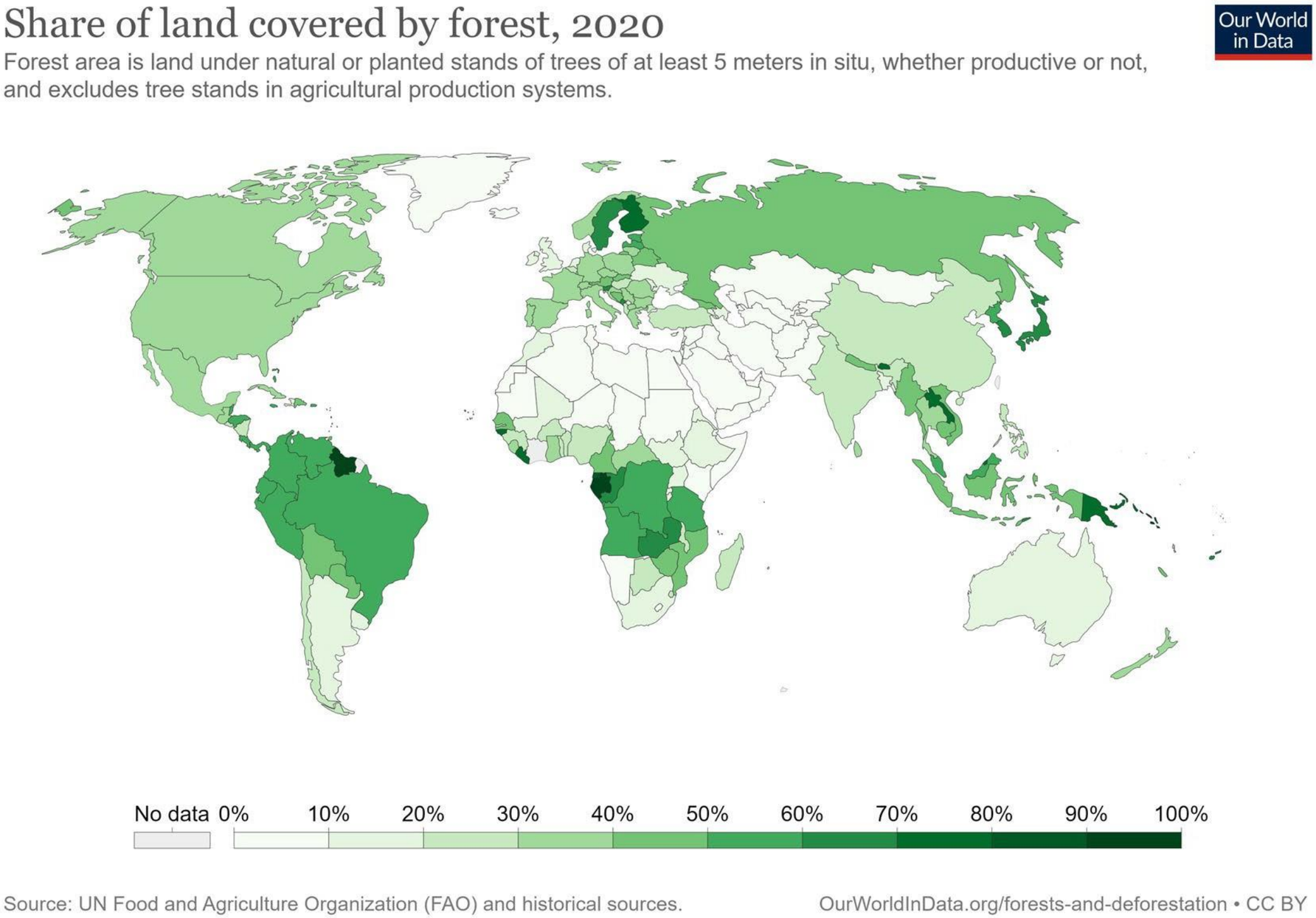
SOURCE: THINK GLOBAL HEALTH

SUSTAINABLE & EQUITABLE LIVING
access to financing



SOURCE: CENTRE FOR AFFORDABLE HOUSING FINANCE IN AFRICA

LOCAL EMPOWERMENT
use of available recources



percentage of forest

16.1 % - North America
15.7 % - Africa
15.3 % - Asia

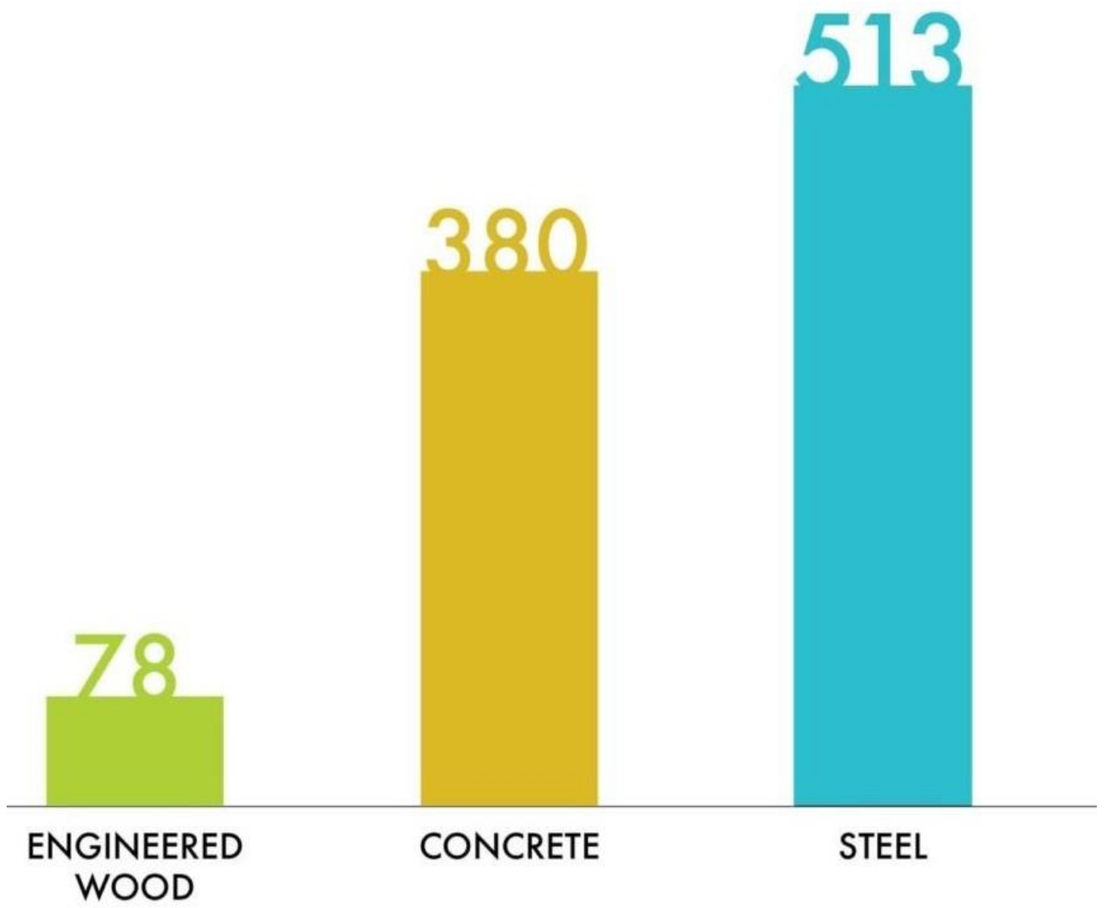
SOURCE: OUR WORLD IN DATA

LOCAL EMPOWERMENT
towards the creation of a timber industry

BEST PRACTICE

≠

INNOVATION



CO^2 emissions for a 7.3m beam made of different materials, supporting an unfactored load of 14.4kN/m, as calculated by the Athena software program (source: cecobois)

OPPORTUNITY

=

RISK

SOURCE: PASSIVE HOUSE ACCELERATOR

FUMBA TOWN

LOCATION

FUMBA TOWN

TODAY

FUMBA TOWN

TIMBER DEVELOPMENTS

ROW HOUSES

Timber Frame

MOYONI HOMES

Timber Frame walls
&
Composite Slabs
CLT + concrete

VIZAZI HOUSES

Cross Laminated Timber

NETWORK OF SPECIALISTS

OMT architects

architects
engineers
developers
researchers
contractors
innovators

ZUTARI
IMPACT. ENGINEERED.

