

LESS TO COMPACT,
LIGHT TO TRANSPORT
WITHIN LIMITED,
WE EXTEND A SPACE
STETCH A DORM
DRAW THE LIFE

LOCKROLL

by

LOCK

ROLL

A modular unit suits to student's lifestyles with stylishly programming. To design a dormitory, we represent a compact modular organism. The unit is compressed for the transportation system and assembling conditions. We "LOCK" the unit as "LOCK" the building due to certain lifestyles and the weather constraint so that one life would be more convenient and efficient. On the contrary, we "ROLL" it out to increase the boundary and be delighted with any special circumstances. Design features would help enhance an ordinary routine to enthusiastic actions.

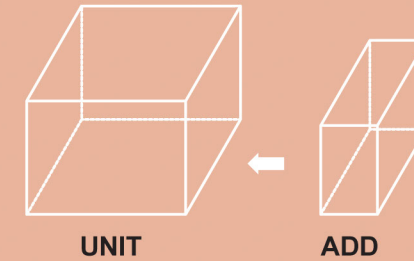
FROM A FUNCTION

LOCKROLL

Area requirement studies
from activities occurring in a student dormitory

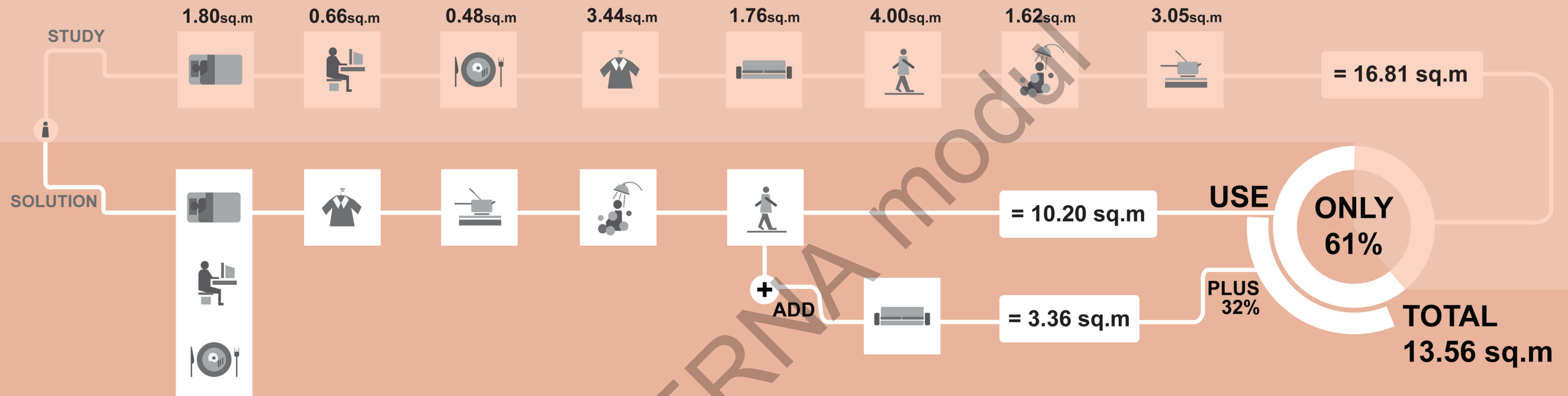
VS Design Unit Solution

The unit is designed by **overlapping** some activities in the same use area in order to reduce the use of space and make the unit more compact.

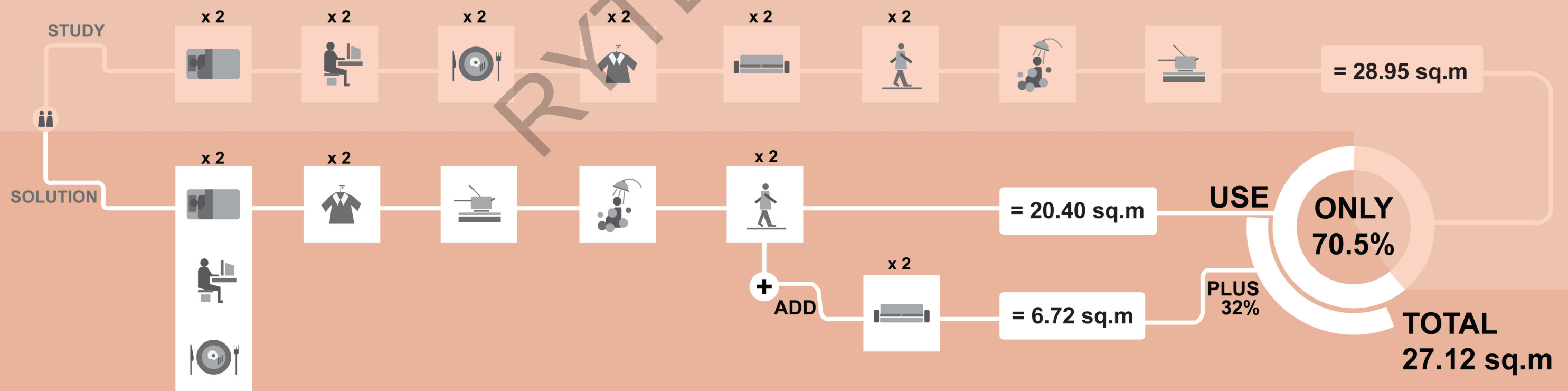


To maximize spaces and add more function, the additional unit has been attached to the primary unit structure as design feature.

