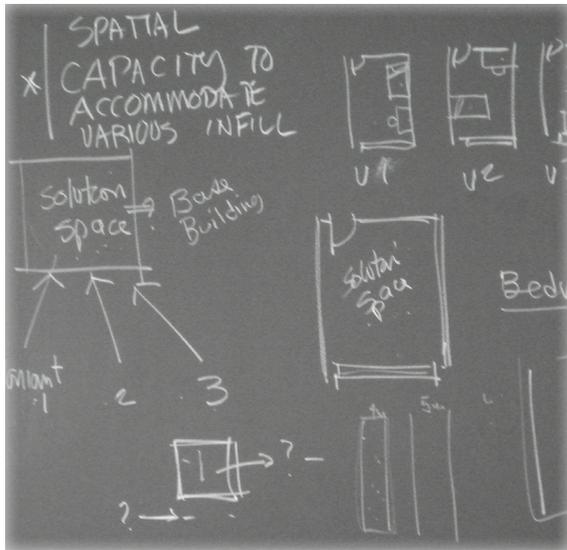


The built field is not a solo act



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OPEN BUILDING PLAYS

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OPEN BUILDING: AN APPROACH FOR THE ENVIRONMENTAL DESIGN

By Maria Chiara Torricelli

Professor of Architectural Technology, teacher of Environmental Design-Architecture Master degree

As part of the teaching of Environmental Design, which I hold in the second year of Master of Architecture, I thought it interesting to ask prof. Kendall to offer our students two days of “exercises” on the Open Building approach.

Why propose the Open Building Approach in Environmental Design? And why test it in the form of exercise?

To answer the first question we must think about what we mean by Environmental Design. The term started to be used in the 1960s in England; around the same time the conception exigentielle was asserting itself in France. In Italy both terms are used by the technological culture of architectural design.

Without going into reductive definitions (the Environmental Design encompasses studies, research and project experiences of many in architecture and not just in architecture) it's possible to say that some principles are still the common denominator of these works and experiences:

- The Knowledge of interrelationships between people, their built and natural surroundings
- the design of environments responsive to human needs
- the design as a process

Environmental design is necessarily multidisciplinary and interdisciplinary, and therefore the methodologies of the distributed and collaborative design are pertinent. In view of its complexity, the project is split up into domain-specific subproblems, and coordinated to achieve an optimal system, according to the collaborative optimization concept. However, as Kendall says, “*Not only is work distributed (...), but also, because the built environment is never finished, the distribution patterns of work stretch out on the time axis*”¹. The environmental design is a distributed process that evolves over time: an open design approach in which systemic approach and creativity combine as interacting moments of knowledge, reflection, decision, evaluation and action.

The importance they have always had in creating concerns regarding the relationship with the natural environment, and today the out

coming of these issues against the awareness of the limited resources of the planet and the consequences of growth and development, have highlighted in greater studies on environmental design, the aspects related to the relationship with natural resources, energy and materials. But Environmental Design goes beyond the sphere of the sustainable design, the eco-design, the bio-architecture, because it goes beyond the technologies of the project itself as an approach and a way of thinking about the project.

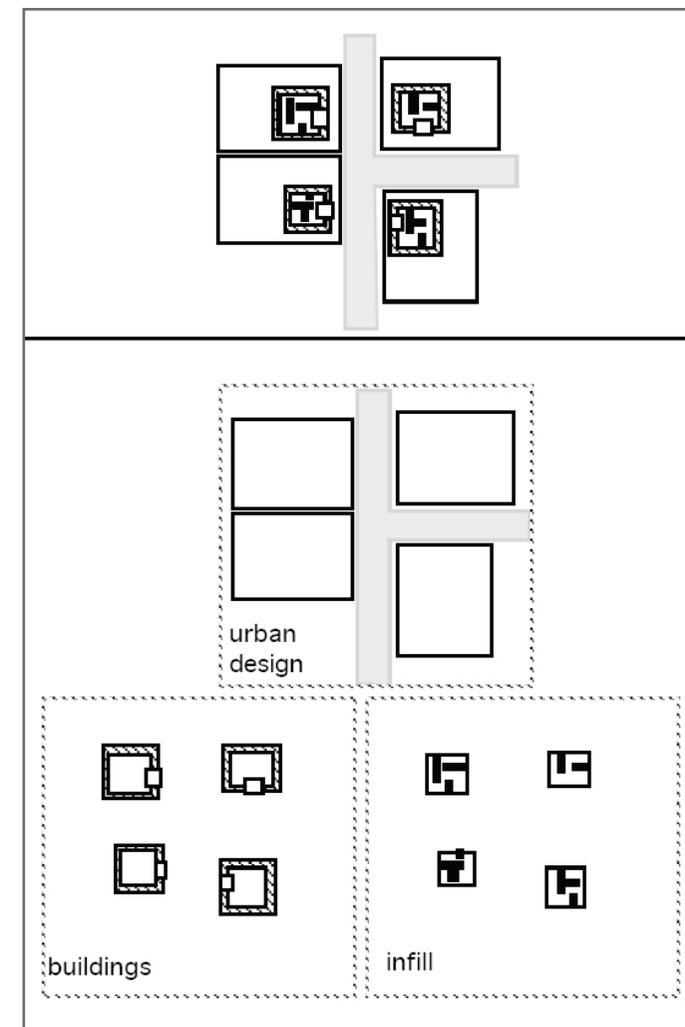
For these reasons I believe that the Open Building approach can be considered a declination of Environmental Design, as shown by the relevance of the concept of environmental levels related to the concept of distributed control in the Open Building Theory².

In the Open Building Theory “*levels describe the interrelated configurations of physical elements and decision clusters that occur within a larger dependency hierarchy. Environmental levels include: the urban level (tissue), the support level ('base building' or building), the infill level (fit-out), and the furniture level (furnishings)*”³. (Fig.1)

About the second question, the instructive usefulness of exercise, to build a way of thinking in the design process, is supported not only by Kendall but also by Habraken. Together they have made it a teaching method, supported by others working on the problem of design skills training. Bryan Lawson⁴ in proposing reflections on the forms of design thinking underlines the importance, particularly during training, of going beyond the “beautiful and also practically useful and well functioning end products” to increase those skills based on “technically and visually imaginative knowledge and ability to design”. Like Kendall, he asserts that to build a way of thinking it is necessary to practice, just as one needs to practise for sport and music. Therefore, if environmental design is first and foremost a way of thinking about the project as distributed design, to acquire this ability, moments for individual practice are necessary.