IGNIS
Fire · Design · Consulting

ETH zürich

KSI
SMART BRANDSCHUTZ

VIQ architecture

IPA
architects

Knippers Helbig
Advanced Engineering

THECOOPERUNION

VOLKS.HOUSE

CPS
redefining *spaces*

binderholz

OMT
ARCHITECTS

Birk Heilmeyer und Frenzel Architekten

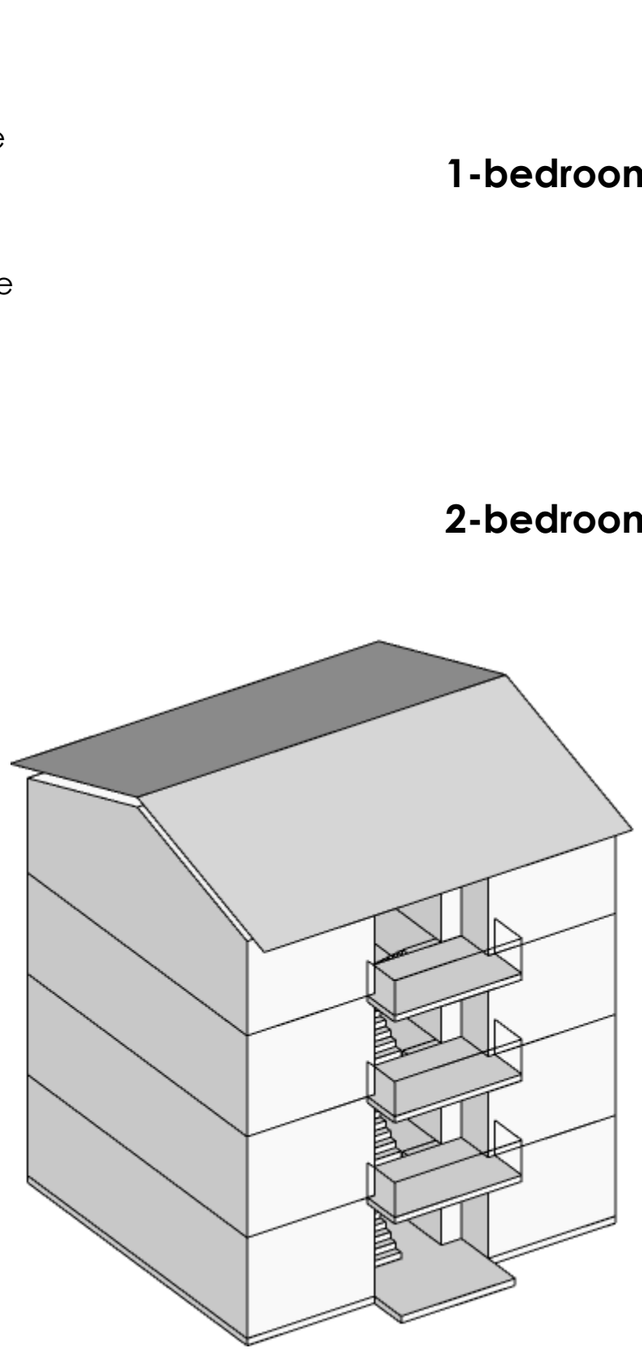
MASTERPLAN | FUMBA TOWN

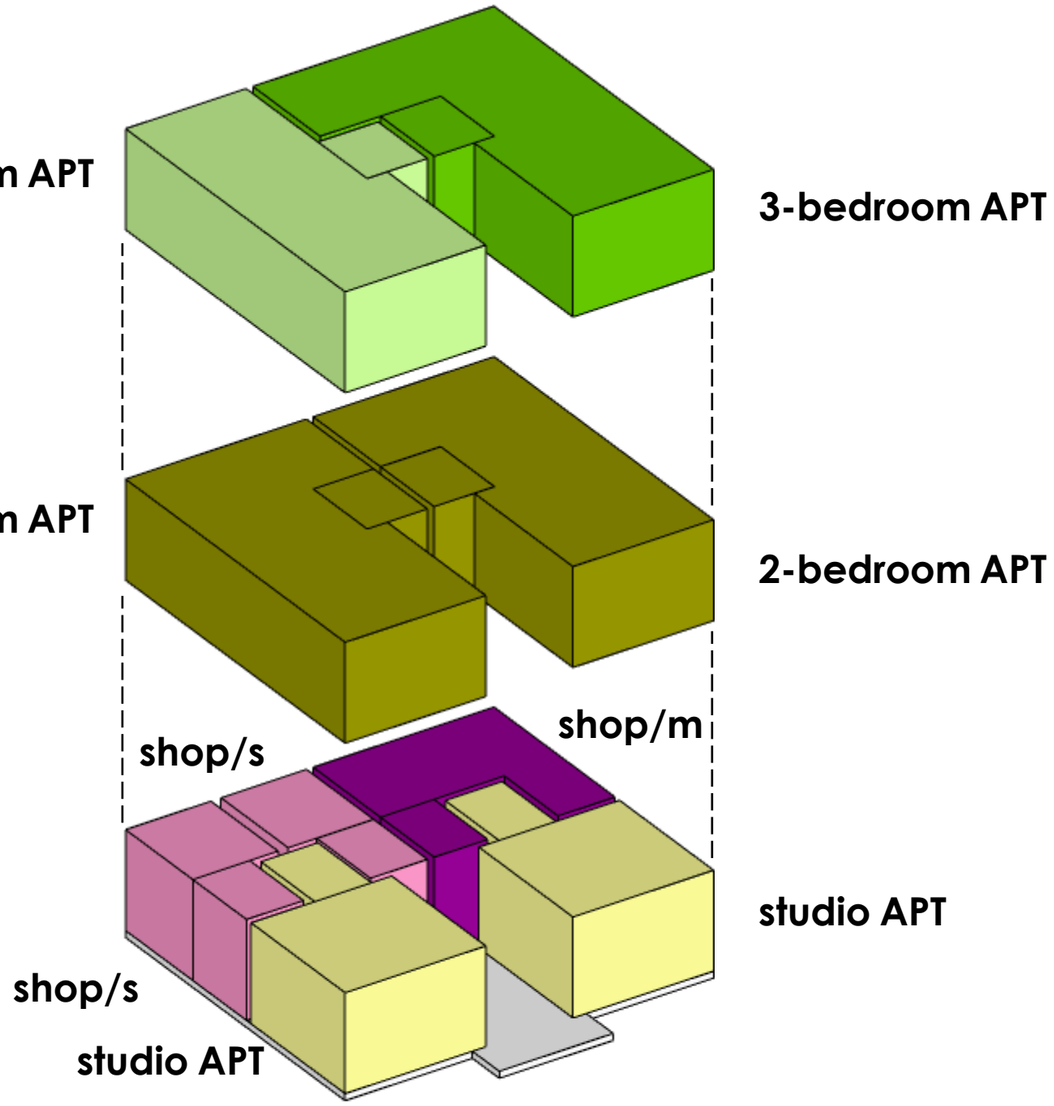
CheiChei LIVING

DESIGN CRITERIA

DESIGN CRITERIA
equitable housing

flexibility
centralized infrastructure
local resources
low tech solutions
similar components
optimized interior climate
social cohesion





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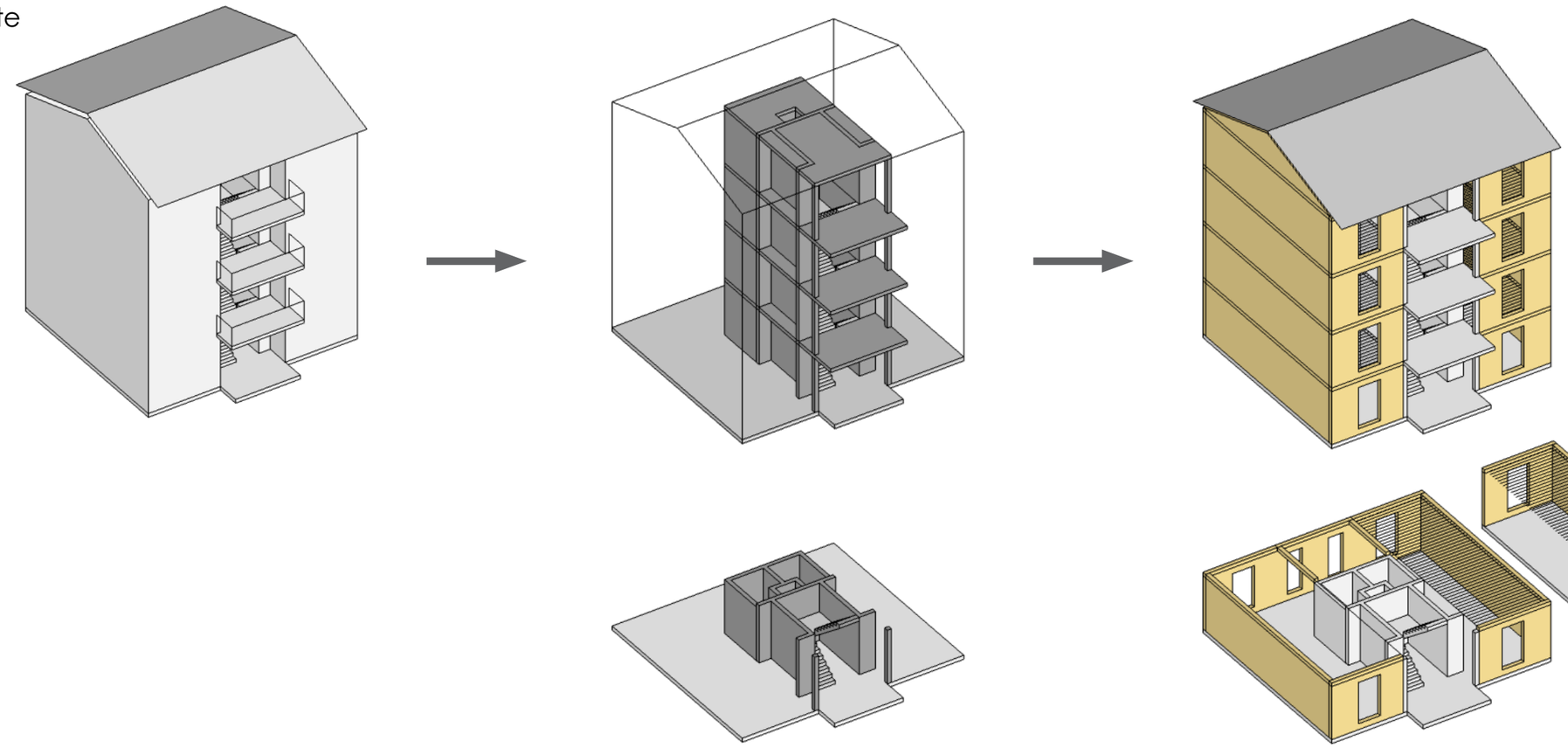