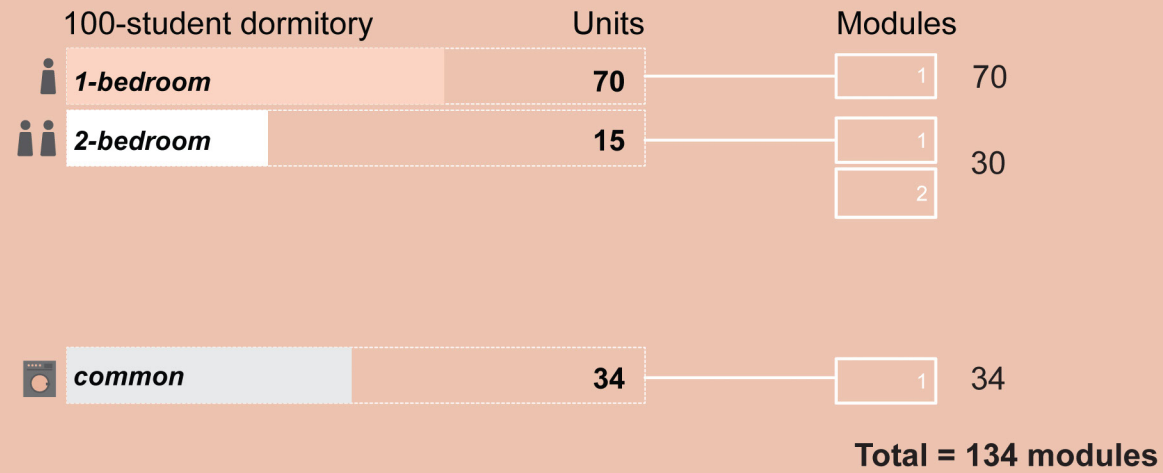
1-bedroom



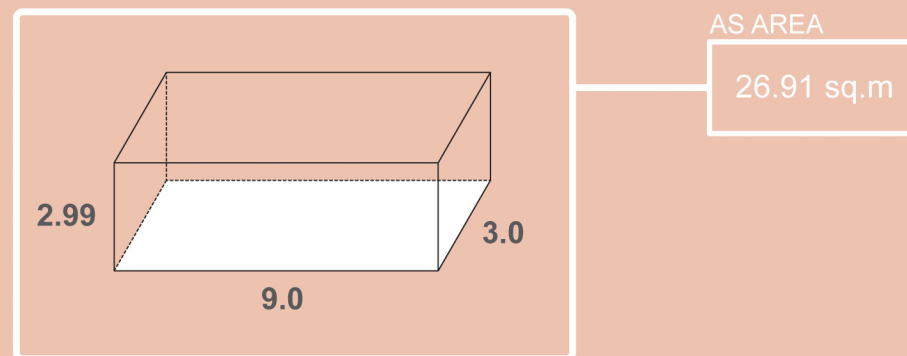
2-bedroom



Design Objective



Maximum modular unit area



70 modules + 30 modules + 34 modules
= 134 modules



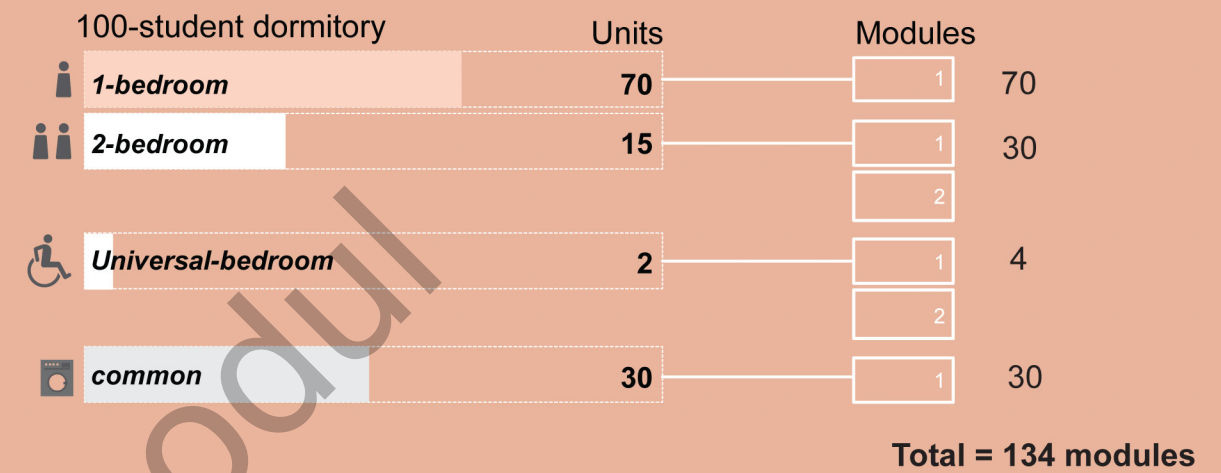
1 module = 1 shipping round
*Assumption as

Total = **134** rounds

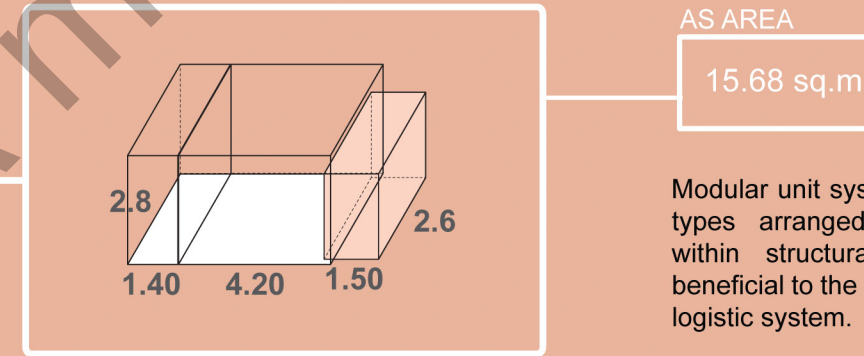
vs

Design Solution

The universal unit is added up to the building by using the same modular type

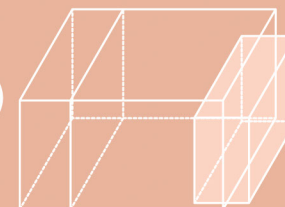


Designed structure modular unit



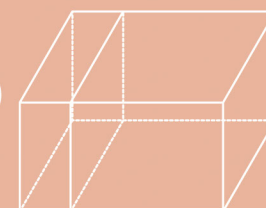
Modular unit system is applied to all unit types arranged by functional usages within structural characteristics. It is beneficial to the building construction and logistic system.

TYPE A



70 modules + 30 modules = 100 modules

TYPE A1



4 modules + 30 modules = 34 modules



1 module/shipping round

UP
50%



2 modules/shipping round

According to the design solution, 1 modular unit for transportation is reduced to 58 percent of total maximum capacity. Therefore, 2 modular units can fit to one trailer truck per shipping round.