The work that we present here, proposed and led by Kendall in two days of workshops at our University of Florence, and developed by students of the Architecture degree course, accompanied by me, with Leonardo Zaffi and Nicoletta Setola, should be seen from this point of view. The exercises proposed focus on the relationship between the level of ‘base building’ and ‘infill’ and working with constraints established on the basis level in respect of the ‘infill’. Common to all three exercises is the search for alternatives within a set of hierarchical constraints. In the three exercises the job specifically highlighted the relationship between constraints and variations in terms of technical flexibility, territorial units, preferences and needs of inhabitants. Every student was asked to develop the exercise by drawing and designing, and to this end it was considered more useful to work without the computer.

Fig.1 - Three levels in the built environment (from: N. John Habraken “Uses of Levels”)



Once the exercises were completed and after a confrontation and a group discussion, Kendall asked questions to each student. The dialogue was held in English, with the enthusiasm of talking and expressing themselves with the language skills available, and questions and answers are listed in the student tables (please forgive the English!). From the answers given and from the carrying out of the exercises an aspect emerges among others, which will be more closely examined. Students are not accustomed to use drawing as a means of developing a design thought, and perhaps this was the first reason why variations on the theme were conducted with an elementary language. Within the constraints of the 'base building' they moved using elementary spaces coded with standard references, established practices, when the exercise invited them to try to experiment to a maximum their creativity within the environmental level and the assigned territory units: the 'in-fill' inside the building, the dwelling and the rooms. But even though timidly, issues and ideas emerged and were discussed with the possibility of articulating the built environment to harmoniously coordinate fruitful needs, technological constraints and architectural quality. And therefore I think we can say that the meaning of Kendall's proposal was grasped, as described in a sentence of Habraken:

*"Two more opportunities for a new architecture can be mentioned. Both flow from the consideration that a flexible building is not an empty skeleton, but an architectural environment shared by individual tenants. For the distinction between 'fit out' or 'infill' on the one hand, and the 'flexible building,' or the 'support', or the 'base building' on the other, the primary criterion is control, not hardware. ... The purpose of design for flexibility by whatever name is to enable individual control in an otherwise collective environment."*⁵

Notes

¹ S. Kendall, "Teaching Architecture Students to Work with Distributed Design. Studio on distributed design" www.bsu.edu/bfi

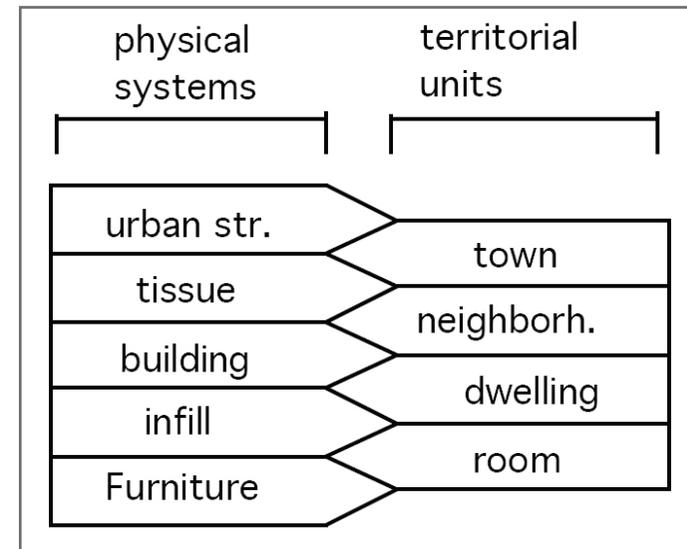
² N.J. Habraken, "The use of Levels" Keynote address Unesco Regional Seminar on Shelter for the Homeless, Seoul 1988, re-issued by Open House International, Vol. 27 no. 2, 2002

³ Stephen Kendall, OB Glossary, www.open-building.org

⁴ B. Lawson "How Designers think. The design process demystified", ISBN-13: 978-0-7506-6077-8 ISBN-10: 0-7506-6077- Architectural Press, ott. 2005

⁵ N.J. Habraken, Design for flexibility Towards a research agenda, Tatjana Schneider and Jeremy Till (2007) Flexible Housing, Architectural Press, ISBN 978-0-75-068202-2

The five level model of physical systems related to a territorial hierarchy (from: N. John Habraken "Uses of Levels")



Open Building (OB)

Open Building is the international movement based on organizing buildings and their technical and decision-making processes according to levels. In the West, Open Building was a partial successor to the Supports movement (N.J. Habraken and the SAR, Netherlands 1965). Open Building is also a phrase used to describe projects, beliefs, methods or products which support such organizational principles.

The Open Building Implementation network (www.openbuilding.org) was formed in 1996, under the auspices of the CIB (International Council for Research and Innovation in Building and Construction).

In the last few years, a number of developments in various countries suggest that the open building movement needs to both

continue its focus and to expand its arena of investigation. Residential open building is no longer a speculative idea of a few pioneer practitioners and theorists. It has or is poised to become mainstream.

Levels describe the interrelated configurations of physical elements and decision clusters that occur within a larger dependency hierarchy. In Open Building terms, the Support constitutes a higher level, while infill is lower, dependent level: should the Support change, the infill is inevitably affected, although the infill can change without forcing change at the higher Support level. Environmental levels include: the urban (tissue) level; Support (base building or building) level; infill (fit-out) level; and furniture (furnishings) level.

by Prof. Dr. Stephen Kendall, Building Futures Institute, Ball State University (www.openbuilding.org)

THE BUILT FIELD IS NOT A SOLO ACT

By Stephen Kendall

INTRODUCTION

The opportunity to work with faculty colleagues, PhD students and undergraduate students at the University of Florence offered the possibility to explore both open building principles and practices, and related teaching methods, in a new setting. Following an introductory lecture on residential open building (reporting on a number of realized projects as well as basic theory of open building), we embarked on three Design Plays, each building on certain principles and questions that I explain below. We had only two days, but it was enough to plant seeds and raise questions of method and architectural quality.

The fact that the built field is not a solo act seems obvious. Design acts are distributed and include professionals of various specializations, as well as laymen. The same can be said of the “making” of what is designed. The age of the “Master” is long gone, except for the smallest project. In fact, no single specialist is asked to design everything – the world is too complex, and risk must be shared. Tasks are partitioned - either by consensus or fiat, or by sheer unplanned necessity. Not only is work distributed to get a given “project” done initially, but also, because the built environment is never finished, the patterns of design distribution stretch out on the time axis, with many hands at work across many levels of intervention.