massing

concrete core

staircase
bathroom
riser

timber frame or CLT

wall
ceiling
window

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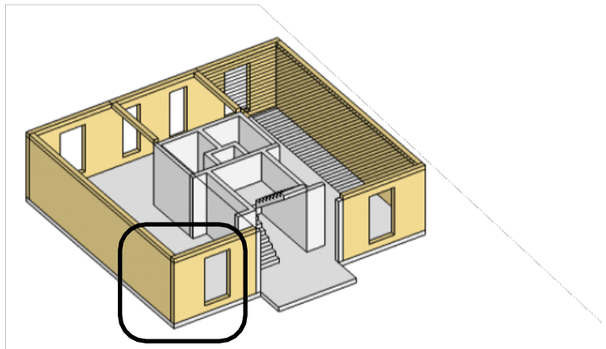
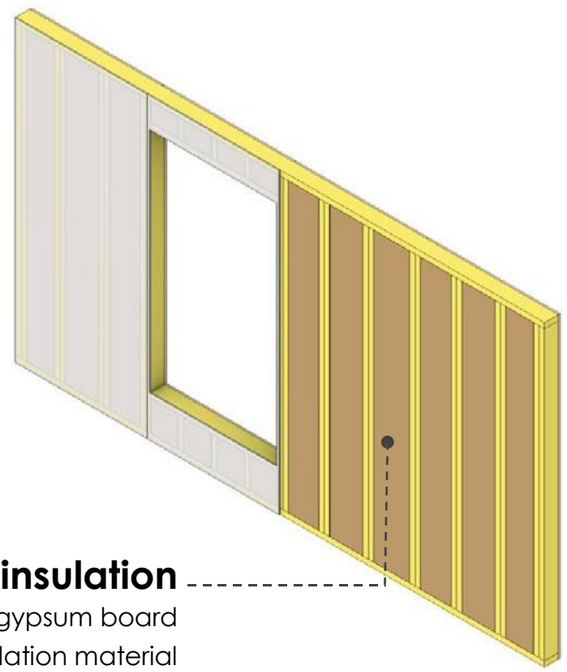
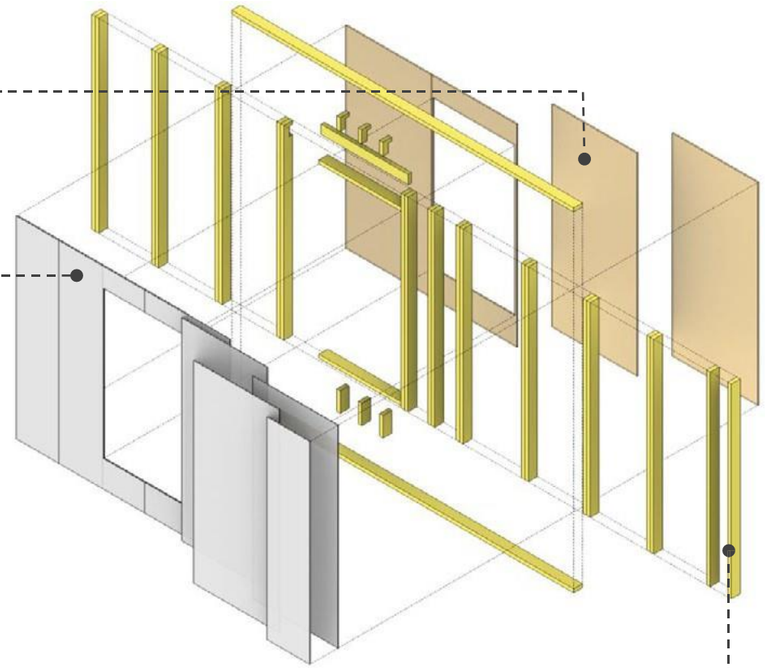




osb board
lateral stability and bracing
currently imported

gypsum board
fire protection to the timber structure
allow use of any insulation



insulation
fire protection provided by the gypsum board
flexibel selection of insulation material
i.e. mineral wool, straw, earth block, spray foam, etc

2x5” timber studs
standard size in East Africa, can be sourced locally
boards are coupled together to achieve required
strength while promoting available products
optimized element sizes to be obtained with
the development of local timber processing industry

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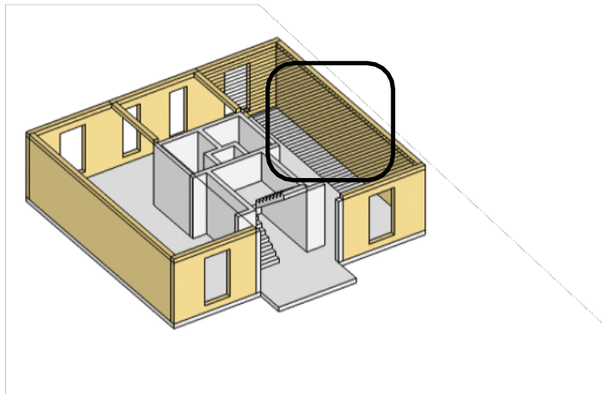
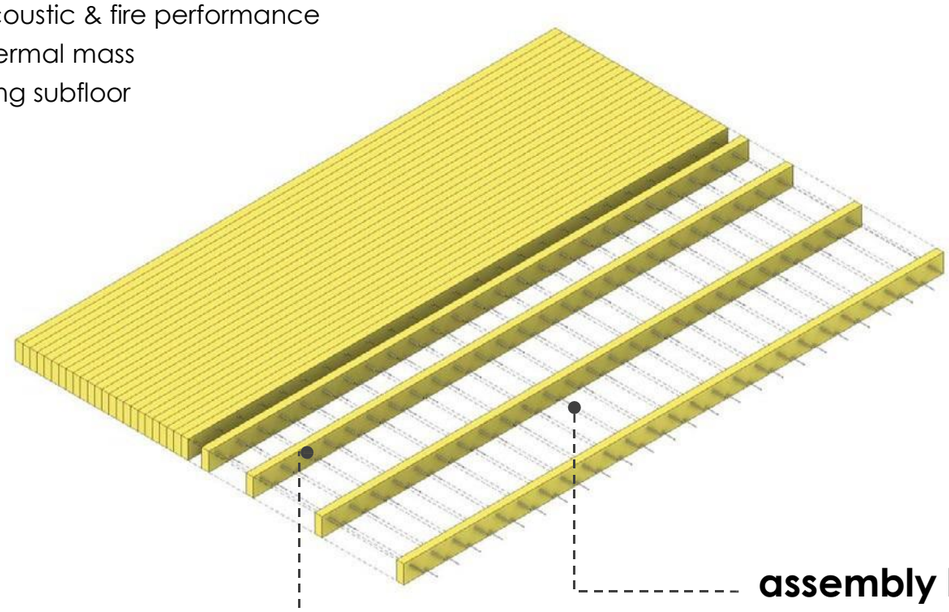


composite finish
concrete topping layer
acoustic & fire performance
thermal mass
tiling subfloor



2x5” timber board
standard size in East Africa
can be sourced locally

assembly by nailing
efficient and low tech approach
ease of local production
undersight: exposed timber

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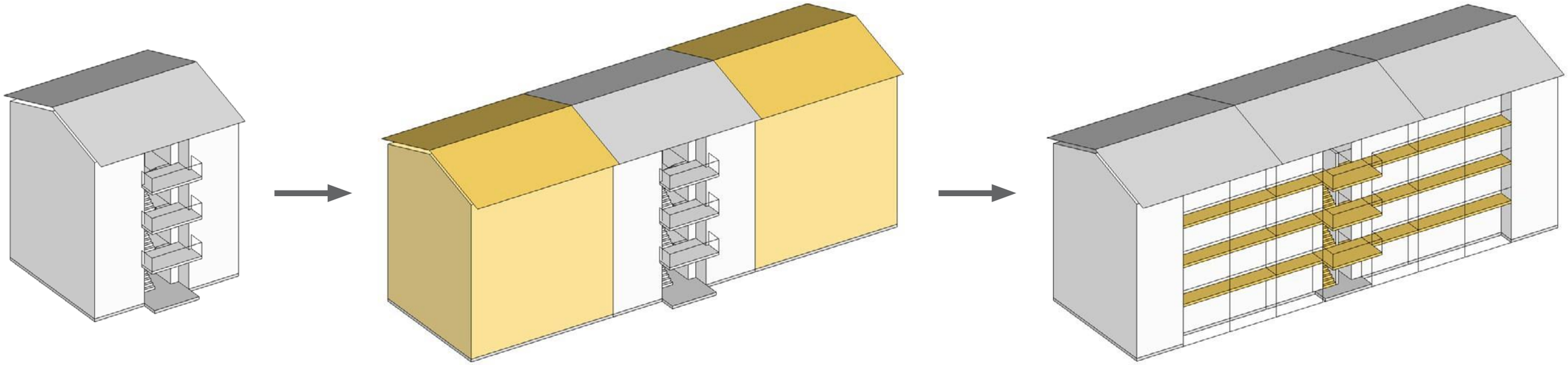

typical housing block
studio, 1-, 2- and 3-bedroom apartments

8 - 12 units

housing blocks combined
studio, 1-, 2- and 3-bedroom apartments

24 - 36 units

community living building
single room, loft, 1, 2 & 3 bedroom and shared living apartments