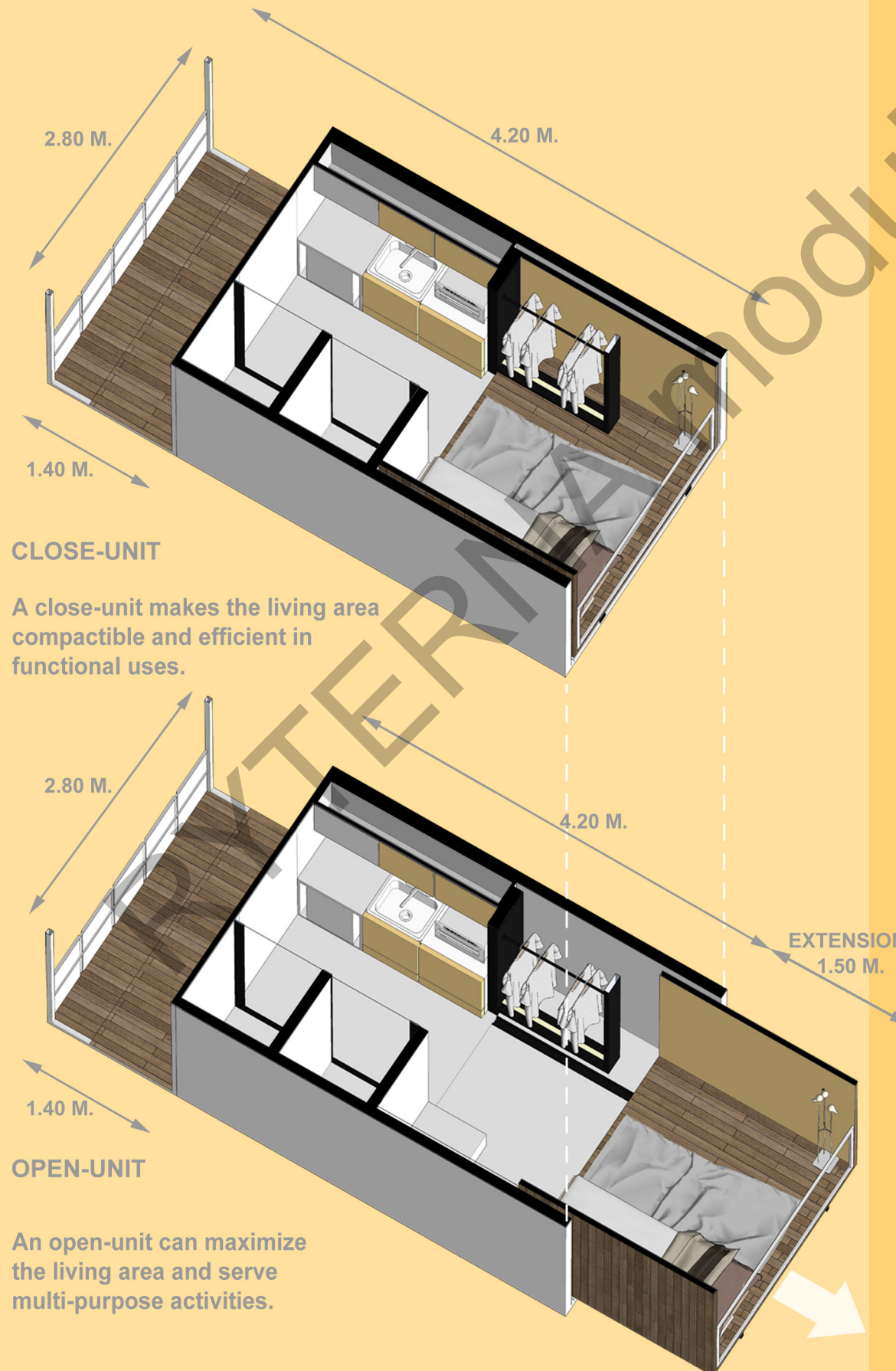
Total = **67** rounds



EXTEND THE LIMIT

LOCKROLL

OPEN & CLOSE UNIT PERFORMANCE



CLOSE-UNIT

A close-unit makes the living area compactible and efficient in functional uses.

OPEN-UNIT

An open-unit can maximize the living area and serve multi-purpose activities.

A modular unit is able to slide in and out with a mechanism in order to extend and to increase the additional unit as we "ROLL" outward. The mechanism hides inside the room which we can adjust the unit manually. The additional unit is "LOCK" like a cantilever after the extension.

Each unit consists of fundamental functional spaces responding to resident's lives within a compacted space. When the unit has been extended, it serves more various purposes conveniently. Students can relax and live in a larger space. "CLOSE" alters to "OPEN" as we open up the unit welcoming a nice and chill weather inviting natural light, plus wind to the room.

AN ALTERATION EFFECT OF OPEN-CLOSE



A small space uses less operating energy consumption such as for heating or cooling inside the room.

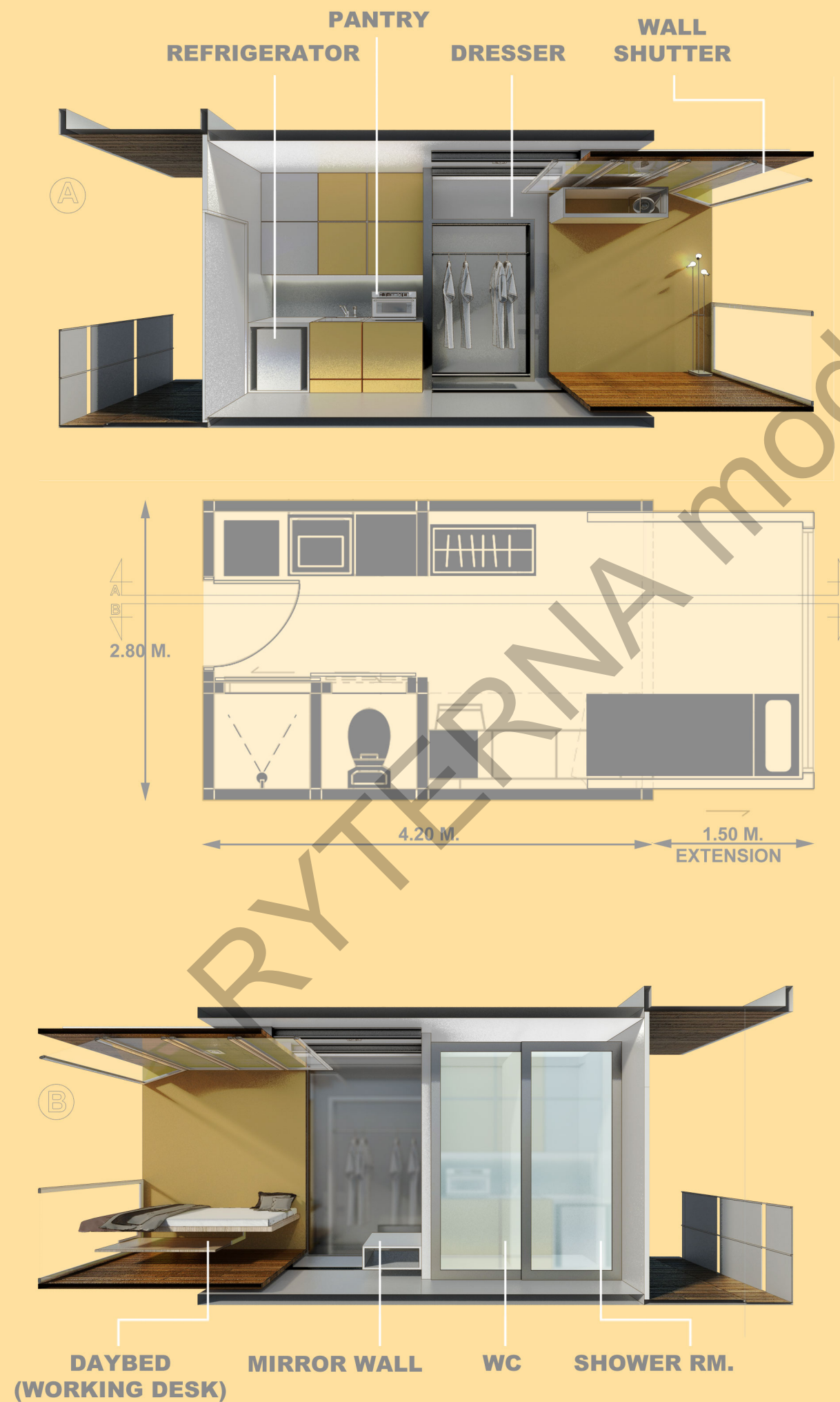
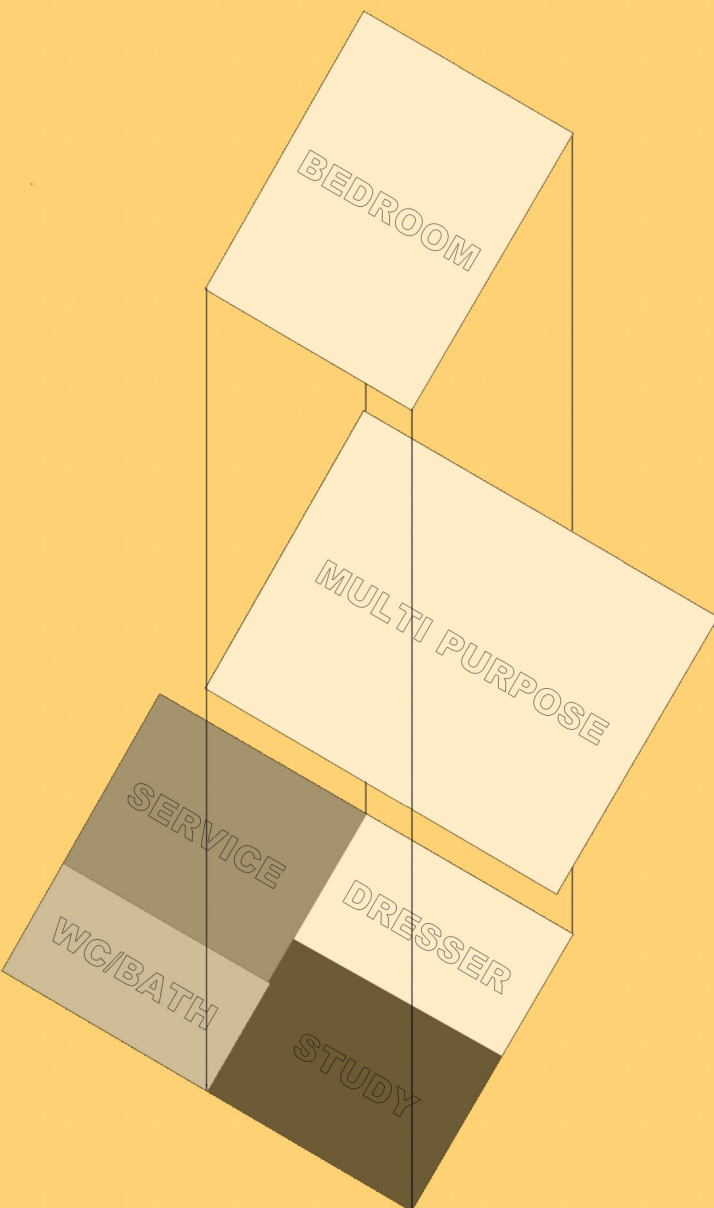