This fact means that the subject of distributed design should rightfully be a subject for architectural educators. The problem is that in teaching architecture students, it is not self-evident how to bring this subject into focus. This is because the studio – with rare exceptions – is an educational tradition steeped in the comprehensive individual act. Some teachers try to bound “design problems” by insisting on adherence to building codes, site conditions, precedents and so on. Some teachers offer opportunities for students to work in teams, which are exercises in consensus building or subtle or not-so-subtle games of dominance among students. When students from different design disciplines are asked to work in teams, there is often frustration, with a resulting tendency for students to follow those with strong personalities. Students

in interdisciplinary teams are given the difficult task to both learn their discipline and to interact with others who are also learning theirs, quite a different situation from seasoned professionals who work in teams out of a well-established knowledge base. In any case, teamwork is difficult in professional education because everyone – students and faculty alike – knows the University system must evaluate individual work – of both teachers and students. There is certainly great value in learning to build consensus building and work in teams, and in learning to work with personalities of different kinds. But while it is good to work with various constraints, the question of how to partition a complex design effort and thus distribute and coordinate responsibility is not well studied as a studio teaching method.

THE IDEA OF EXERCISES

The first task of a studio educator who wants to work with distributed design is to help students become comfortable with short design exercises. This is akin to practicing etudes or scales in music education, or doing warming up exercises in sports. In fact, all “projects” in architecture studios are better thought of as exercises. None (except the rare design/build project) are “projects” in the formal, professional sense of the word, leading to a real building for a real client under real legal and time obligations. Larger more philosophical meanings of the word “project” aside, the project in professional practice is all about the service of getting a design from shared image to detailed representation to built form.

For educators, understanding studio work as “exercises” means that, like in music education, exercises or practice routines are never mistaken for performances. Nor are exercises in composition confused with complete compositions ready for performance. The connection I am making between exercises and distributed design is that both involve partial work. Complete in themselves, both exercises in music and exercises in designing are one part of the performance or, in the case of environmental design, part of a design process leading eventually to an inhabited built field.

Distributed design means that the whole –whatever it is – is partitioned, each part being the responsibility of an agent. Therefore, as in doing exercises, the essential idea of learning to work with distributed design is to work on parts. This has to come naturally to both teacher and student, and it has to happen with discipline and sensitivity. This takes time, but it pays off.

It will be said that working on parts ignores the wholeness of reality, ignoring principles of ecology and integration. Some will say that work on an entry space to a building can't be done unless the same person has designed the façade and the floor plan, at the same time. Someone

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• Dr. Kendall is an architectural educator and researcher. Before beginning an academic career, he was a practicing architect. His PhD is from the Massachusetts Institute of Technology in Design Theory and Methods, where he studied with John Habraken and Donald Schön. He is currently Director of the Master of Architecture Program, directs the Building Futures Institute (www.bsu.edu/bfi) and teaches graduate and undergraduate courses in architecture and urban design at Ball State University in Indiana.

• Dr. Kendall conducts research, organizes conferences and think-tank seminars and writes and writes on the subject of open building, focusing on residential buildings and “change-ready” hospitals. He has conducted a number of funded investigations in both subject areas, and is now focused on the development of knowledge and technical solutions needed for the emergence of residential infill industries in technically advanced economies. He conducts open building workshops for advanced students of architecture and lectures to academic and professional audiences internationally. Dr. Kendall has published more than 30 journal papers, authored a number of technical reports and book chapters (most recently a chapter in Sustainable Healthcare Architecture – published by Wiley, 2007), edited a report titled Systems Separation: The INO Hospital in Bern, Switzerland (2007), is co-editing a book titled Design Strategies for Open-Ended Health Care Architecture to be published by Blackwell/Wiley in 2010, and co-authored a book on adaptable residential architecture Residential Open Building (Spon, 2000) that has been translated into Japanese.

• Dr. Kendall serves on the editorial board of Open House International, an international peer reviewed journal, and is joint coordinator of the CIB W104 Open Building Implementation (www.open-building.org).
•••••

will say that it is not a good idea for one person to design the building's core and shell or base building, while other people design the tenant fit-out later on. The argument is that wholeness will be sacrificed.

These arguments are a trap and are part of an ideology of centralized control as the only path to wholeness. They suggest that everything is seamlessly interdependent, which, in a metaphorical sense, is true. But practically speaking, without good task partitioning, every design move would require endless discussion and negotiation, since in any environment, control is distributed for the different parts and places over time. We would not want it otherwise.

On the other hand, there is no argument that partitioning a complex task can be achieved without shared values, assumptions, methods and processes. Without them, confusion and disjointed results are inevitable. This only begs the question of what is shared among designers – and the public – in the environment game. It is also important – like in practicing a musical instrument – to realize that just because you can do exercises well doesn't lead automatically to a stunning performance, or an environmental design of excellence. But without exercising, achieving excellence will be more difficult, if not impossible.

KINDS OF EXERCISES

In developing architectural exercises or plays, one question has to be what design moves can we practice, without implicating an entire world of design decisions at every move? This begs the question of the relationships and dependencies between the parts at hand in the exercises we decide to do. These are important questions and must be made explicit when an exercise is designed and students set to work.

I made a decision a long time ago to organize studio exercises following a theory of environmental levels (Habraken, 1998). As becomes clear in his writings, the built environment comes into existence and changes over time by human intervention guided by preferences and efforts to gain and maintain control. The built field experiences differential obsolescence – some parts last longer than others. This is another way to say that the built environment sustains itself by allowing its parts to change. Parts change because of decay, or, on the other hand, by peoples' exercise of control. While nature pulls down physical artifacts by, for example, weathering and earthquakes, human beings try to produce, cultivate and improve the artifacts they share space with. As long as there are many people, interventions will be distributed in some way; the relations of agents thus being defined by the parts they control.

An effort to understand how this happens, and how to manage change

and distributed design, were the subject of the three plays we did together. What follows are brief descriptions of each play and the results produced by the thirty students.

THE THREE PLAYS

Play #1: Generating variants sectors of varying widths

This play allows us to explore how to generate VARIANTS within a given form. Each form has dimensions, and is assumed to be on one floor.