24 - 64 units

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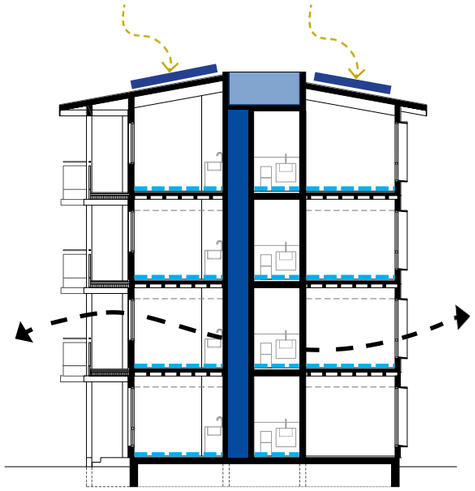
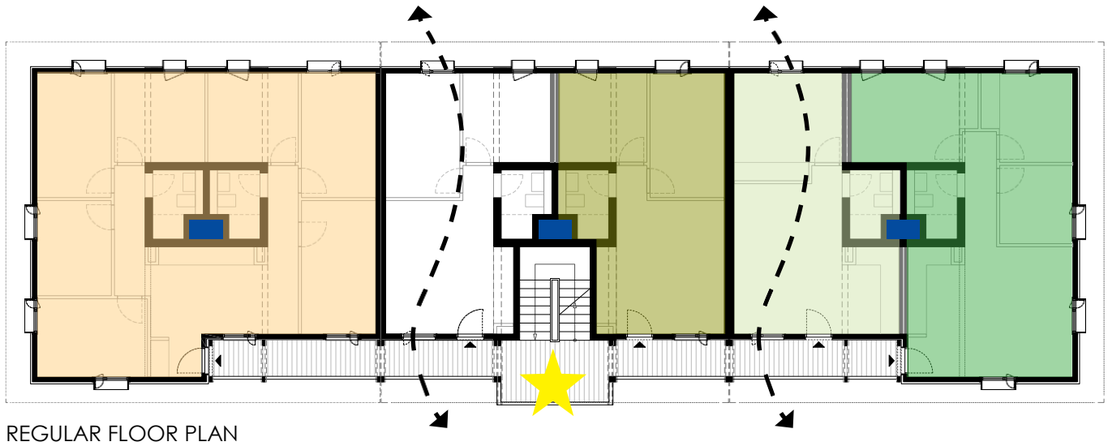
LONGITUDINAL SECTION



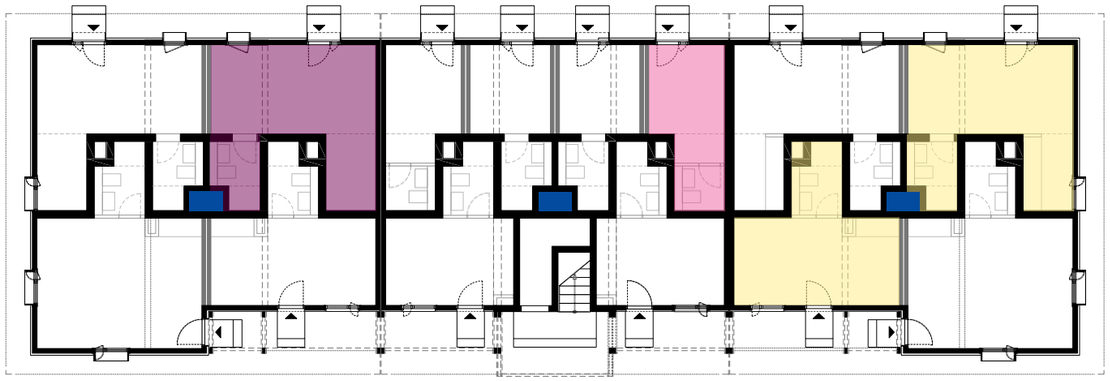
CROSS SECTION

shared living
3-bedroom apartment
2-bedroom apartment
1-bedroom apartment
studio apartment

shop/s
shop/m



REGULAR FLOOR PLAN



GROUND FLOOR PLAN

CheiChei LIVING

PERFORMANCE CRITERIA

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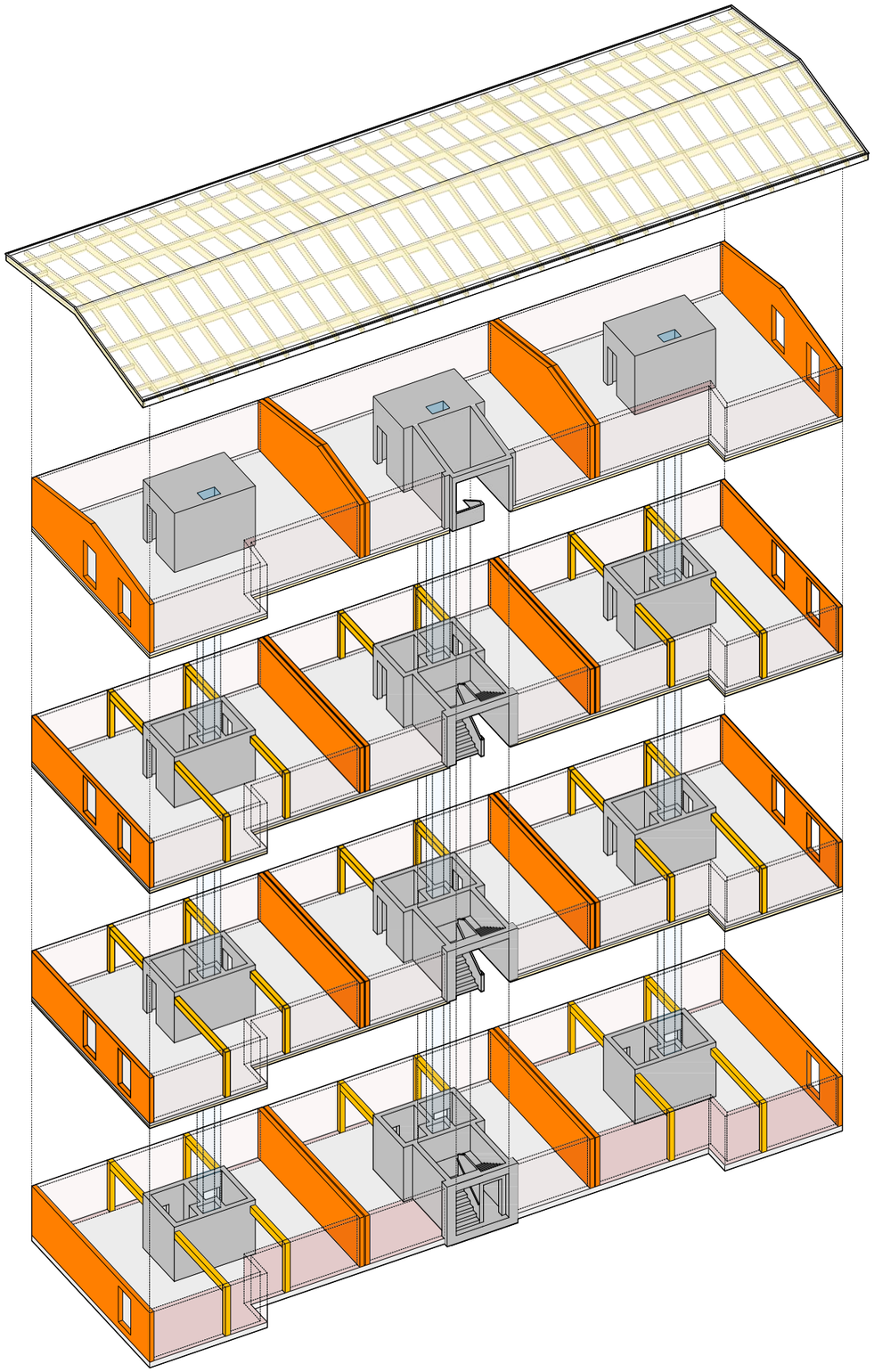
optimized performance criteria
conventional
cross laminated timber
glue laminated timber
timber frame
nailed timber composite floor
timber roof
portico



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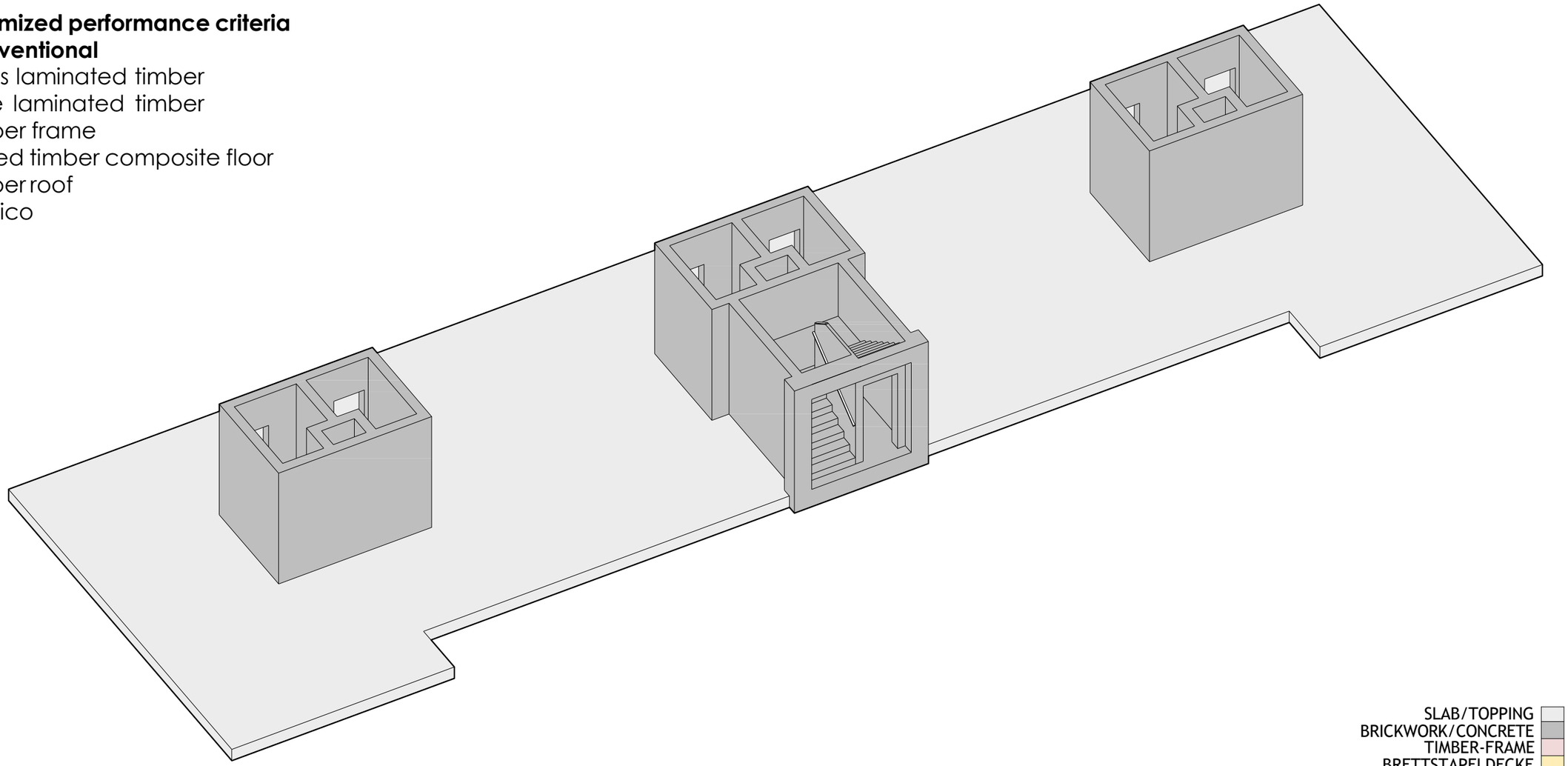

