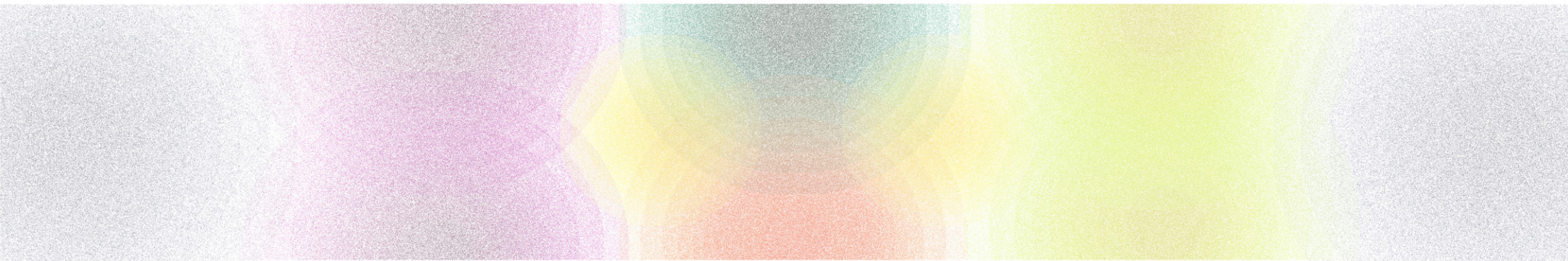


Fused units

Adapting a Panelház for creative use



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BME Department of Residential Building Design

November 2021

Introduction

Transformation of “panel houses” presents us with potential challenges and opportunities. In our case, the “black” panel houses in Kelenföld raise the question of how would this cell-type structure which incentivizes solitary life, be utilized to encourage communal living.

The given task is to transform a “part” of one of these black panel houses from its current function of two-room flats to a living/working space for 30 architecture students who have specific personal, social and professional needs.

The existing structure of these panel houses is arranged around a circulation core with the bare minimum of circulation space, with a cell-type room structure positioned longitudinally in sequence. These panel houses have a slab and wall load bearing system which creates difficulties when it comes to modifying the existing situation. When it comes to the appearance, these black panel houses in particular have a certain aesthetic sense to them which could be interesting to maintain.

The required program is to create a communal living space for 30 architecture students which not only includes accommodation, but additionally other functions related to their professional and leisure. According to our understanding of how students live, specifically architecture students, we created a design program that would encompass these varying needs.



Concept

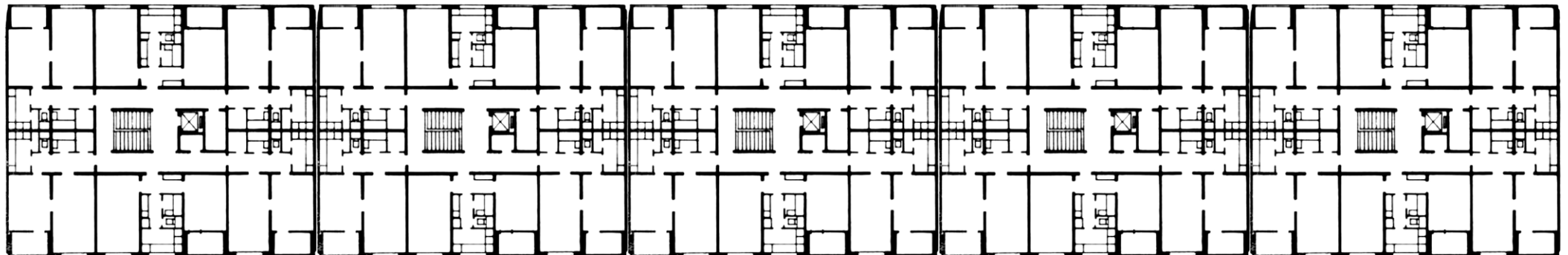
Considering our aim to shift the solitary pattern of living dictated by this type of spatial structure to a more communal and inclusive one, we reimagined the relation between circulation and primary spaces in this structure. We believe the traditional division of circulation and primary spaces is counterproductive to our aim in creating meaningful interaction between the students, therefore by merging the two and providing only the minimum of necessary individual space, we are able to create a branching system of connected spaces flowing into each other, that would have different levels of usage and traffic, which results in a spectrum of introverted and extroverted living.

Although the strict modular system of these buildings limits our freedom to a certain degree, their repetitiveness and homogeneity can be read as a non-hierarchic and polyvalent spatial system which is open to functional interpretation. This provides the perfect opportunity to design spaces with fluid functionality. Rather than assigning a specific function to every single space, we can create functional hubs that expand into and contract from their neighbouring spaces depending on different times and situations.

This time and situation dependent functionality is reminiscent of the architecture of a traditional Japanese house:

“there is no “circulation space” as we understand it; connections are made between rooms, each room is an antechamber to another and names can be given to rooms based on the uses to which they are put at a given time of day.’ Furniture is mostly lightweight and movable. For example, beds are only brought out when in use; the rest of the time they are folded away. The fusuma allows the relationships between the rooms undefined by function, and the more fixed spaces of cooking, dining and garden, to shift according to the occupation of the house and the time of the day.”

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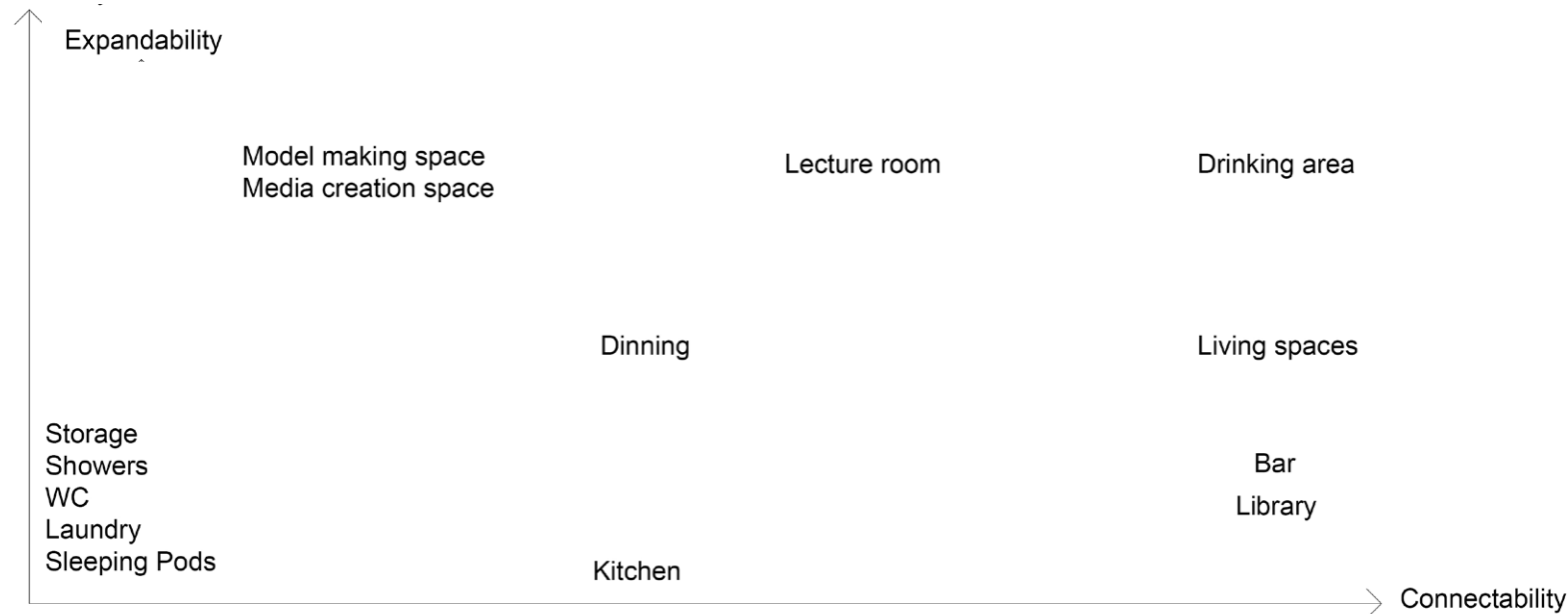