Five "BASE BUILDING" forms are given. Three are one sector wide (Play 1a); two of them (PLAY 1b) have two sectors, one of which has sectors of different widths.

Each student is asked, individually, to generate at least two VARIANTS for each form. Make VARIANTS by deploying fit-out elements such as partitions, doors, cabinets, plumbing fixtures, and furnishings.

Pay attention to the question of the utility systems. After becoming familiar with the form and its capacity, I recommend strategically locating a plumbing point where pipes from the kitchen and bath attach. This PIPE SHAFT should be part of the BASE BUILDING form, but you must find a good place for it, so that it satisfies more than one VARIANT.

Also pay attention to the FAÇADE ZONE. This zone of 2 meters can be used for extensions, or just a garden space. Entry into the dwelling is thru these façade zones.

PLAY #2: Dividing a form into several territories and generating variants

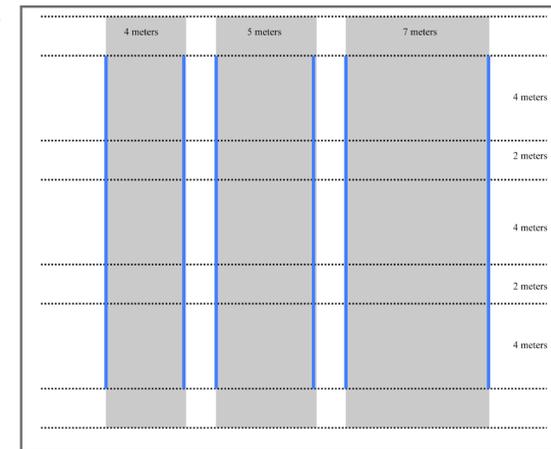
This is a play for two people in which each makes a variant in a given base building form.

To get started, explore several different territorial divisions, by adding form to divide the given form into two territories. Explore several variations of territorial division.

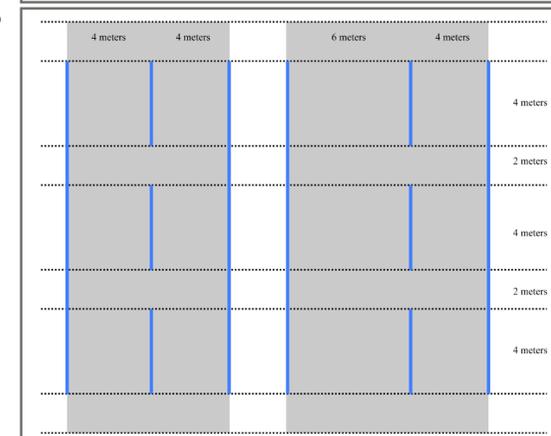
Here too, place a plumbing point. Explore whether given / fixed plumbing points might offer capacity for a) a variety of territorial divisions and b) in each territorial division, a variety of fit-out variants.

Again, the outer "zones" are where extensions of the façade may occur.

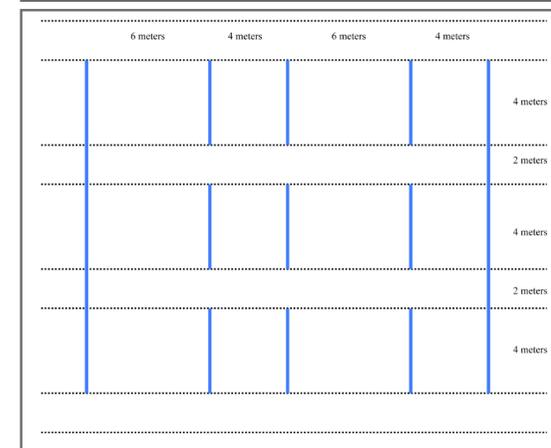
Play 1a



Play 1b



Play 2



Play #3: Separating Levels

This is also a play for two people. The exercise is to learn to see an existing apartment building as a combination of two levels of intervention and hence of two forms under control of different parties, and to see how the boundary between these two levels can vary. We will consider the distinction between levels determined on technical grounds (flexibility) and levels determined by preferences of inhabitation.

The buildings selected for this play each contain several units with different floor plans and of different size. Choose just one of those to work with.

To make this play meaningful it should be done at least twice: once for the 'maximum fit-out' variant and once for the 'minimum fit-out' variant.

You may take into consideration the constraints posed by vertical chases for sewage, electricity, water, and gas as those figure in the chosen building. In that case you may suggest to shift those or to add some to enable more freedom of design on the fit-out level.

The façade of the units should be part of your exploration. You may leave it as it is in your first minimum fit-out variant, but want to include partial or entire removal in your maximum fit-out variant.

The question as to where the boundary between fit-out and base building should be drawn is a real one. It can be argued that limiting fit-out makes it easier and less expensive to arrive at variant floor plans. Or that more base building offers a less neutral context and a more inspiring architecture for occupants to work in. Or it may be argued conversely that a more open base building is easier to build and easier to fit out. And that it will accommodate unforeseen uses in the future more readily. All such arguments are worth taking into consideration.

(Play #3 is derived from a soon-to-be published book THEMATIC DESIGN PLAYS, by John Habraken)

SOURCES

Habraken, N.J., 1998, *The Structure of the Ordinary*, (MIT Press).

Habraken, N.J., 2005, *Palladio's Children*, (Taylor and Francis)