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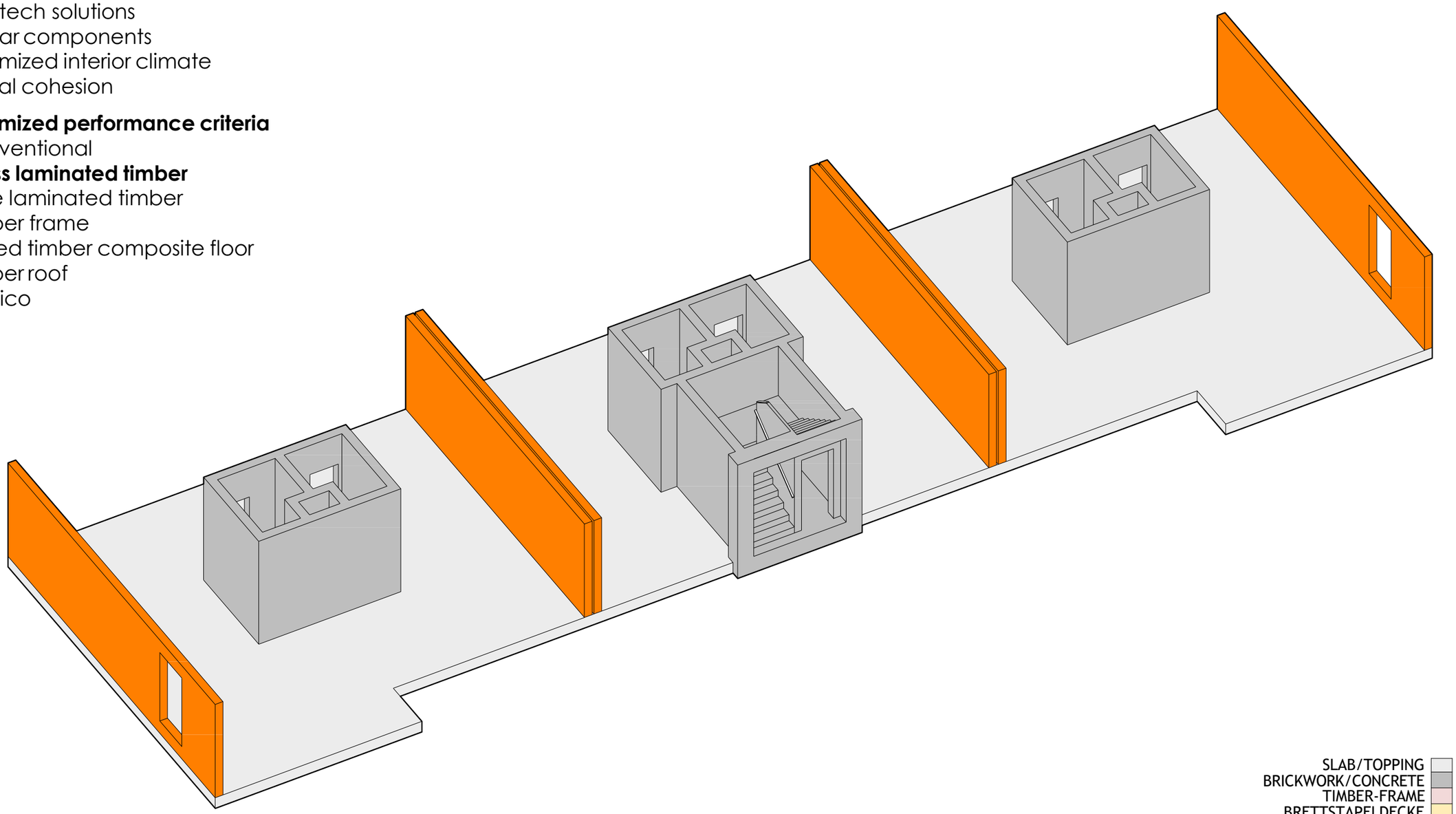

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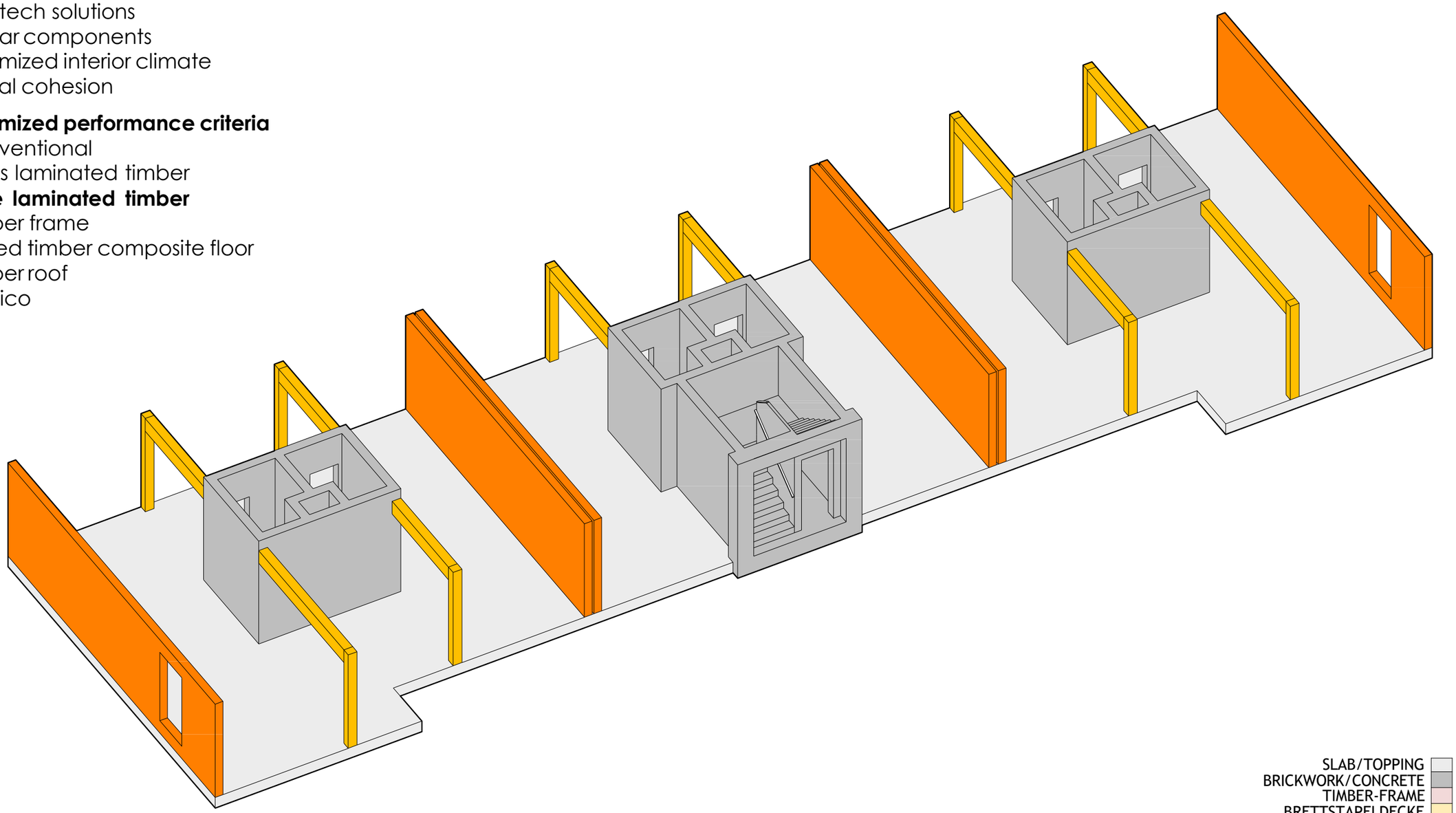