A close-glass wall can also slide up while the unit has been moved in order to receive the wind and light as needed.

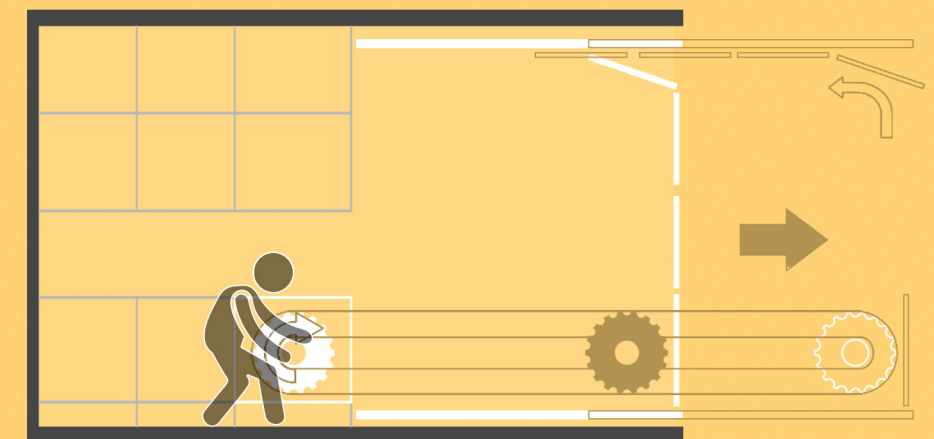
EXPAND THE INSIDE

Programmatic

One space-multi function Interior space is from overlapping of functional areas combined together properly. One space can serves multi-function at the same time or a space serves one function at a time but it can flip to another one as needed.



LOCKROLL



An additional unit fits within a main module locked by the structure. It can move out with a mechanism connecting both units together. A switch hides in the cabinet under the sink that the user manually controls the open-close system. When the unit is out, the shutter is slide up. At the same time, when the unit moves inward, the shutter is shut as closing unit.