existing floor plan of the panel house, source: given task description

Approach

The description of the task pointed towards the idea that our “client” would take multiple submitted alternatives in mind and build a plan according to the advantages of these different solutions. Hence it seemed reasonable to explore our concept to its logical extremes and be rather uncompromising in its principles.

Following our concept, we can analyze each function according to its “connectability”, as well as the “expandability” of the function into a space. This process results in the following diagram:



As it is visible, on the two diagonal extremes of this diagram we have spaces which are completely fixed and closed off, and on the other side spaces that are rather unbound and freeform.

It can be concluded from the diagram that it would be beneficial to arrange the fixed and private spaces (the bottom left corner) on one side in a concentrated manner, but on the other hand this would result in a rather traditional zoning of the functions which would be contrary to our experiment in mixed use. Therefore, rather than pushing

these functions to either side longitudinally, we positioned them on the outer and inner boundaries of the structure (outer as in neighbouring the envelope and inner as in next to vertical circulation cores). This left us with an opening of spaces in between these two edges. (next page, top)

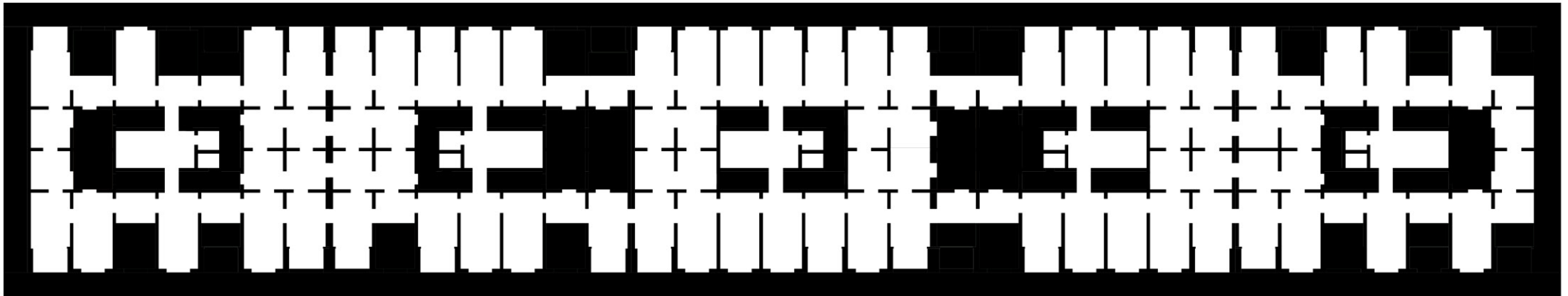
It is clear that the most central spaces would benefit from the most connectivity, hence the position of the lecture/meeting hall and the bar/drinking area was decided. This means that the diagram below can be mirrored almost sym-

metrically in relation to our floor plan.

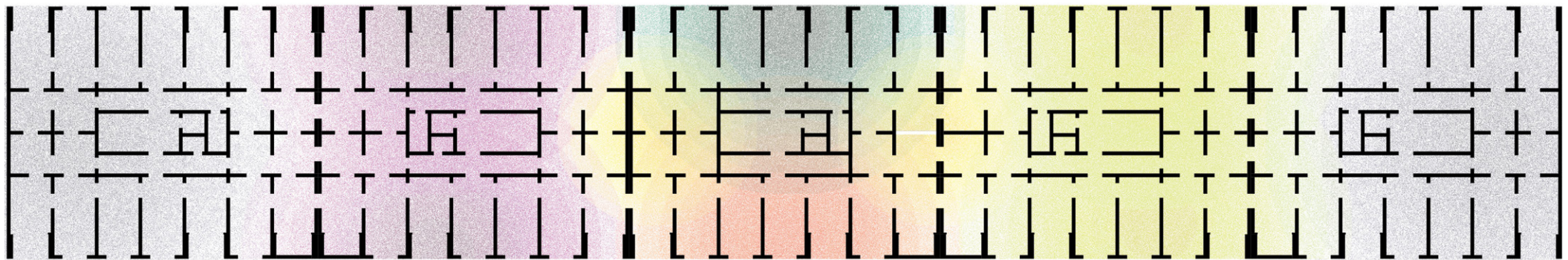
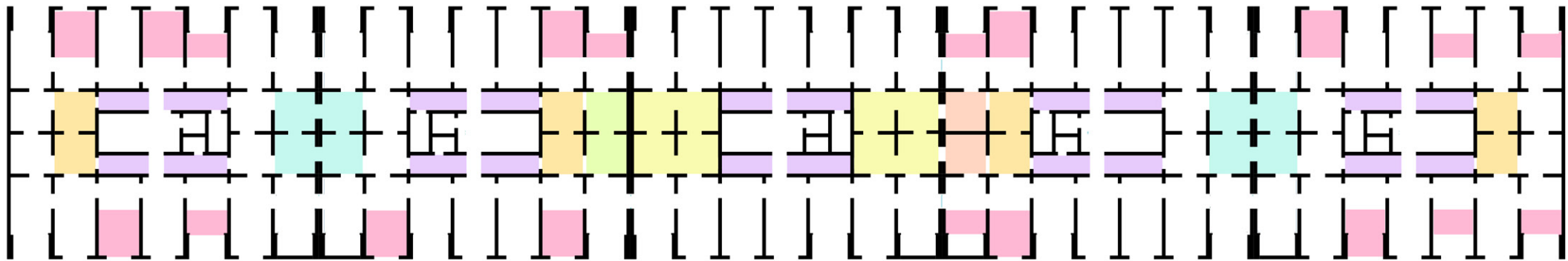
Additionally, it seemed inevitable that the kitchen/dining/living areas should be combined. This means they would be restricted to where the plumbing for the kitchen exists, but in positioning the dining and the living space transversally to the axis of the structure, other functions are able to flow through these units.

What was left were the model making and media creation hubs, which could be positioned perfectly in between the “fixed” spaces and the kitchen/dining/living blocks. In these positions, they would also have the opportunity to expand into the neighbouring spaces freely.

Intentionally, we avoided specifically assigning a certain space as “work space”, since the majority of these spaces could offer varying atmospheres for working. The students could work in their pods in complete privacy, or in a meeting hall with a lot of hustle.



● Kitchen unit ● Residents' WC/shower unit ● Guests' WC unit ● Library unit ● Laundry unit ● Storage unit ● Pod



● Model making ● Library ● Lecture/Meeting hall ● Bar ● Media Creation

Design

Overall, by distributing different functions throughout the whole structure, we are able to create the need to visit different blocks to access certain functions which in turn increases the overall interaction between the students.