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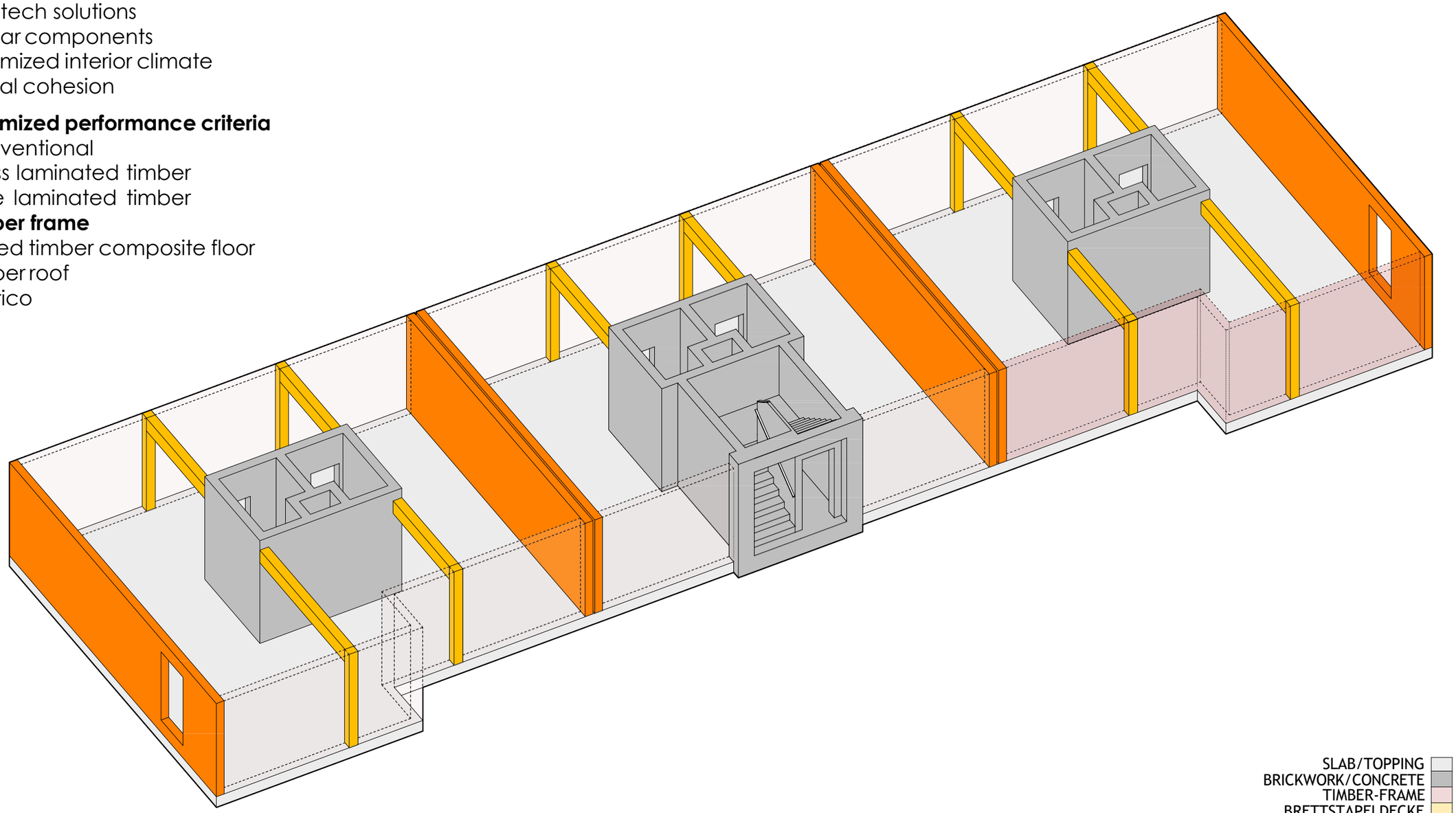

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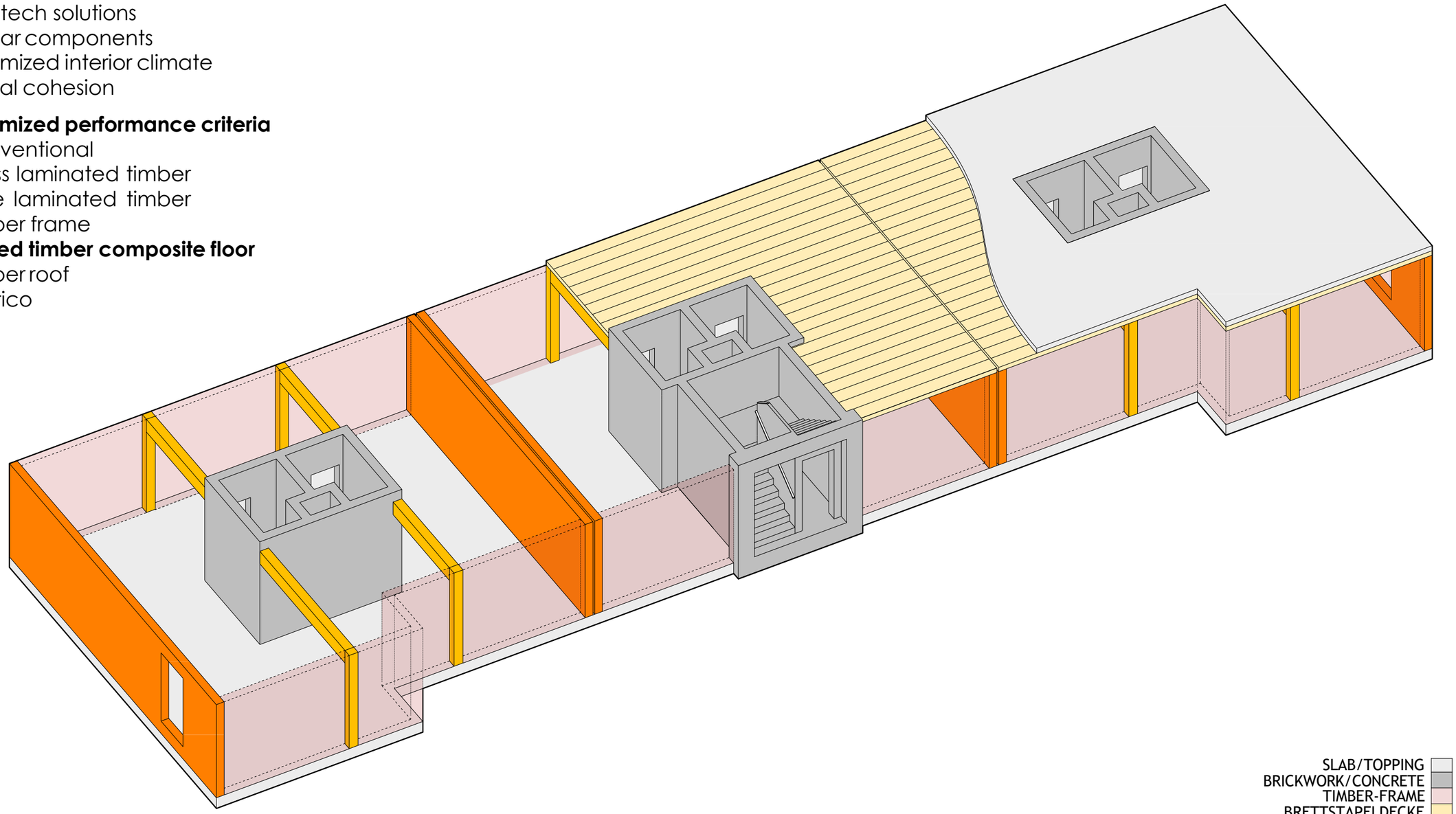

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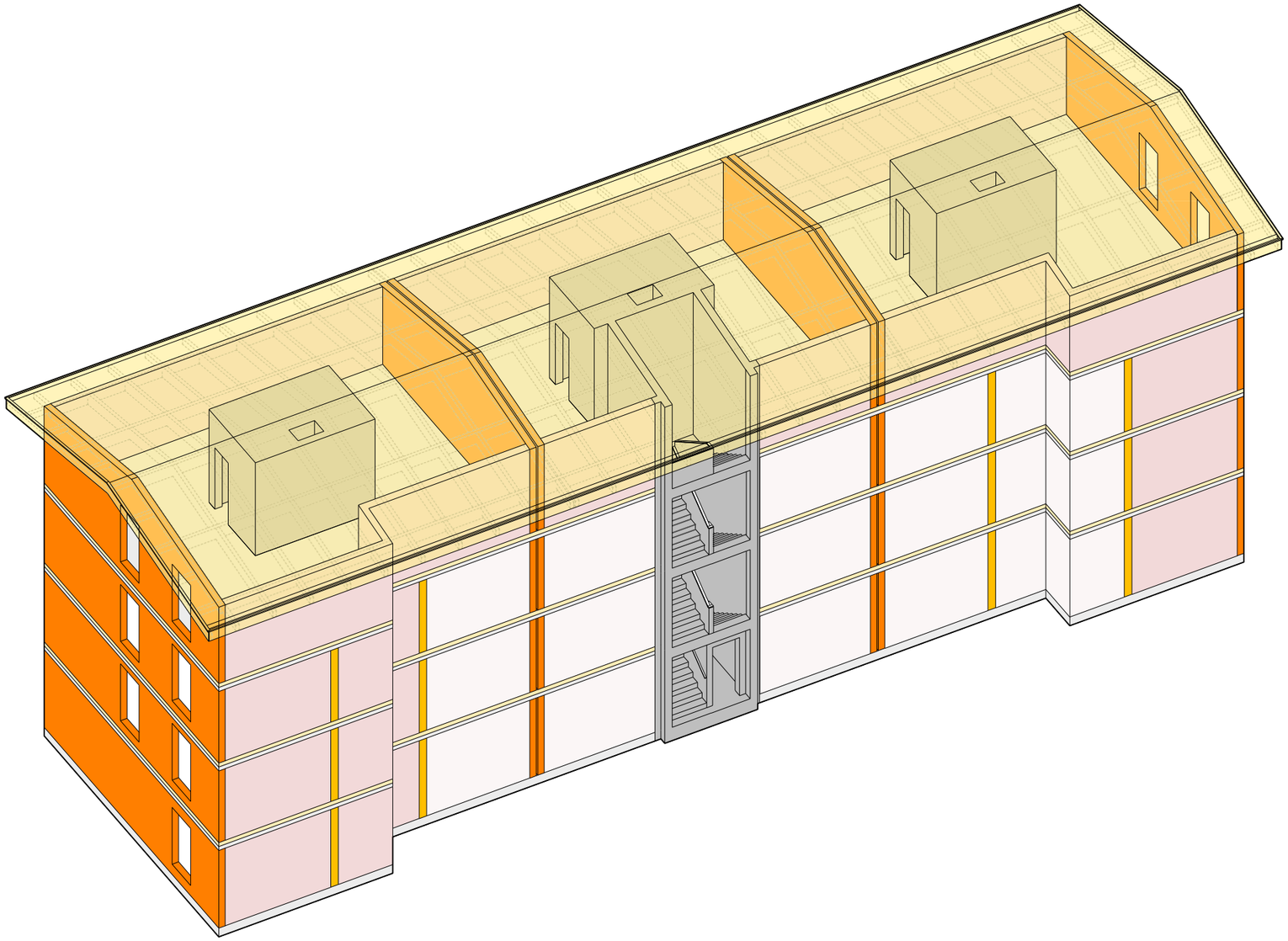