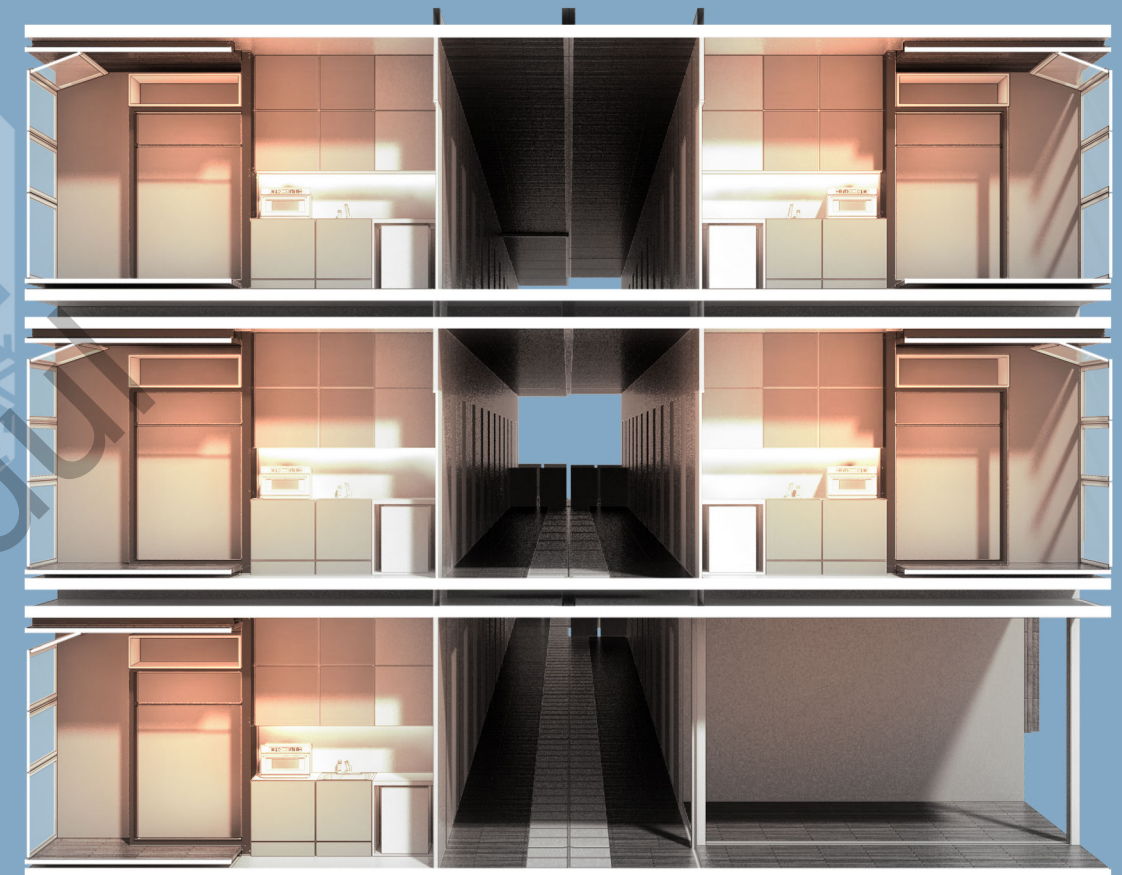


One space-Two function A bed flips up to a study table according to purposes

ROLL TO ROCK

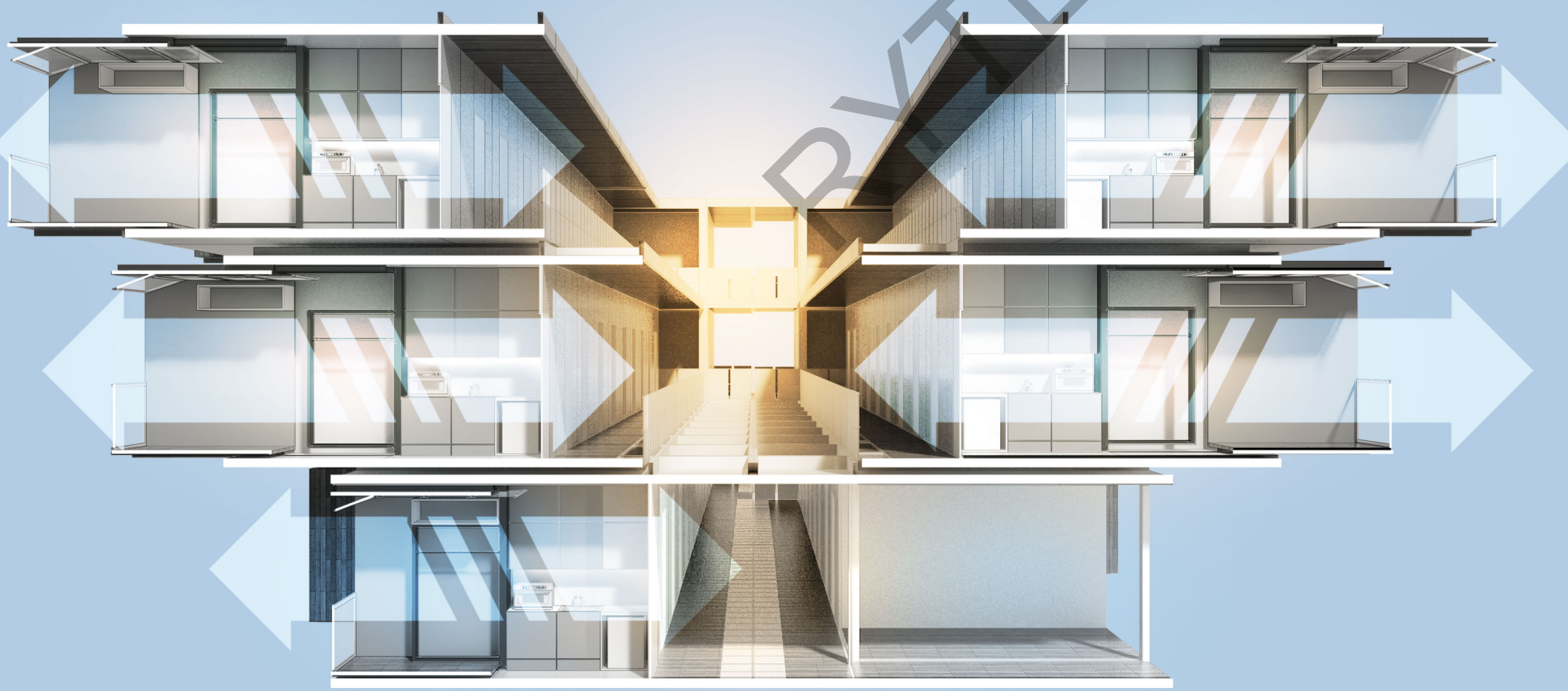
LOCKROLL

The dormitory will transform according to the season. It is shut and lock together during the winter season. Corridors are close together for preventing cold air when the temperature outside is freeze. This function saves the energy when heating system is operated. It makes space more packed which two sides of the building are connected.