While designing the spaces, we had a low-tech and easy to build approach in mind, with the idea that the students could build the majority of these interventions and additions. That's why we avoided overly complicated constructions and used materials that are affordable and easy to work with like OSB boards and polycarbonate sheets.

The used furniture could also be built by the students, and to increase the possibilities of flexibility, we designed them with modules in mind. For example all the tables would be modules of 60/120 cm and could be placed together to create larger surfaces.

Additionally, we considered the limitations of the existing load bearing system, which meant that we limited ourselves to enlarging

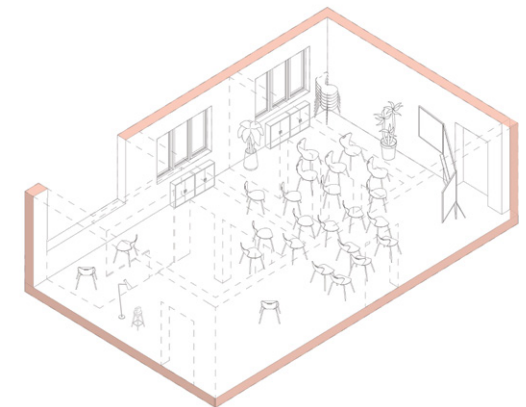
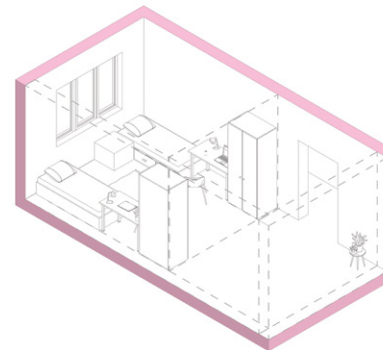
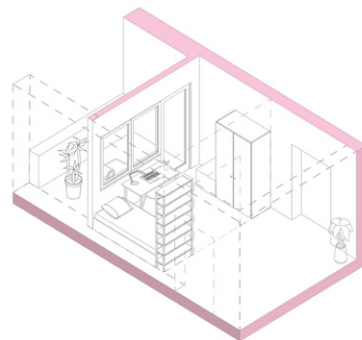
and at times creating openings no more than 1.2 meters wide. Regarding the exterior elevation, we managed to maintain the existing appearance since we consider it an asset of this building which is worth preserving.

Pods

The private pods are placed on the outer edge of the structure, therefore receiving sunlight and the view. There are two main types of pods, the smaller, single person pod which has direct connection to a loggia, and the larger, two person pod which has the option of being divided into two separate pods, or be used as a twin room. In order to avoid blocking the sunlight reaching the neighbouring space, the entrance side of the pod is partly opaque and partly built from translucent polycarbonate sheet. Each person in a pod receives a bed, a desk and a wardrobe.

Lecture/meeting hall

This function is located to one side of the central entrance, hence it could function as a foyer-like space. It has the exceptional triple openings, which we believe to be justified in this particular case, since any other solution would severely handicap the functionality of a non-hierarchic meeting room that might serve guests in addition to the residents.



Media creation hub

Similar to the model making hub, the media creation hub is also positioned on either side of a staircase for the same reason, and includes its necessary equipment. The storage spaces connected to this hub could be used specifically to its function, for example as a dark room.

Model making hub

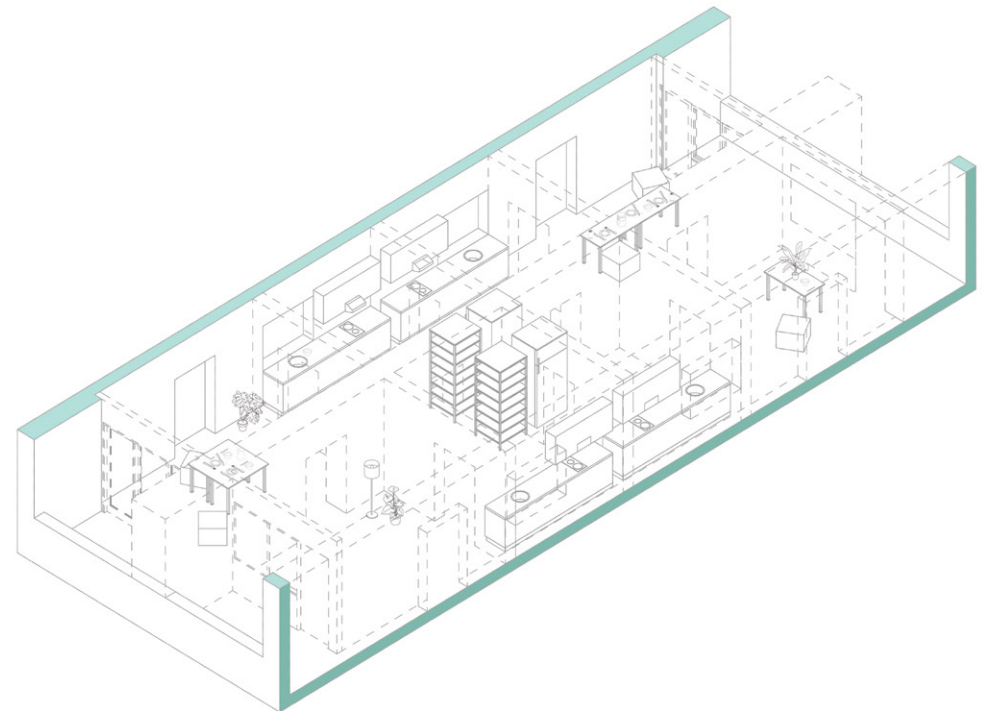
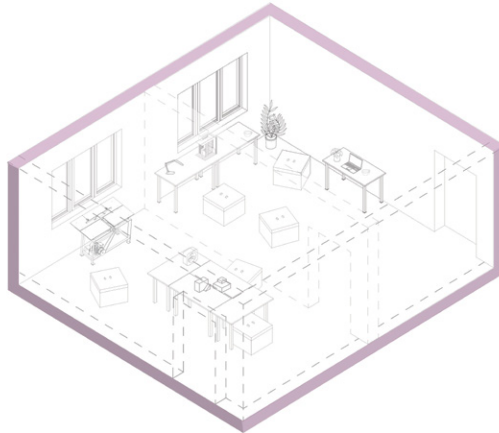
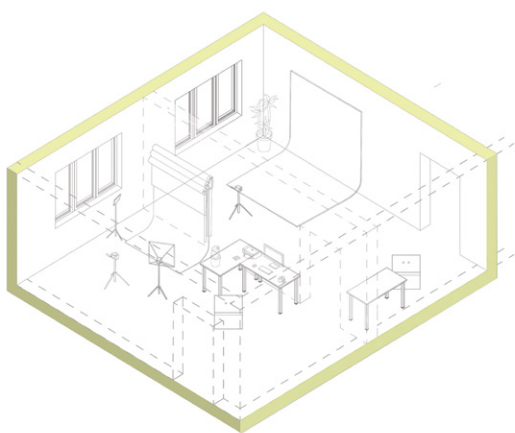
The model making hub is decentralized and located on either side of a staircase, therefore encouraging its own expansion as much as possible. The hub includes sturdier tables and storage for tools and materials.