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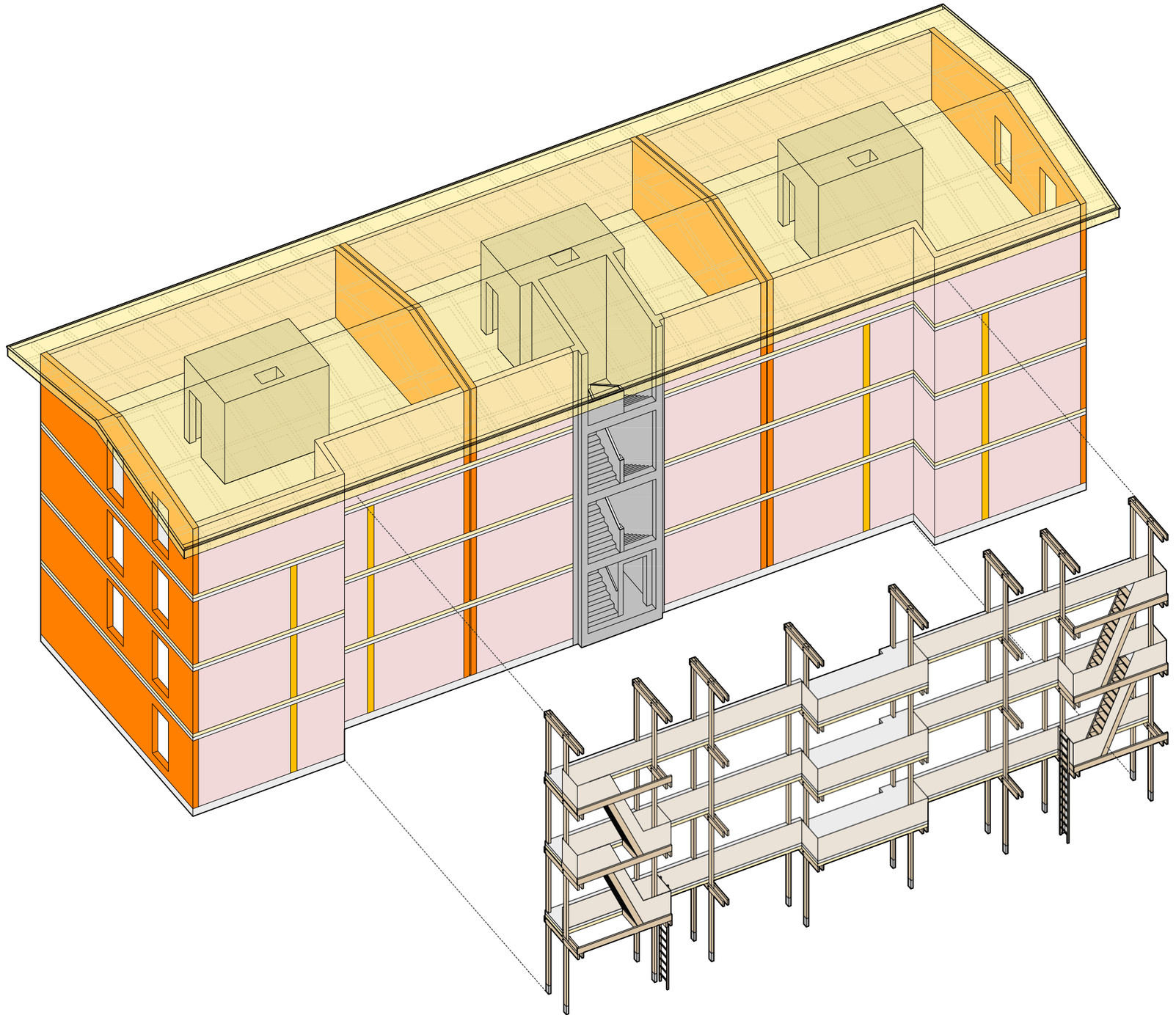

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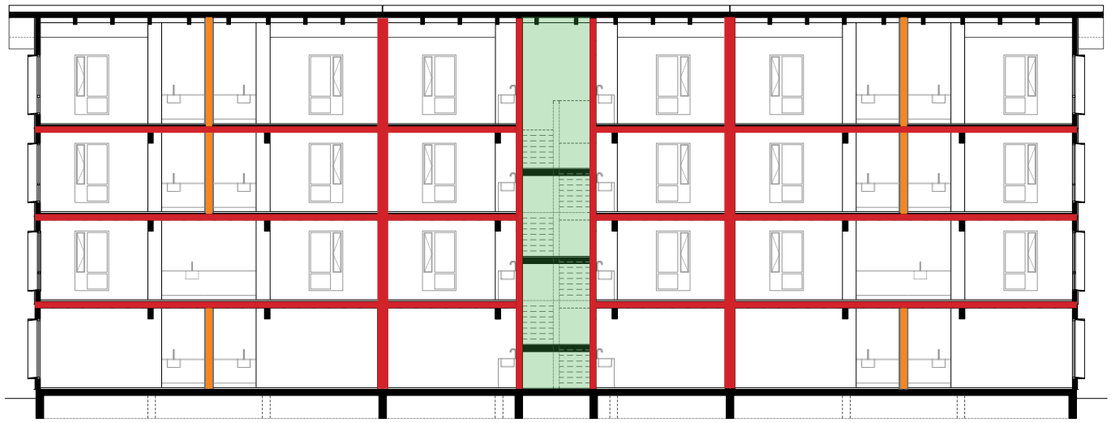
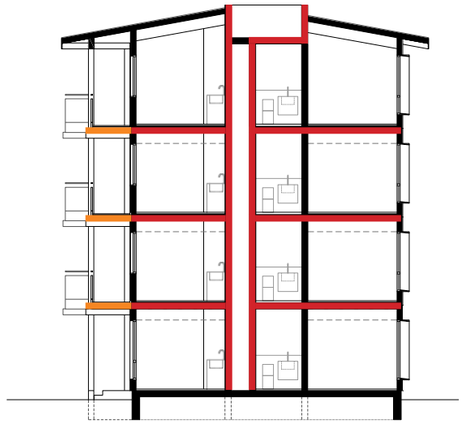
fire & life-safety
- occupants life-safety
- protection of adjoining buildings
- fire fighters safety
- structure
- compartmentation