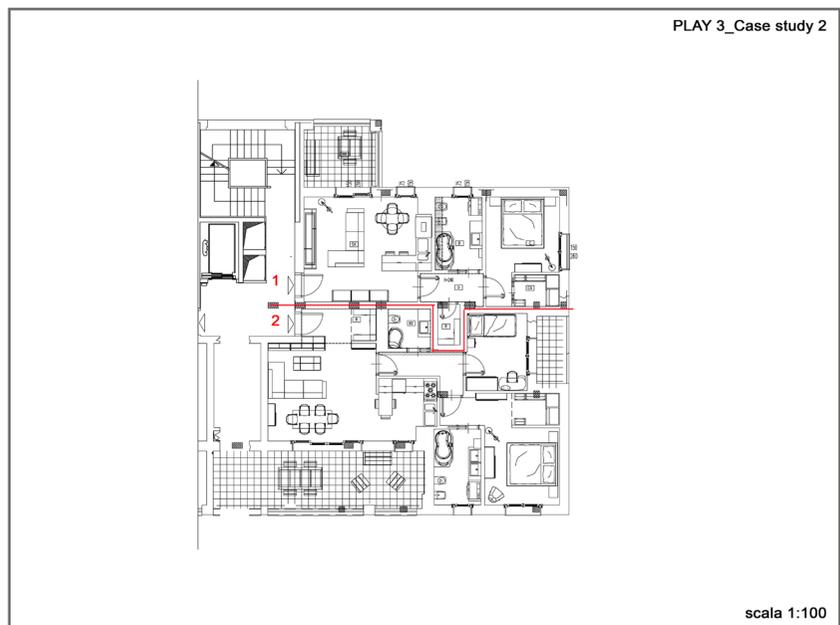
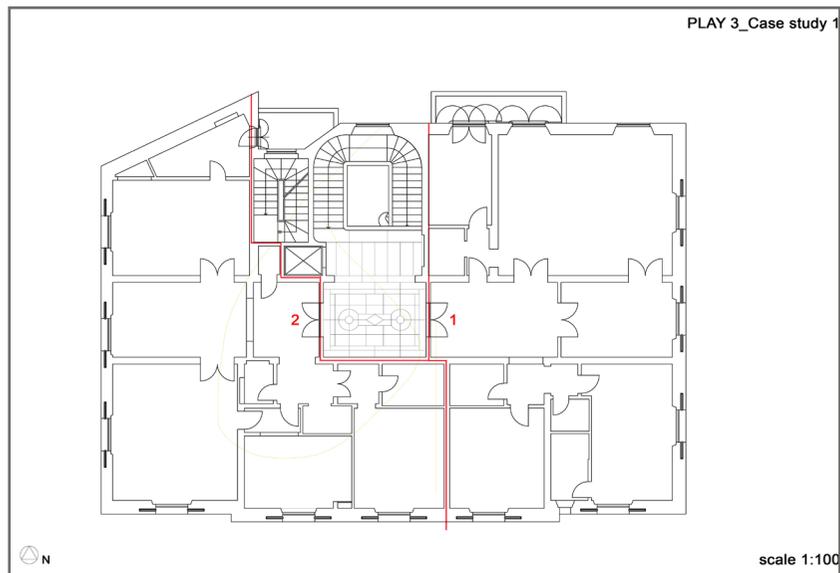
Habraken, N.J., 1996, "Tools of the Trade" (unpublished essays)

Kendall, Stephen & Teicher, Jonathan, 2000, *Residential Open Building*, (Spon).

Ashraf Salama and Nicholas Wilkinson, Editors. *Design Studio Pedagogy: Horizons for the Future*. Urban International Press, United Kingdom, 2007.

USGBC LEED Rating System (<http://www.usgbc.org>).

Zuk, Radoslav. "A Music Lesson", *JAE*, Vol 36, no 3, Spring 1983.



WORKSHOP DAYS

By Leonardo Zaffi, Nicoletta Setola

The workshop was held during two days.

The first day was introduced by a general lesson about the concept of Open Building applied to housing. The lesson had as main theme the idea that the realization of a building is not the result of a single act, but the result of actions taken by several people including the user. In this way they dealt with the themes of the relationship between the individual and the community, the importance of the 'margin' between public and private, the concept of capacity of the building, and the role of technological plans in relation to flexibility and integrability.

Professor Kendall then explained the first exercise, for which the participants had 3 hours. After a break for lunch, the students hung all the works on the walls of the lecture room, 20 minutes were given to observe and to choose two significant works to be taken and hung on the blackboard. Initially, the authors presented their work, then, led by professors, followed a moment of discussion in which the strengths and weaknesses were emphasized.

The same structure (working, results exhibition, briefings, works presentation, discussion and conclusion) was also adopted in the afternoon session and the following morning for each of the remaining exercises.

The exercises were followed up by continuous revisions of professors and tutors during the workshop and by prof. Kendall's suggestions to support the understanding of the text supplied for each *play*. All these indications were given in the form of schemes, driving questions, and recommendations to stimulate considerations and the awareness of the whole path each participant was undertaking.

For example in the second *play*, guidance about the use of colors (black dashed for the division of territory that can not be modified, red for all the variable parts) was given, as well as about the meaning of 'territory' (Fig 1).

Instructions were also given on how to make the final result (Fig 2) pointing out some of the aspects of mental process followed by each person in achieving the various hypotheses, including the fact of explic-



hard working...

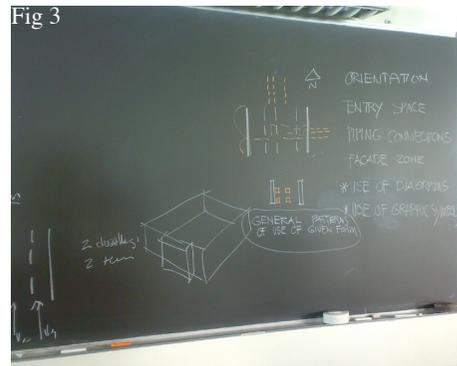
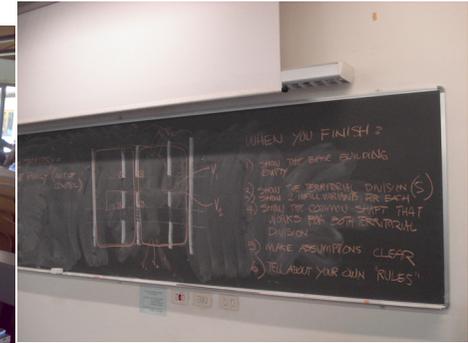


Fig 3

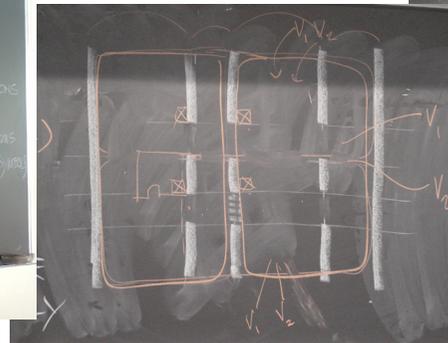
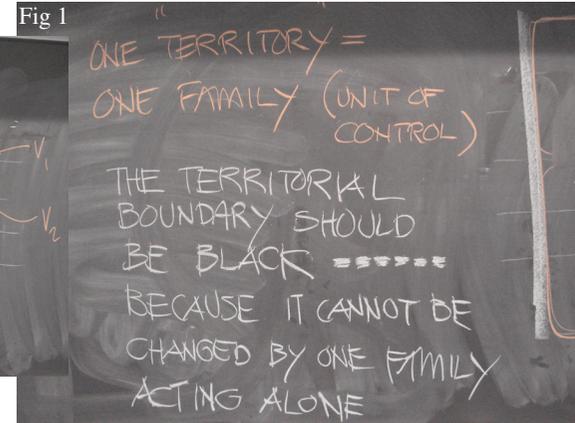