Kitchen units

The 4 kitchen units are positioned together 2 by 2, which creates 2 large kitchen blocks on either wing of the structure. Joining the kitchens enables the residents to be able to easily cook together, which considering the central role of the kitchen in communal spaces, was a key issue in our design.

Dining and living space

The dining and living spaces are placed on either side of the kitchen units rather freely, since their functionality can alter depending on the time of day or even year.



Bar

The bar is placed on the other side of the lecture/meeting hall, which enables the drinking area to expand both longitudinally and transversally.

Library units

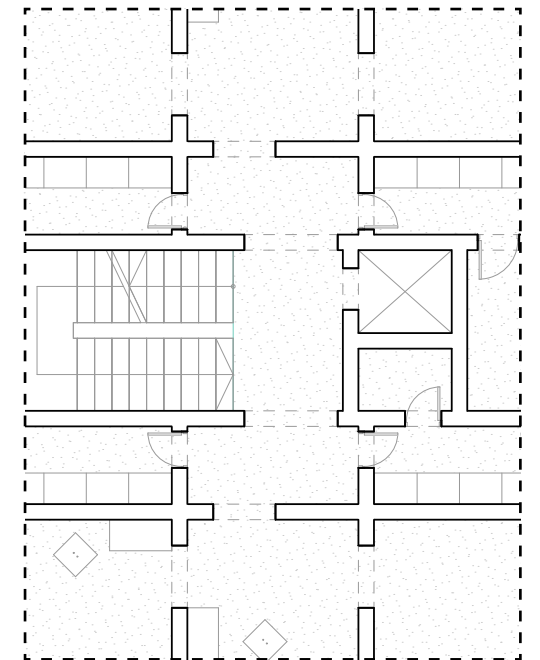
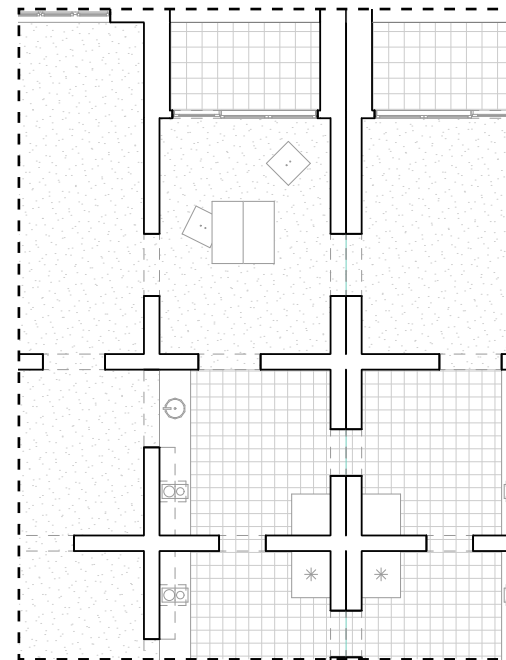
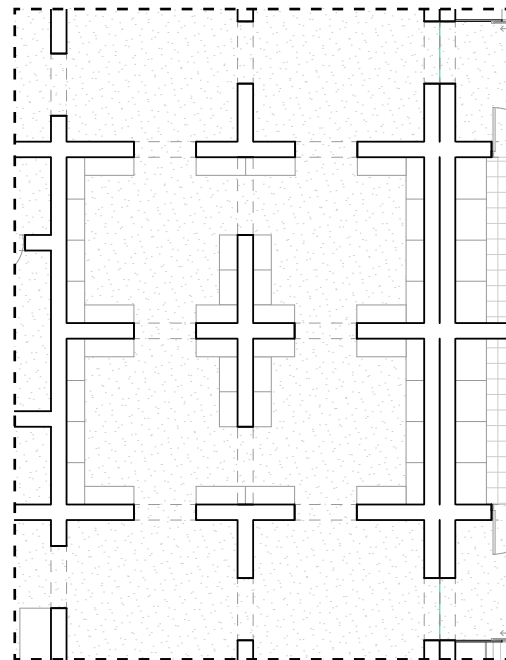
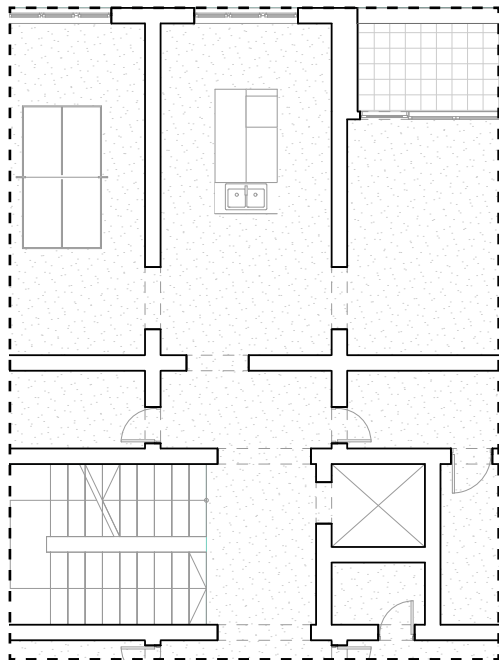
The two densely shelved units are located on either side of the central entrance. These spaces are mainly considered as hubs that one could walk through, pick a book and move on and not necessarily as reading spaces. Obviously the reading space can expand through the whole floor. Additionally they offer extra circulation space around the central entrance.

Work space

As previously mentioned, the work spaces are rather free and undefined. Ultimately, any “empty” space could be occupied and used as work space. To accommodate this, a simple stool/storage unit was designed that is standing on 4 wheels and can be easily moved around the space, working both as a seating surface as well as a storage for student’s belongings, like their laptop or pen and paper.

Storage units

The narrow corridors neighbouring the vertical circulation are transformed into storage units, filling in the previous concept of the corridor. These storage units can serve their neighbouring hub (e.g. model making space or kitchen) or be used freely depending on changing needs.



Final Thoughts

Residents' toilet/shower units

There are 4 toilet and shower units placed around the whole structure. Special care was given to position these units either on, or as close as possible to the existing bathrooms, therefore reducing the need to rearrange the plumbing.