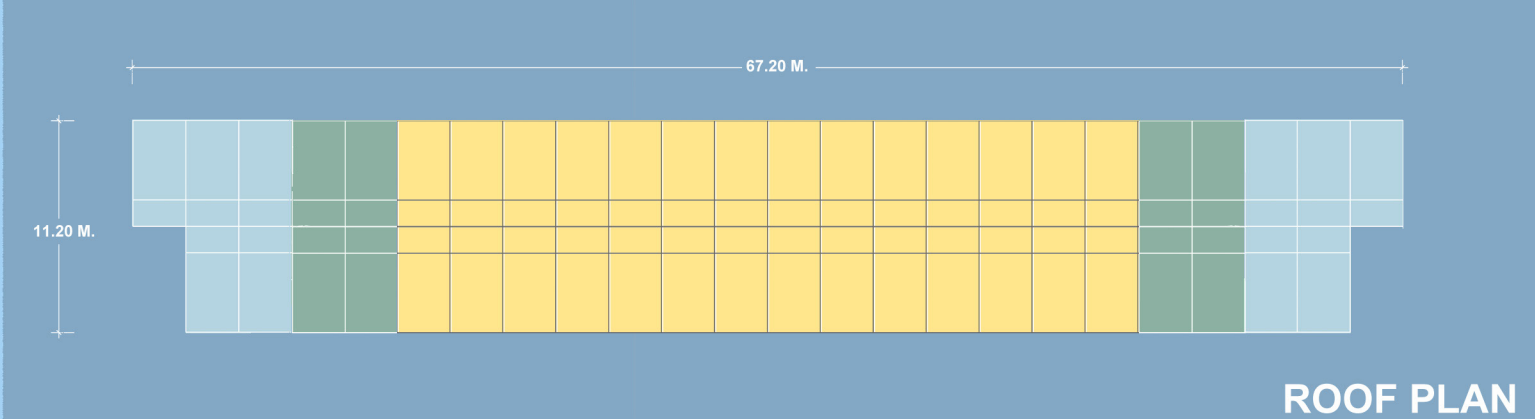
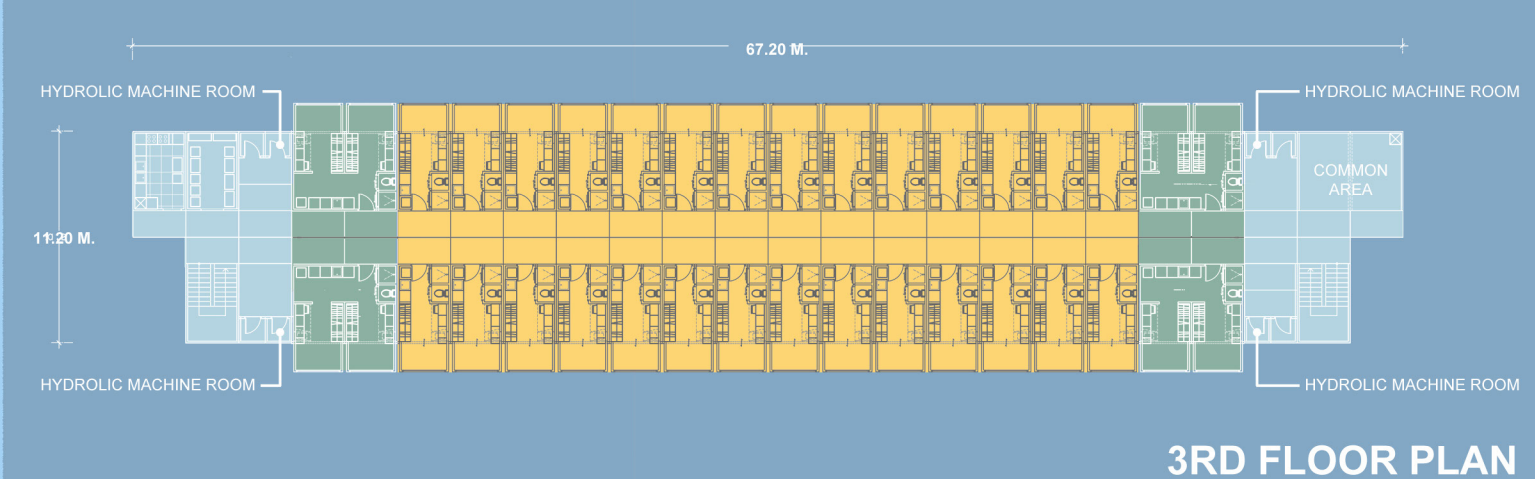
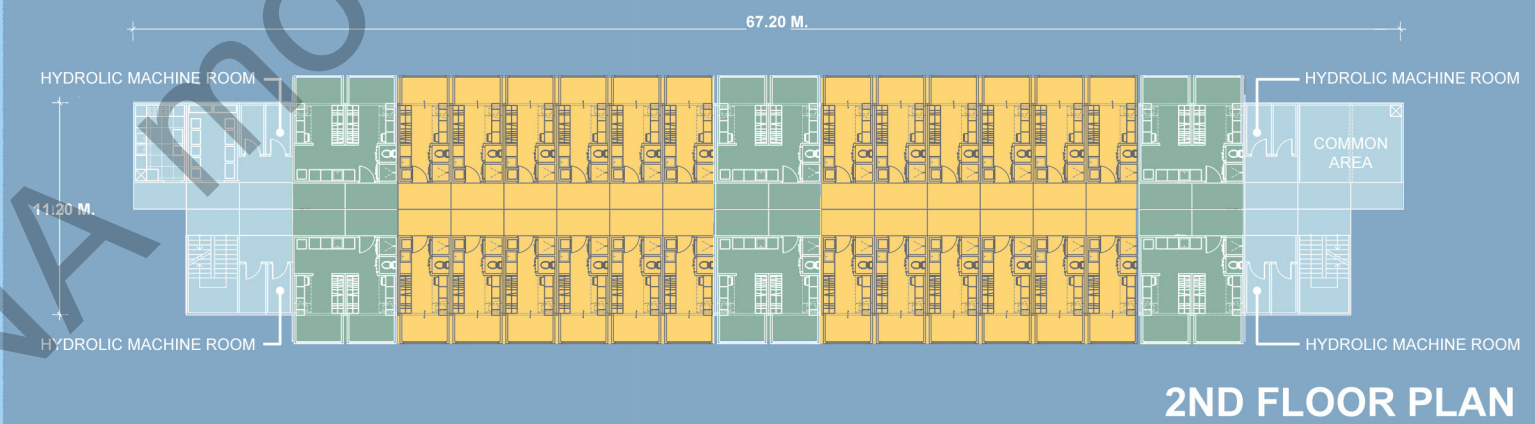
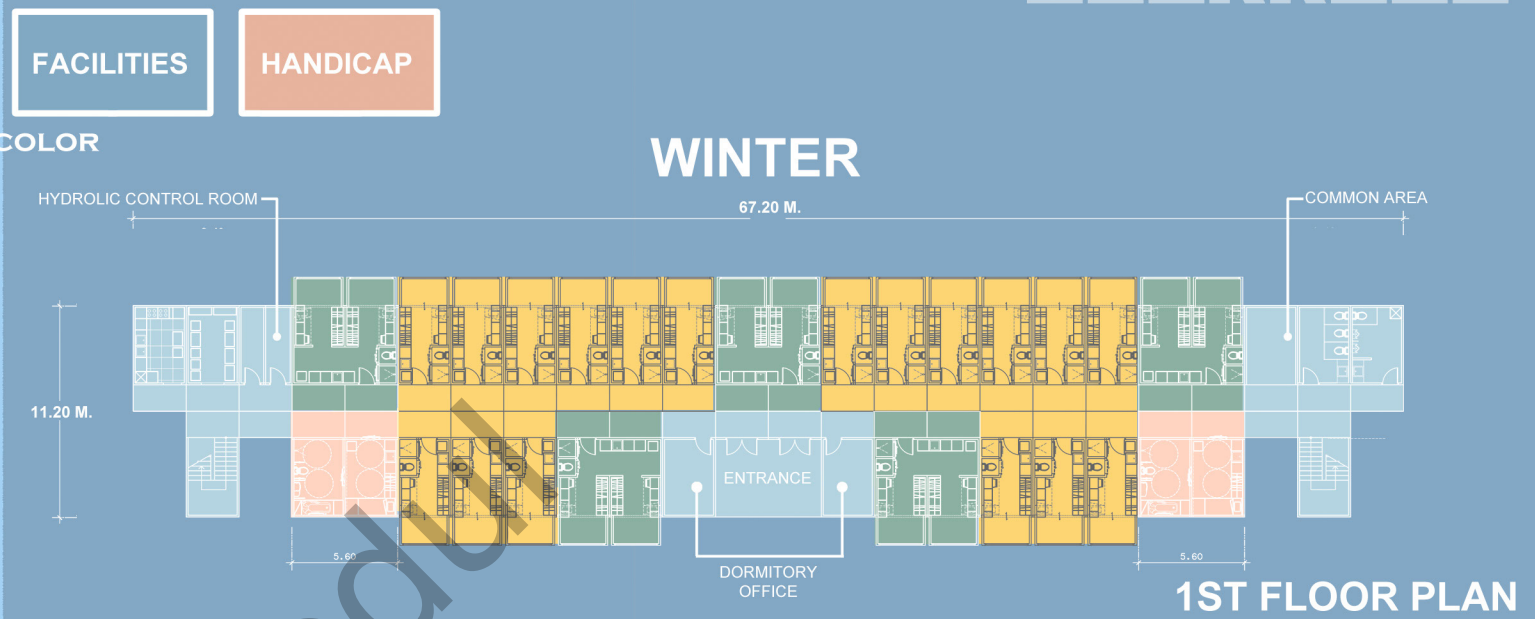