Fig 1



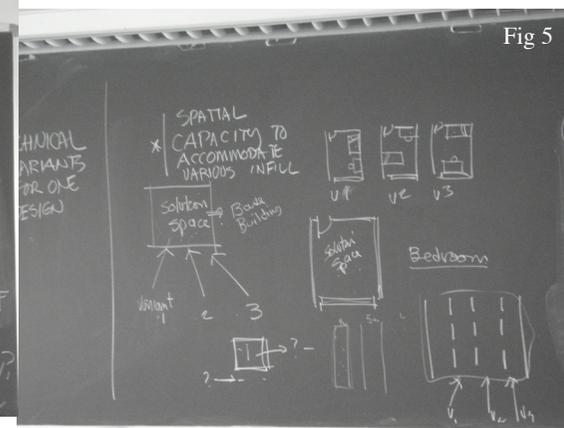
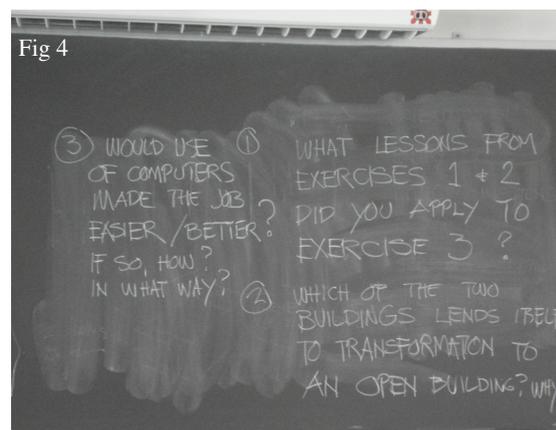
choosing...

itly declaring the 'rules' followed in the division of territories. Among the indications for the writing of the second *play* they were asked to pay attention to certain factors, such as orientation, entry spaces, pipe connections, plant integration and flexibility, facade, use of graphic symbols, resulting from the discussion on the first *play* (Fig 3). In the third *play* attention was placed on a result which was more about the assessment of the possibilities offered by a given layout rather than the fact that the work was on an existing structure in a real context. On the layout provided, Professor Kendall asked to design 'a minimum infill' and 'a maximum infill', respectively with minimal changes to the 'base' and 'infill', and therefore the cheapest cost for a hypothetical restructuring and greater changes on the 'base' with a hypothesis with a greater level of freedom.

There were finally some important questions at the end of the exercise (Fig. 4): *What lesson from Exercise 1 & 2 did you apply to Exercise 3? Which of the two buildings lends to transformation to an open building? And why? Would use of computer make the job easier/better? If so, how? Would use of computers make the job easier/ better? If so, how? In what way?* These questions led to compare the different approaches followed in the 3 *plays* and the growth of each participant during the exercises.

A more in deep discussion has been made at the conclusion of the working days with some general remarks that have taken up the concept of space capacity (Fig. 5), which was analyzed in this occasion, after the carrying out of the exercises, certainly with a greater richness of issues.

presentation...



discussion...



WORKS CONTENTS

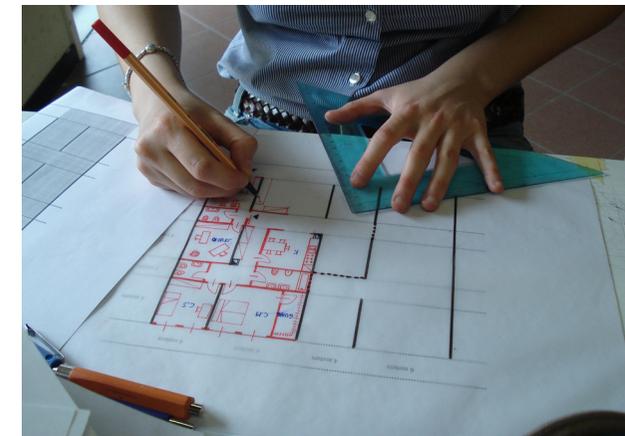
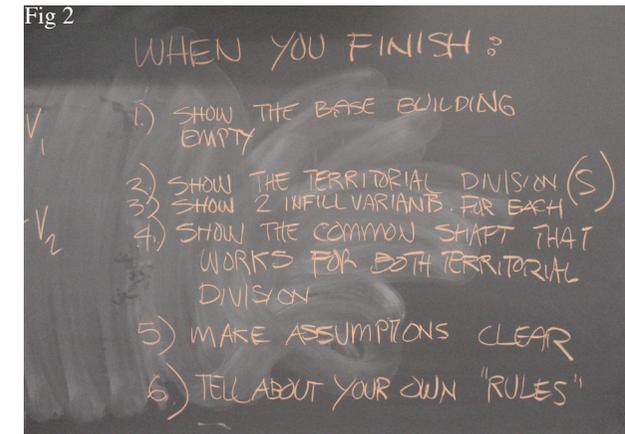
By Leonardo Zaffi, Nicoletta Setola

At the end of the two days in which the learning experience was developed, it is useful to summarise some considerations trying to make a critical reading of the final product. The need for a step of interpretation, integration of analysis that may subsequently be more extensive and thorough, is closely related to the need to support the understanding of the elaborations with references that are inside cultural peculiarities and in the training of architectural students of our faculty. Even a summary, of differences and similarities in final works, enables us to recognize some recurring attitudes both in the way the *plays* have been interpreted and in the approach used to deal with proposed design problems.

The direct correlation of these similarities with the knowledge and methodology gained by students in their cultural training and learning environment in which their potential has developed, allows for the framing of the most significant aspects of the experience and to identify possible ways to implement future effectiveness.