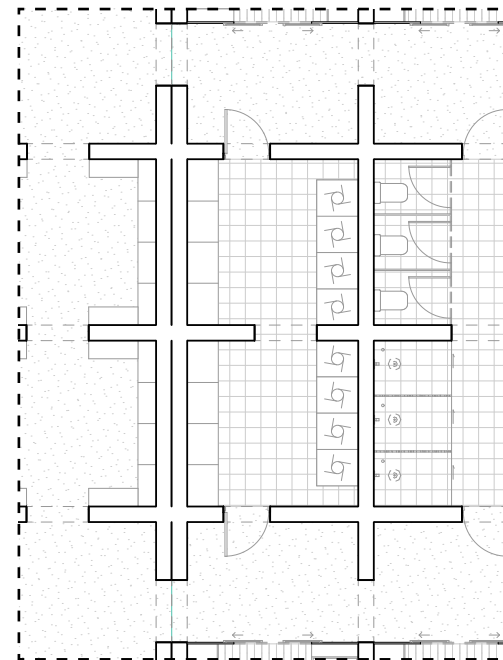
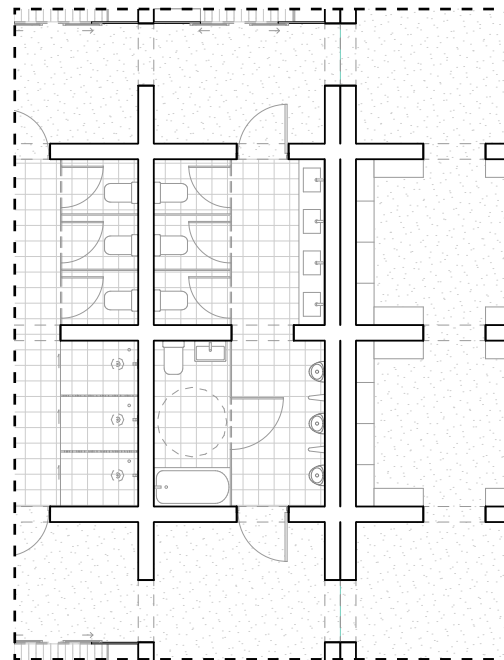
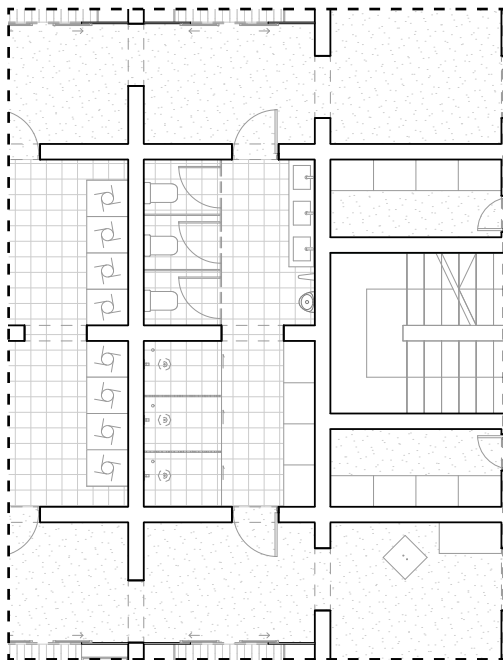
Guests' toilet unit

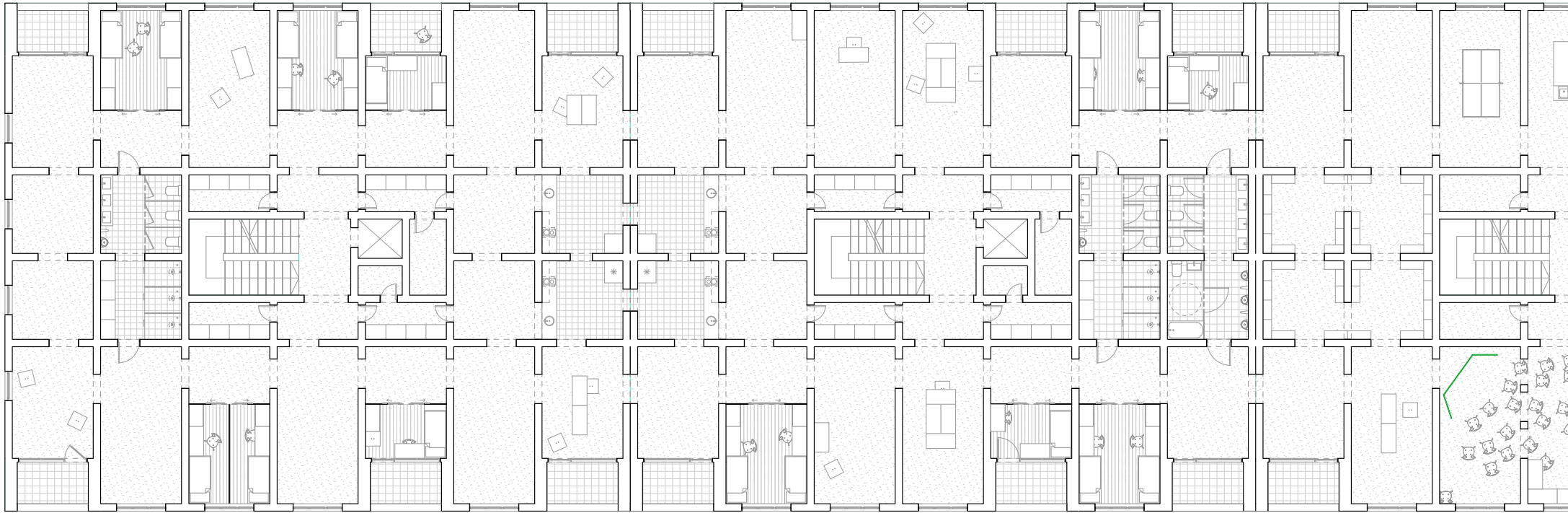
A toilet unit is located close to the central entrance of the floor, which also includes an accessible bathroom unit, equipped with a bathtub, so that it could also accommodate a resident with special needs.

Laundry unit

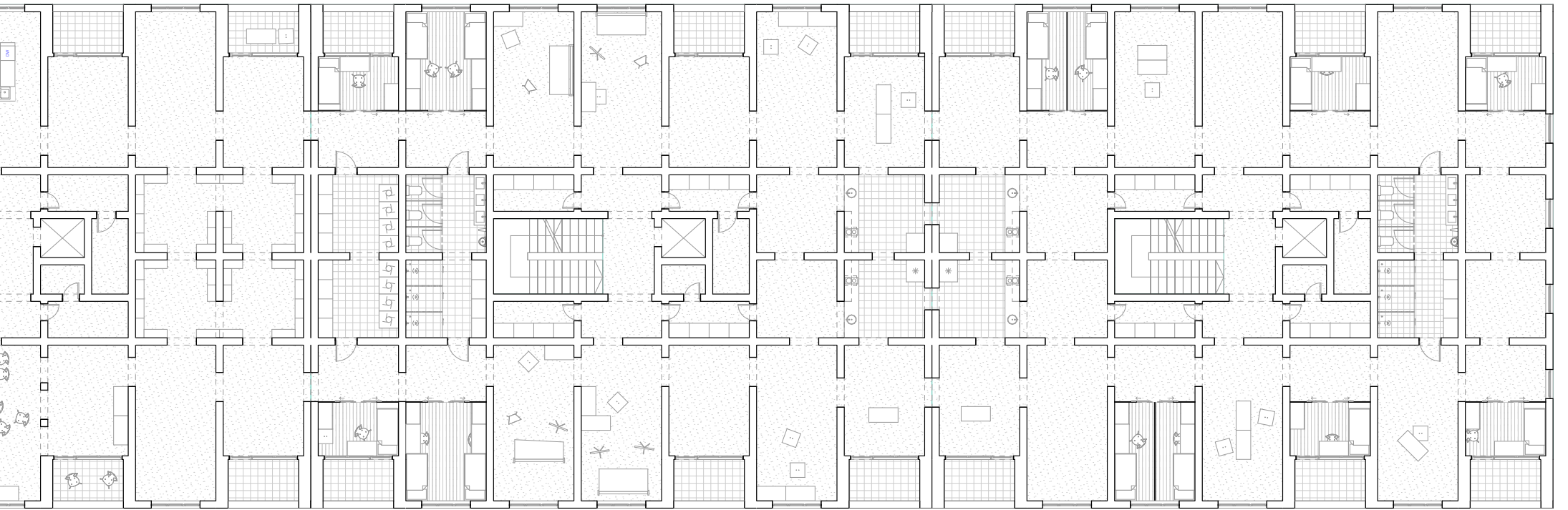
The laundry unit is located relatively centrally to the whole structure, and serves all the residents. It includes 8 washer and dryer machines as well as additional space for air drying the laundry plus some storage.