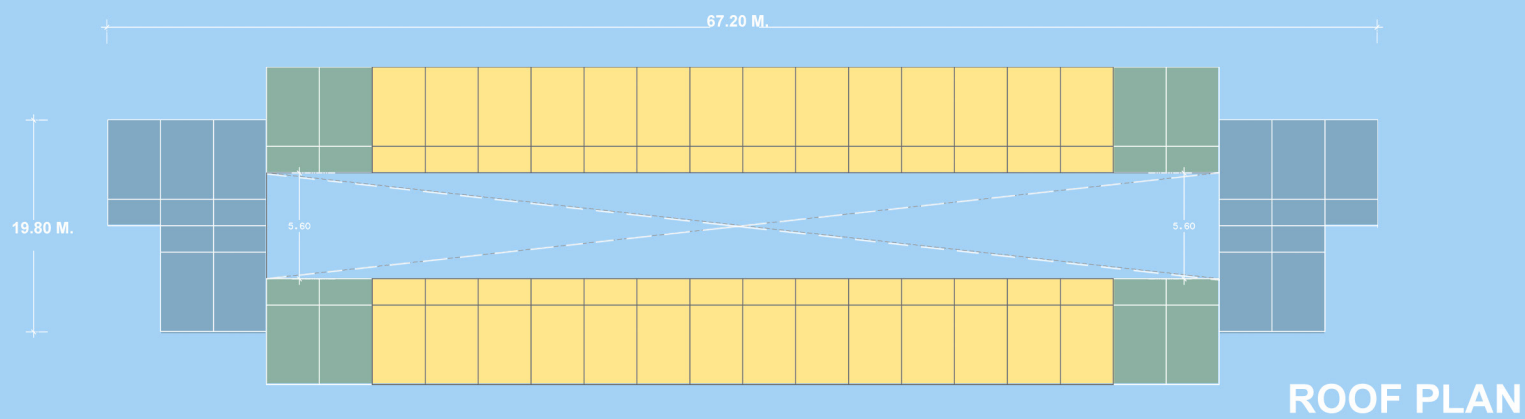
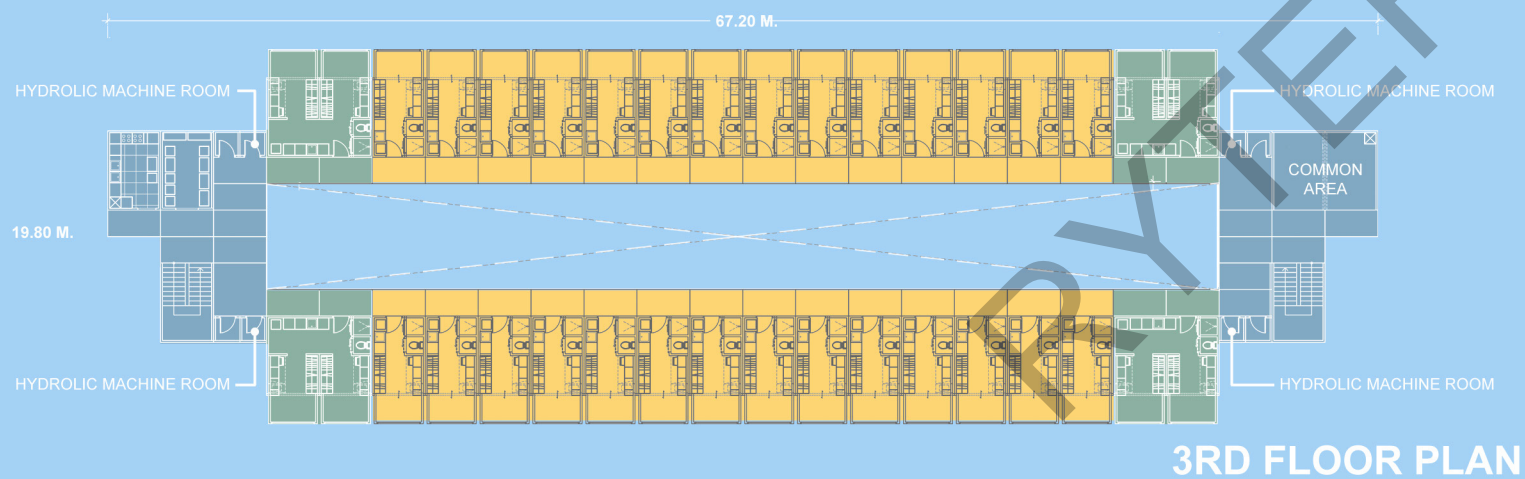
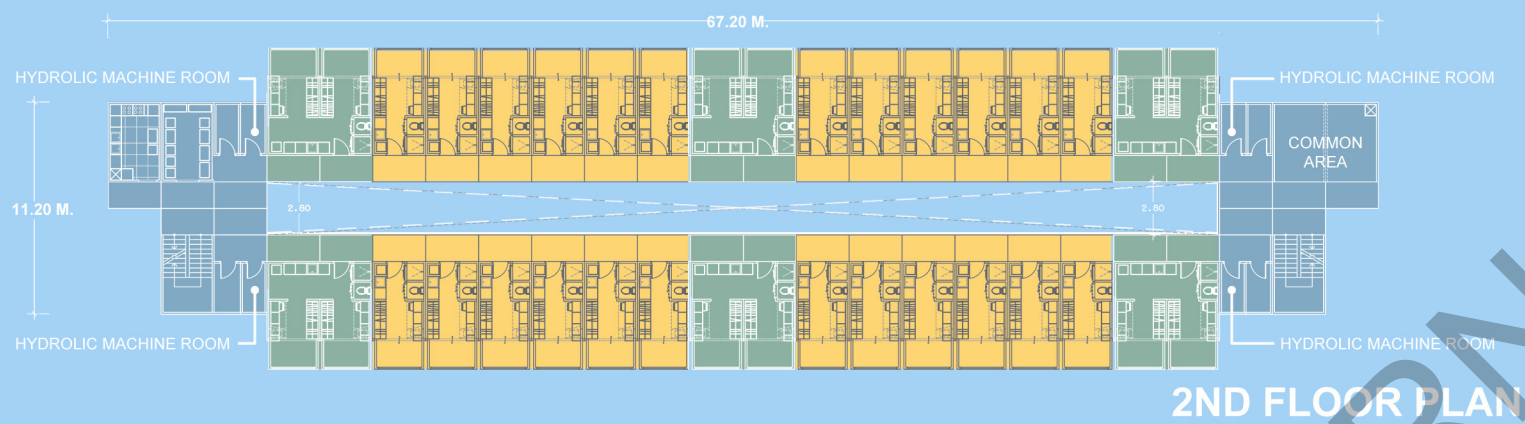
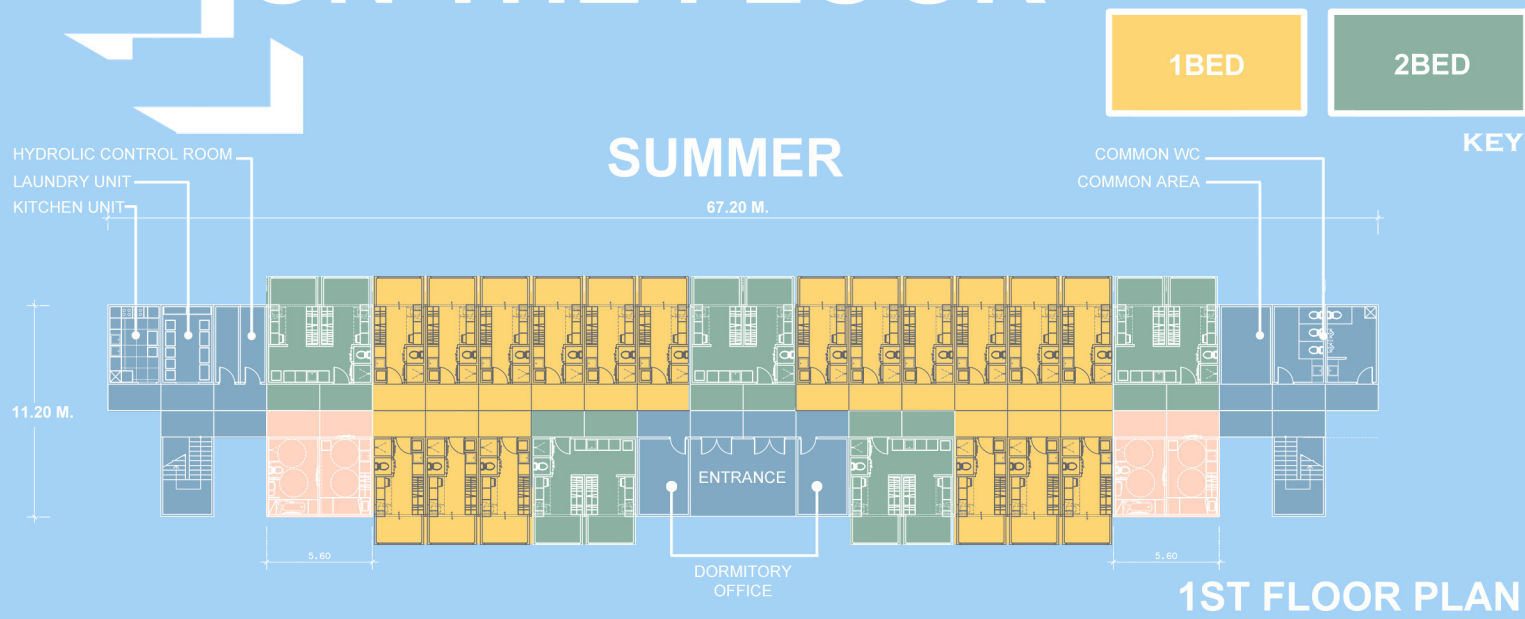
LOCK TO ROLL