In general we can say that, both in the processing, and in the subsequent comparison of the final work, general difficulties emerged especially in relation to two aspects: the total abstraction from the real context of *plays* and the explicit request to design according to an alternative of logics. In the first case the frequent attempt to circumscribe the design problem and the basic information of *plays* through integration with a more complex system of detailed rules, requirements, constraints was detected. This additional clarification and redefinition of issues, aimed at recreating a concreteness of context or conditions, was certainly perceived as a useful device to bring the experience on a more familiar and consolidated ground. If in some cases, the references used were environmental, that is orientation and geographical location, in most cases regulations of the standards for minimum size of residential building and related standards have been adopted. Obvious inconsistencies and weaknesses in the organization of space with restricted ability to develop creative and flexible solutions have come about. The spatial interpretation of patterns has been generally of flat type, tied to a system at only one level. Few have taken up the oppor-

Fig 2



tunity of the absence of stated limits of height or shape to produce a three-dimensional vision and were limited to a single planimetric distribution. Only in two cases courtyards or stairs with the hypothesis of a development on multiple levels have been introduced.

We cannot fail to recognize in this a clear reference to design approach that characterizes the current production of residential building in our country where types based on 'open space' or loft-type living models have a very limited diffusion and they cannot therefore be reference models. Even the business (commercial) types are very rarely used in our studies. Similarly, in the interpretation of diagrams, a widespread difficulty in interpreting the system of linear constraints over the more well-known structural models derived from spatial and structural punctiform systems has been recognized.

A general reflection is also possible concerning the ease with which participants responded to the request of proposing several alternative solutions by specifying the conditions, especially the systems that can make those solutions feasible. In the approach to a project conceptually based on a system of alternatives, a partial lack of methodological tools and of knowledges was identified. Almost all the projects show a remarkable uniformity of solutions with a very similar reduced repertoire of solutions.

Clearly limits have occurred in management, through an effective proposal for a system of spatial and functional solutions, of relationships between permanence ('base building') and variability ('infill'). The most common difficulties were encountered in the ability to set the technical constraints in order to allow extreme variability in spatial distribution. The vertical pipe shafts were perceived more as a limitation and not as a resource for internal flexibility, for this reason the number has been reduced to a minimum and they have been decentralized in less efficient positions. This trend was even more pronounced in the last of the *plays*, which had as its basis, the planimetry of an existing building. In this case the projects have taken on the connotation of a more definitive pattern rather than a range of possible options resulting from a flexible layout.

Forced between new constraints and design methodologies mainly attributable to a professional approach other than a trial, the spatial patterns and events were in part characterized by a certain stiffness and by limitations in the management of the environmental levels. The relationship between interior and exterior was perhaps more explored even if it almost never arrived to reconfigure in a decisive way the building boundaries felt, in most cases, simply as a barrier between the inside and outside.

Generally, we may summarize these considerations in a generalized



difficulty to set a design process based on a system of alternatives and options rather than on a set of definitive solutions, and in the need to support the design phase with a reference system and with constraints specific to a real context.

These aspects are partly attributable to some specificities of the students's design training in our university. The path of development of the tools needed to produce and manage a planning process based on the plurality of solutions and subject to constant evolution in time, seems not yet fully mature.

With every good chance just as the value of training of these exercises lies in the call for a design approach sometimes outside the consolidated patterns, it is equally plausible that the same quality of results is in part determined by some similarities that allow to better understand and to give value to the method proposed in the exercises. Maybe a possible context of implementation of the experience can be sought in the adaptability of the content of *plays* to the operating environment in which they are proposed in order to gain greater flexibility and efficiency.

The strengths of experience are then at the same time its limits. It is certainly positive for the training of architects to practice in the dealing with design problems in which nothing is taken for granted by questioning certainties and visions that all too often become habits, and it is equally important that they should learn the use of clear principles such as those of permanence and variability as a means to enhance the capacity of the built environment over time to adapt to changing uses and users preferences. Against this, it is impossible not to note that 'to re-accustom' to a different conception of the project for students already at the end of their studies and of their training, perhaps requires a greater continuity of exercise and more time for this kind of experience.



THE PARTICIPANTS



Q1: What did you find interesting in doing these exercises?

A: I think that was so interesting the way of working based on an experimental method. Personally I liked this way of thinking, it gives me an idea of freedom that I transposed in the exercises by studying and researching many and various infill solutions once base building was fixed. The idea that pipes shafts become base building parts was an interesting thing too.

Q2: What difficulties did you find in doing these exercises?

A: The main difficult I found was about putting pipes shafts because they became base building. It wasn't easy thinking about the better way to put them in the plan because we were not familiar with this kind of method.

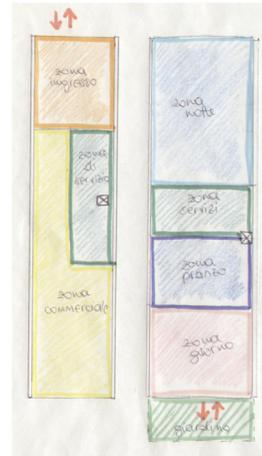
Q3: What did you find interesting in the open building approach?

A: In this new approach I found interesting the idea of freedom and flexibility that we tried to apply at the games. I think it's important the attention that this method give to the customer needs and wishes. It is also interesting the theme of new technological approach like the pipes under the floor. So the experimentation of thinking and designing many different infill solutions taking fixed pipes shafts was really intriguing.

Q4: Do you think that some of the principles and skills of o.b. can be applied to your current works (study, research, job)?

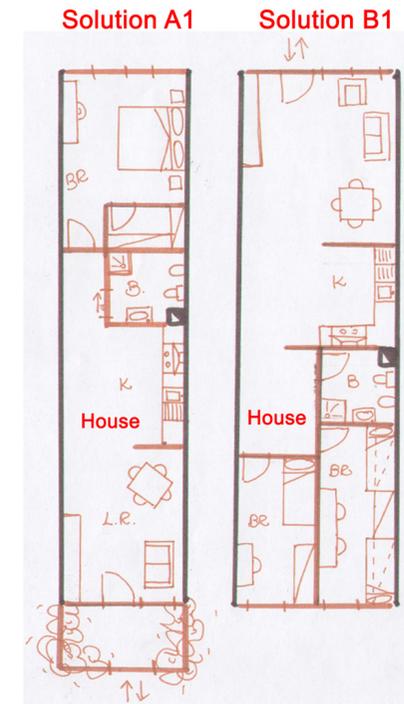
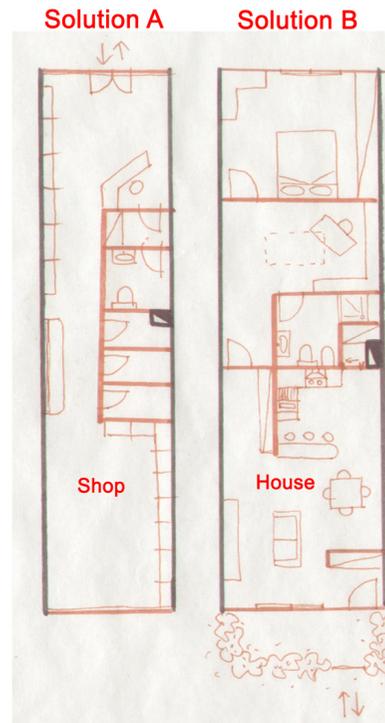
A: After this experience I'll try to pay more attention to designing any kind of building. I'll try to apply the method I learned in these two days: these principles are so intuitives if I think about them but I have to improve my little experience. I'm sure the better way to do that it's practicing them in my works.