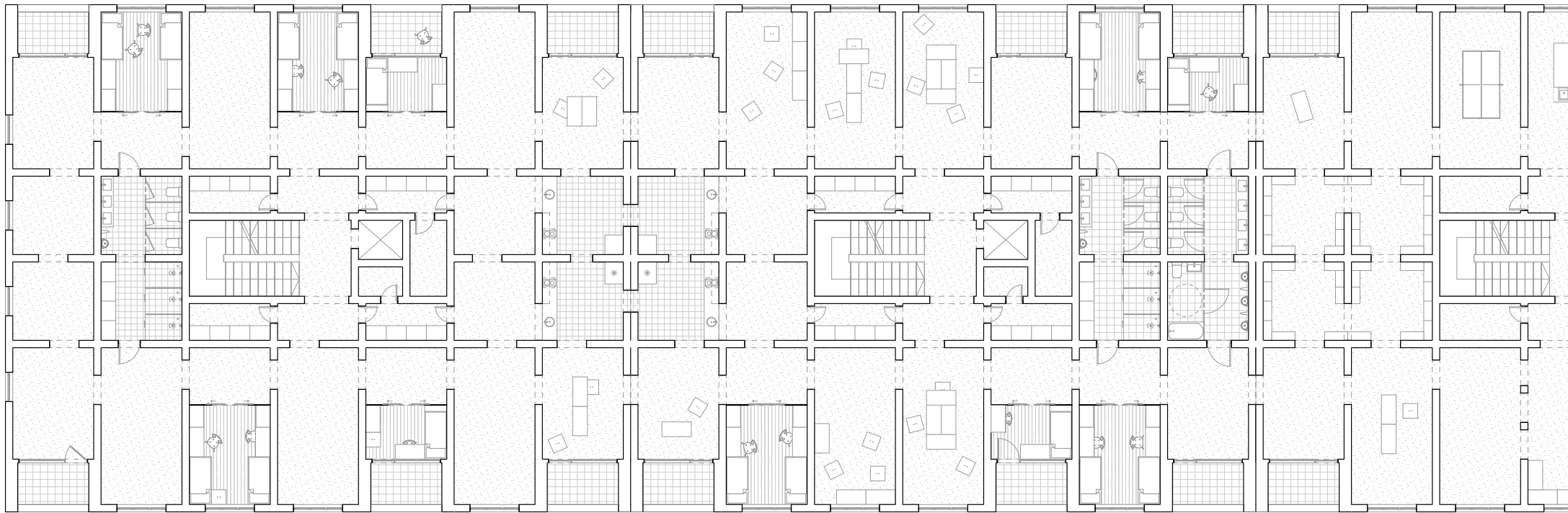
Through the design process detailed above, we were able to create an alternative that corresponds with the ideas we believe to be relevant to our contemporary lives. Yet it is worth considering the fact that when it comes to the adaptive reuse of existing architecture, all solutions exist on a spectrum that is the level of alteration that the existing structure undergoes. This spectrum pans between solutions with which the structure is virtually untouched, to structures that are heavily modified to the point of unrecognizability. We strived to strike a balance between what seemed to be essential to our concept while retaining what we find valuable in the given structure as much as possible.



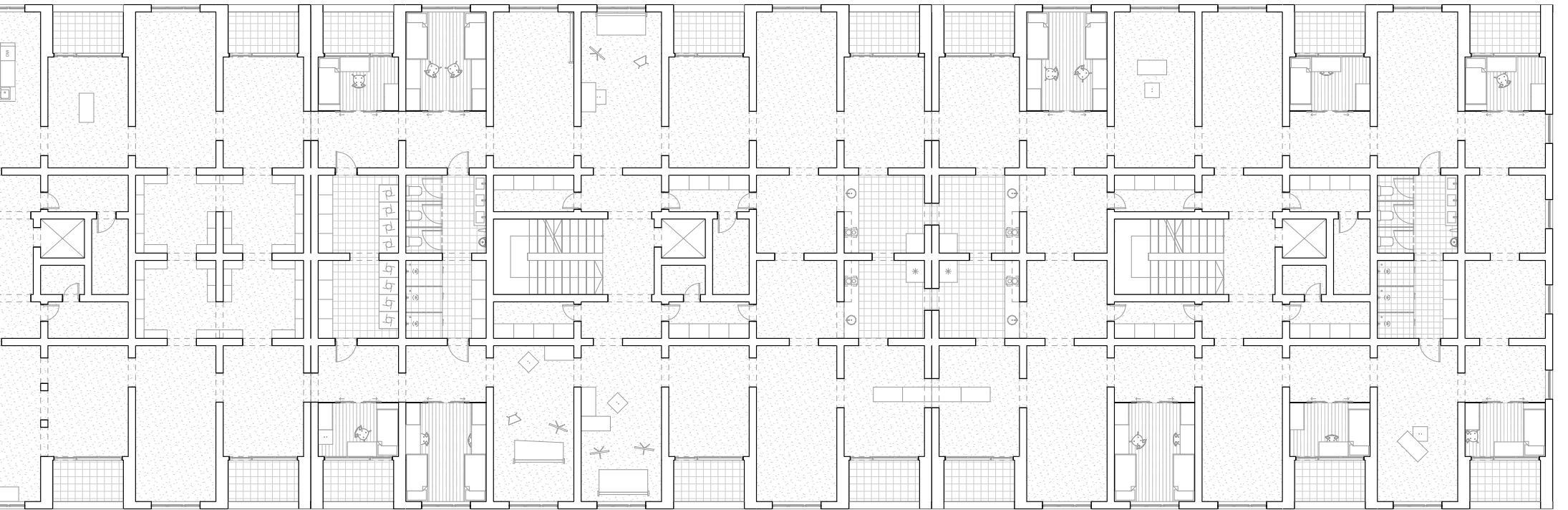


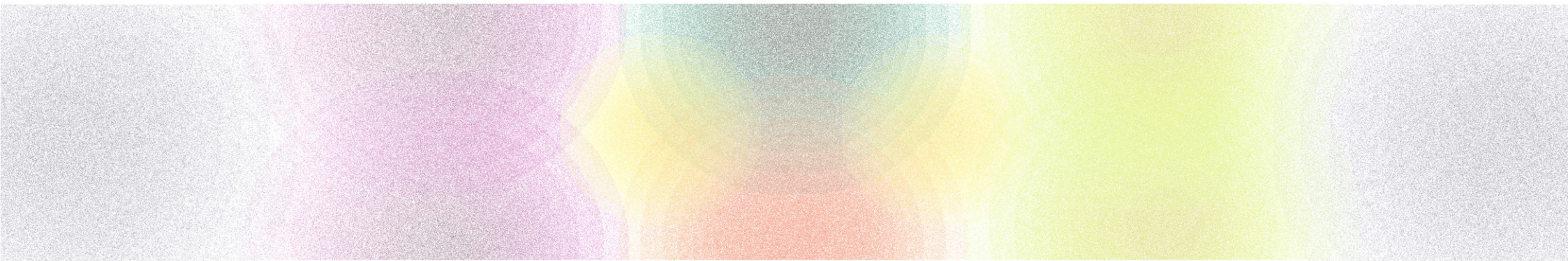
plan showing a balanced usage scenario through the floor





plan showing a concentrated usage scenario through the floor





November 2021

FUSED UNITS

Adapting a Panelház for Creative Use

Szakkoli 2.0

authors: hamdan nour - dadpour siavash

consultant: weiszkopf andrás

BME Department of Residential Building Design, TDK 2021.