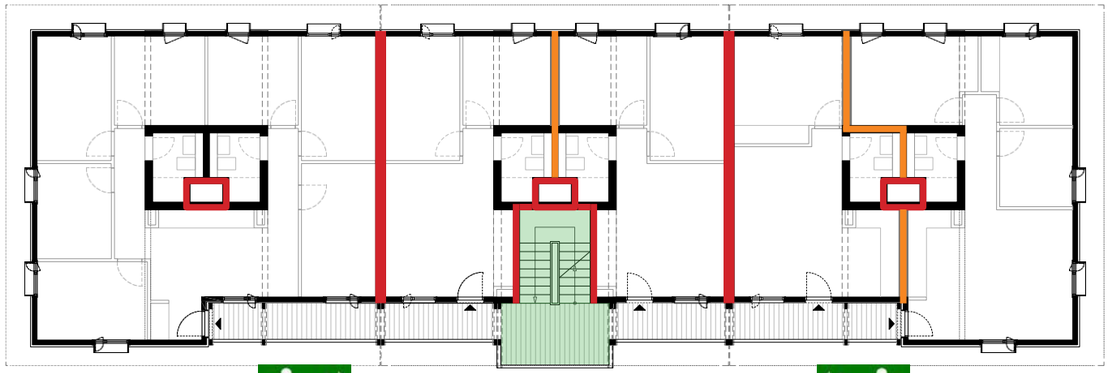
(R)EI 60
(R)EI 30



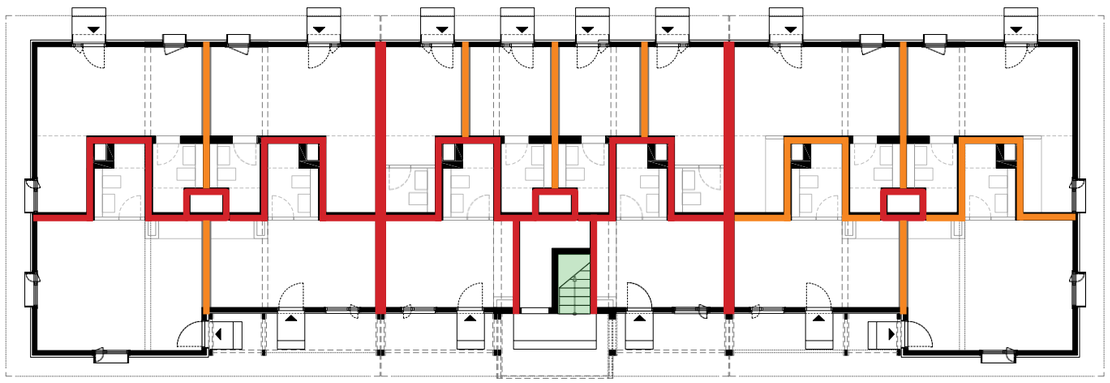
LONGITUDINAL SECTION



CROSS SECTION

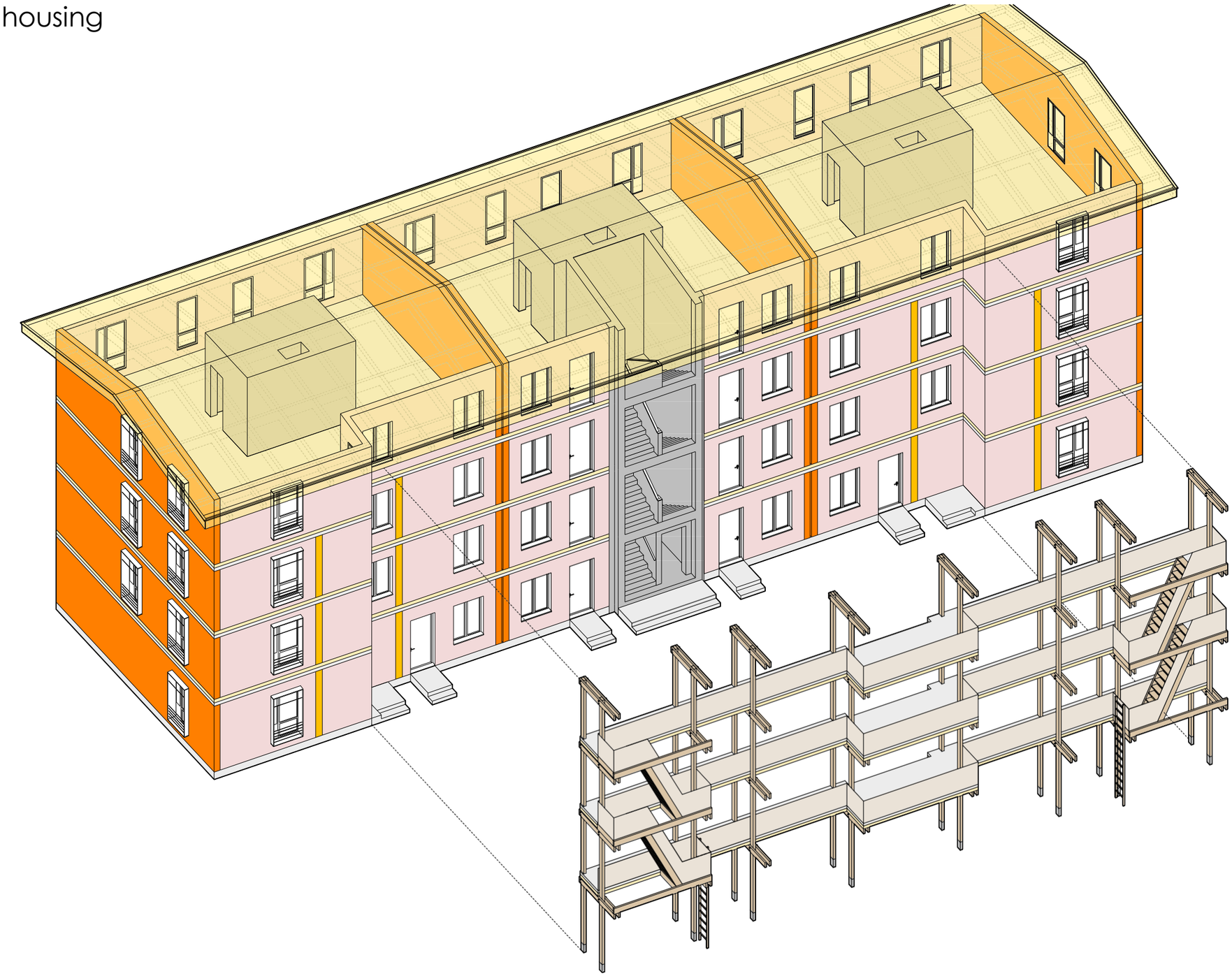


REGULAR FLOOR PLAN



GROUND FLOOR PLAN

PERFORMANCE CRITERIA
equitable housing



CheiChei LIVING

FLEXIBLE APARTMENT MIX

FUNCTIONAL CONCEPT
exemplary work / apartment mix

WORK/SHOPS

4	regular WORK/SHOP's	42,4 m²
4	large WORK/SHOP's	91,2 m²
8	**TOTAL**	**133,6 m²**

STUDIO APARTMENTS

2	regular STUDIO's	29,0 m²
2	medium STUDIO's	35,8 m²
2	large STUDIO's	50,8 m²
6	**TOTAL**	**115,6 m²**

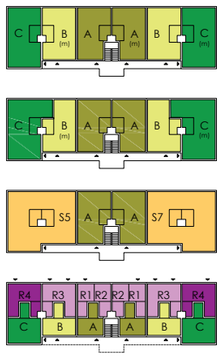
SHARED / MULTI-GENERATION LIVING

1	5-BEDROOM apartement's	92,7 m²
1	7-BEDROOM apartement's	91,8 m²
2	**TOTAL**	**184,5 m²**

APARTMENTS

2	1-BEDROOM's	74,2 m²
6	regular 2-BEDROOM's	232,8 m²
2	large 2-BEDROOM's	84,4 m²
2	corner 2-BEDROOM's	98,6 m²
2	corner 3-BEDROOM's	111,8 m²
14	**TOTAL**	**601,8 m²**

TOTAL LIVING AREA	**1.035,5 m²**
TOTAL GROSS AREA	**1.262,0 m²**



LEVEL 03

LEVEL 02

LEVEL 01

LEVEL 00

2-BEDRM PLUS

2-BEDRM MAX

1-BEDRM DELUXE

3-BEDRM DELUXE

FAMILIA MAX 5

FAMILIA DELUXE 7

2-BEDRM DELUXE

DUKA PLUS

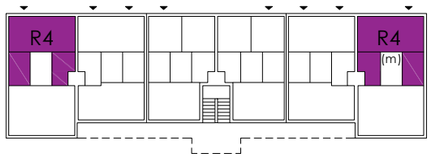
DUKA MAX

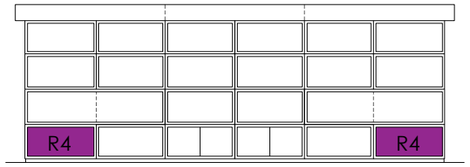
STUDIO PLUS

STUDIO MAX

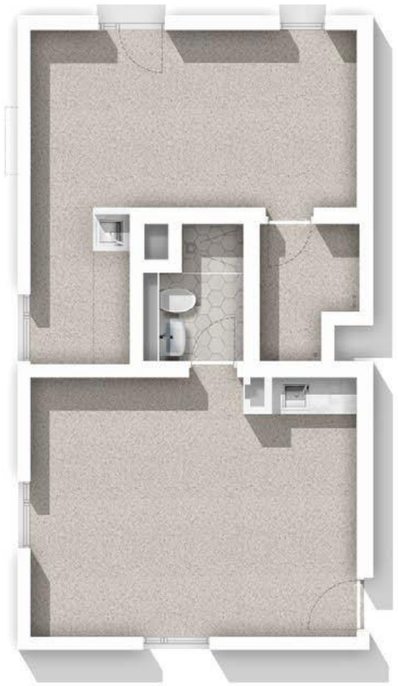
STUDIO DELUXE

FUNCTIONAL CONCEPT
exemplary work/shop layout





WORK/SHOP
22.8 m²



TYPE R4 / WORK/SHOP
DIY WORKSHOP - 22.8 sqm

CAFE / BAKERY
22.8 m²

TYPE R4 / HOSPITALITY
CAFE / BAKERY / RESTAURANT - 22.8 sqm

FLORIST
22.8 m²

TYPE R4 / SHOP
MERCHANT / CREATOR - 22.8 sqm

OFFICE
22.8 m²

TYPE R4 / OFFICE
AGENT / DOCTOR / BROKER - 22.8 sqm

0 1 2 5 10

CheiChei LIVING

PILOT PROJECT FUMBA TOWN

OMT ARCHITECTS

SITE PLAN | CheiChei LIVING

DEVELOPMENT & MARKETING

CPS LIVE LTD

Zanzibar | Tanzania
www.cpstanzania.com

CONCEPT

LEANDER MOONS INC

New York, United States
www.laud.nl

ARCHITECTURE

OMT architects GmbH

Berlin, Germany
www.omt-architects.com

STRUCTURAL ENGINEERING

KNIPPERS HELBIG advanced engineering

Stuttgart, Germany
www.knippershelbig.com

FIRE & LIFE SAFETY

IGNIS fire design consulting

Zurich, Switzerland
www.ignis-consulting.eu

KSI smart brandschutz

Zurich, Switzerland
www.ksi-brandschutz.ch

QUANTITY SURVEYOR

WEBB URONU & PARTNERS

Dar es Salaam, Tanzania

CONTRACTOR

VOLKS.HOUSE

Fumba Town, Zanzibar
www.volks.house

THANK YOU !