During summer, the dormitory is open up at the center court by rolling upper living units with the hydraulic system controlling at the control room. Rolling units outward creates the building light well allowing natural light to shine and natural ventilation to flow within the building corridor. It makes a energetic and lively atmosphere as welcoming summer. This feature serves to reduce the need of electric lighting and save the use of energy. Furthermore, upper units spread outward more than lower units acting as shading devices for the lower one.



ON THE FLOOR

LOCKROLL





PUT IT TOGETHER

LOCKROLL

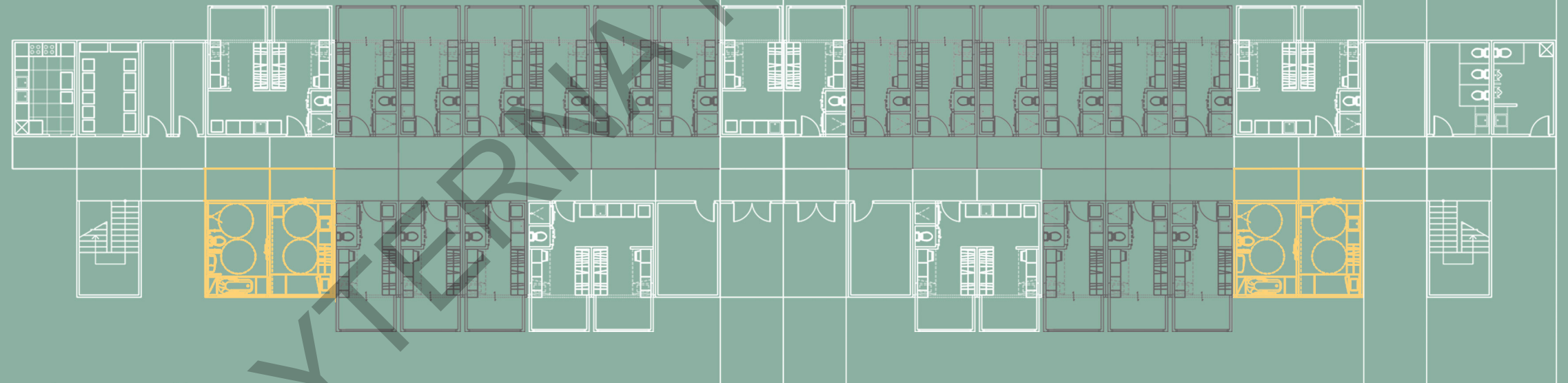
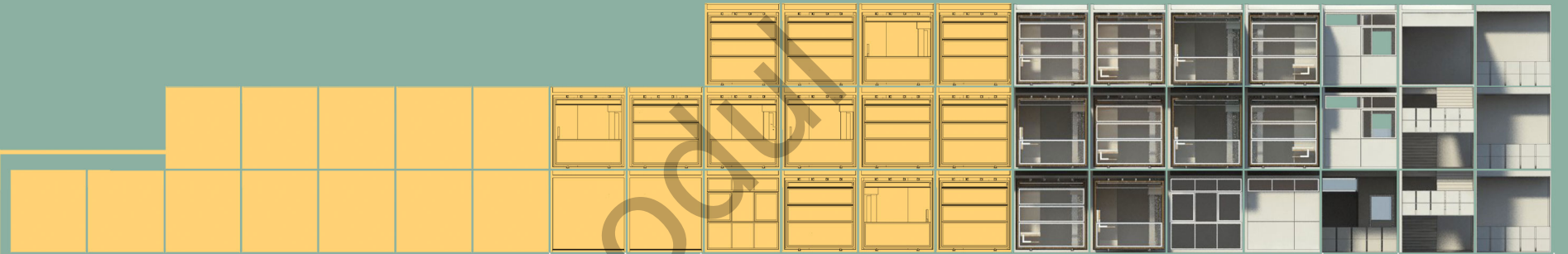
When structural modular units have been transported to the possible site, they can be constructed to a dormitory by stacking modules into 3 levels.

Each module interconnects to another module with joints and castors that can be slid to lock with the frames.

Facility units such as common areas and stairways are placed at the end of the building.

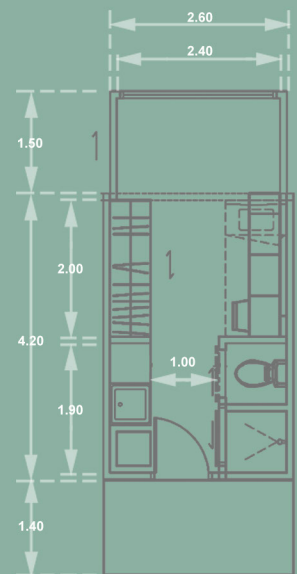


Roll the unit on top of each others

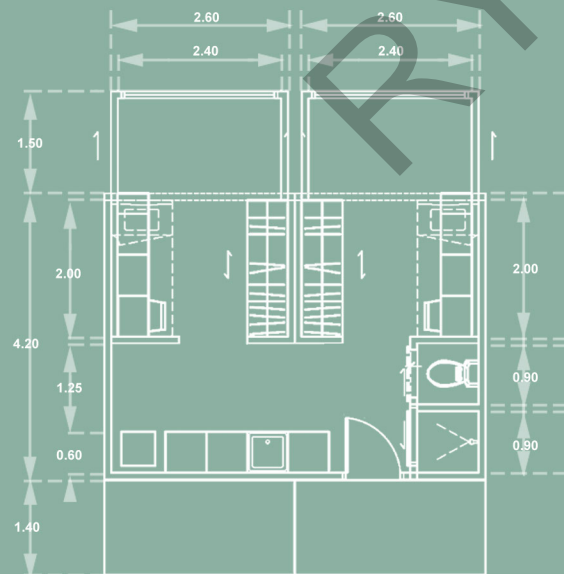


Unit Types

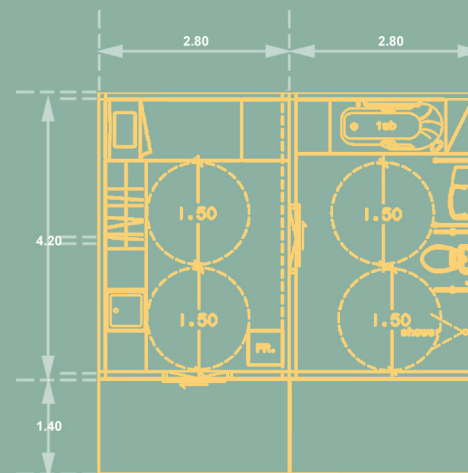
- (1) 1-bed Unit
- (2) 2-bed Unit
- (3) Universal Unit



1 bed unit



2 bed unit



Universal unit

One bedroom unit is a main module, which space areas are calculated from space requirement studies. After studying minimal areas required for each activity, some activities can overlap in the same area. It can transform to both functions as users need. This study and solution makes the unit small and compactible but still practical for living.

Moreover, a modular unit is able to connect to another one as two-bedroom units or connect to the others to perform as common areas. Various functional types are applied to only one type of module that is easy for manufacture and assembling.

FACE UP FRONT

LOCKROLL



Front Elevation



Back Elevation