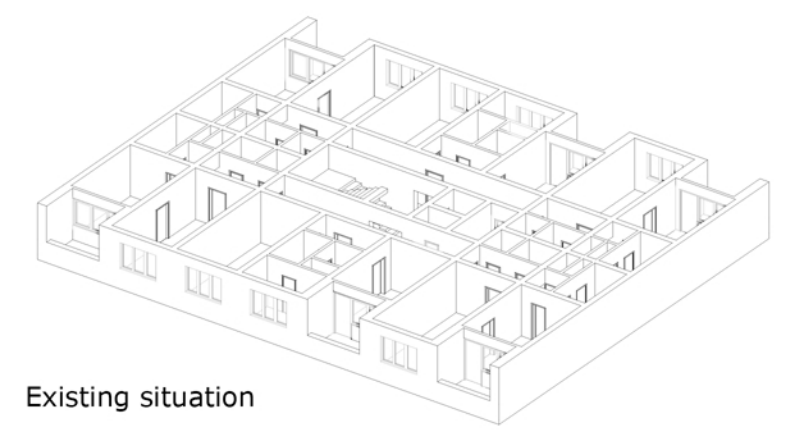
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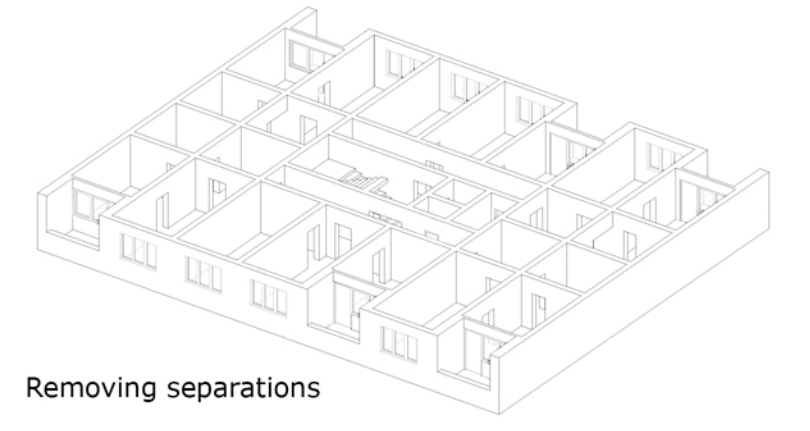
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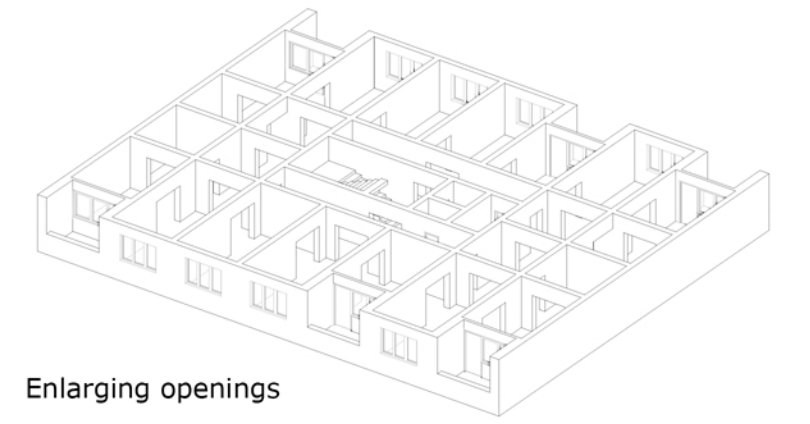
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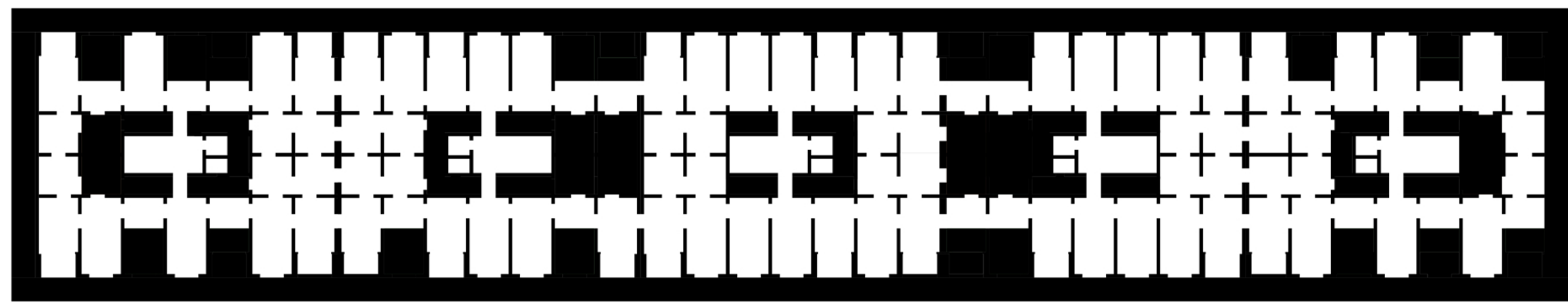
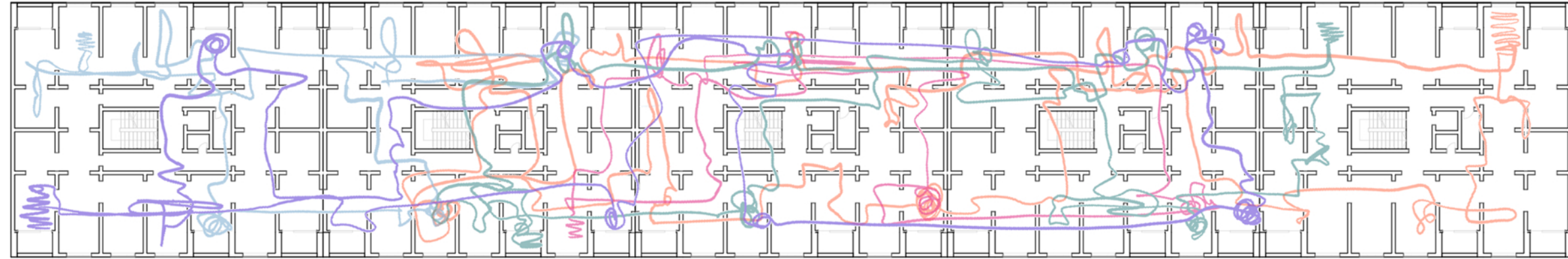
Existing situation



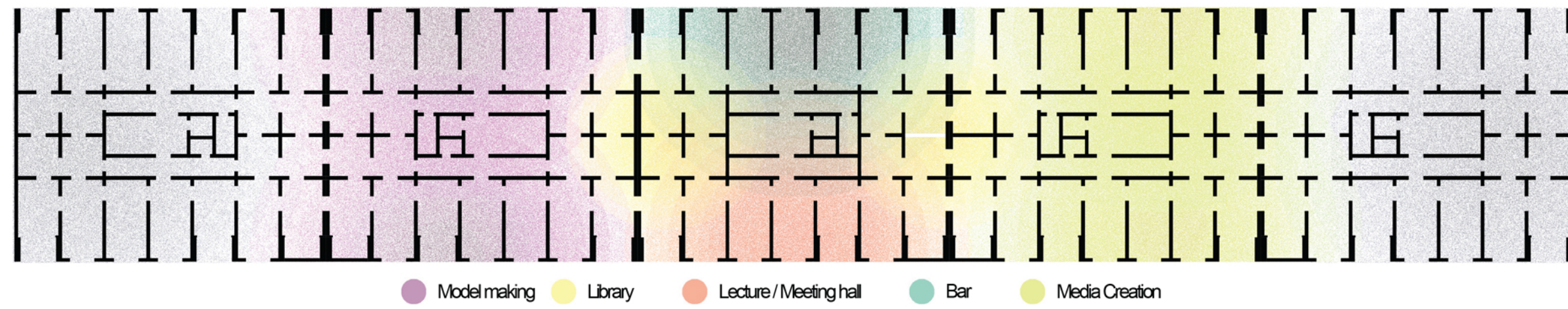
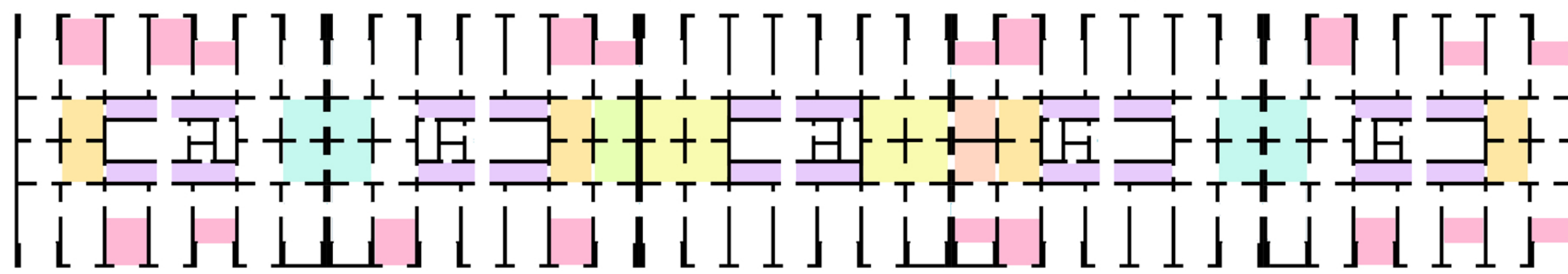
Removing separations



Enlarging openings

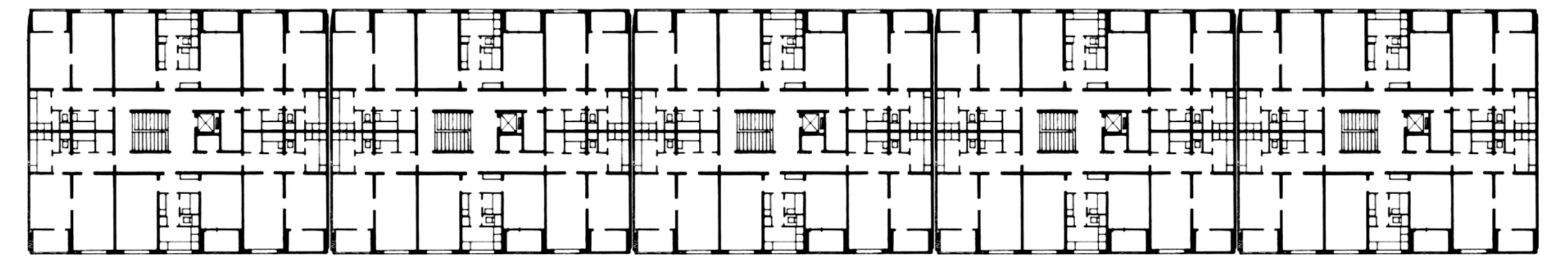


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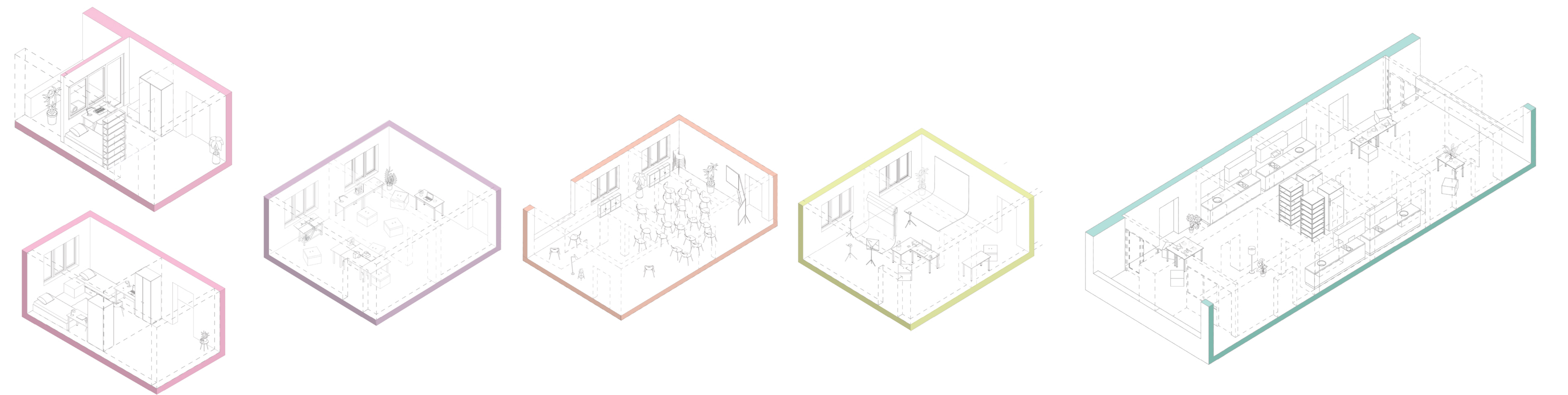
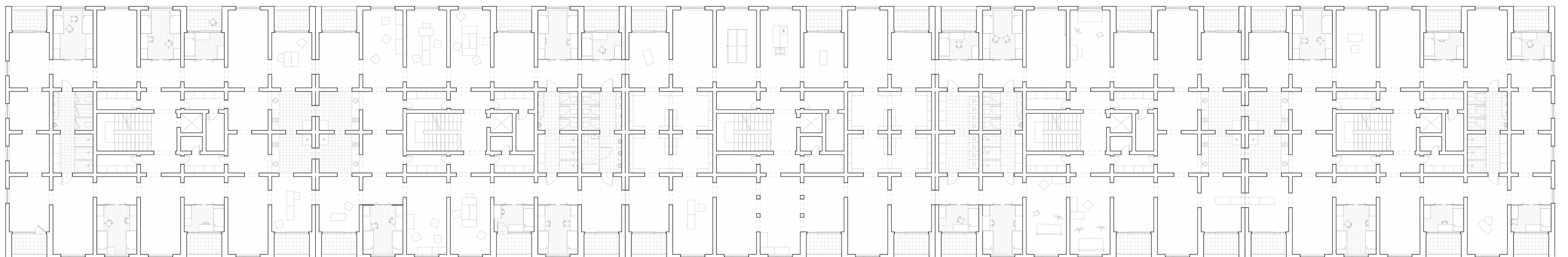


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