Distributive scheme



GAME 1

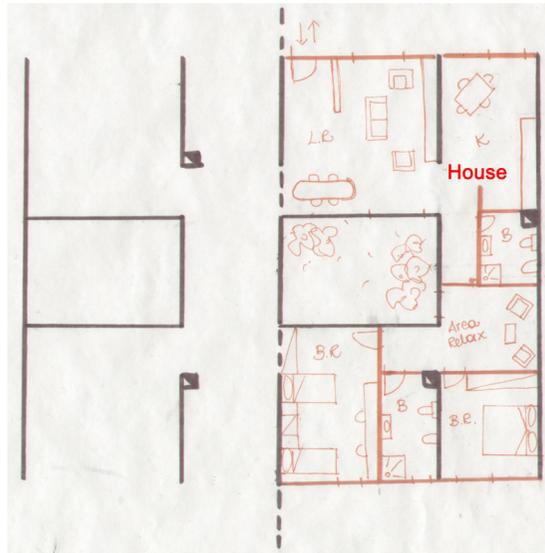
Infill's different solutions



NB The pipes shafts taking fixed

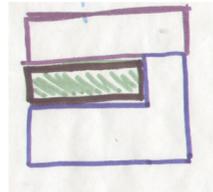
Infill's different solutions

GAME 2

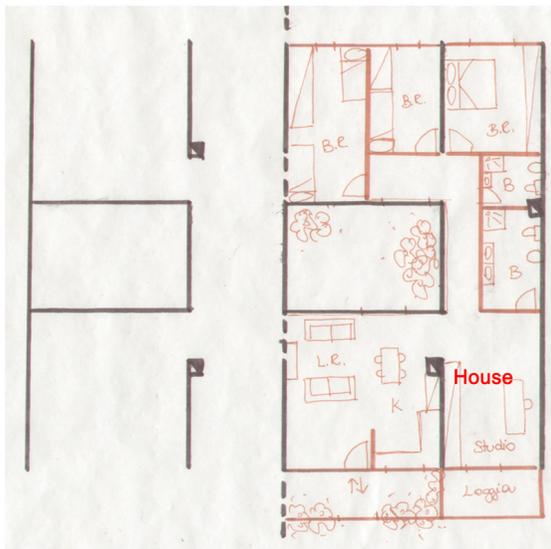


Solution 2A

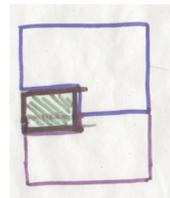
Distributive scheme



- day area / public
- night area / private
- open area for air and light
↓
it became infill



Solution 2B

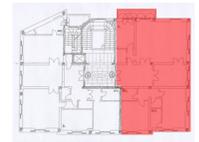


- day area / public
- night area / private
- open area (air and light)

NB The pipes shafts taking fixed

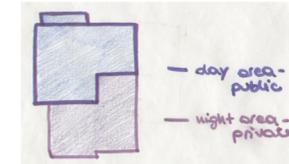
Infill's different solutions

GAME 3

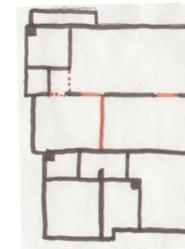


Minimum infill

Distributive scheme



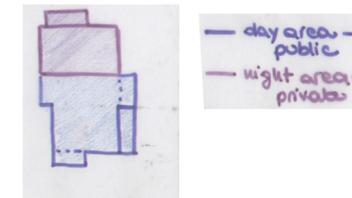
- day area - public
- night area - private



..... deleted walls



Maximum infill



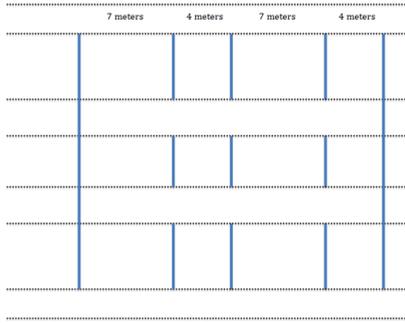
- day area - public
- night area - private



Pipes in the same position as the minimum infill solution

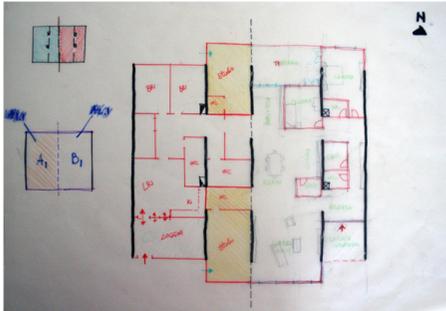
..... deleted walls

GAME 2

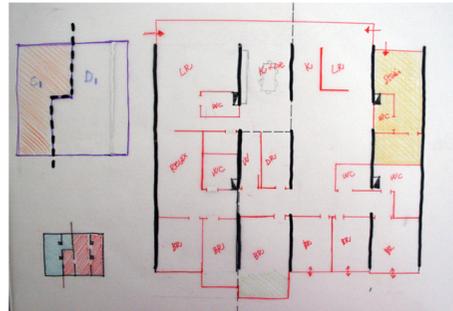
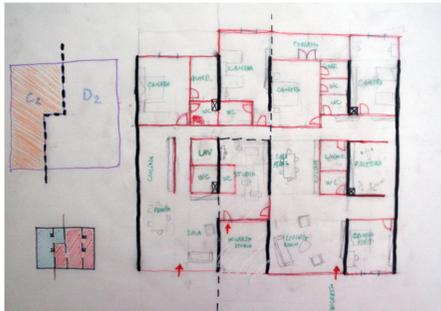


OPEN BUILDING
the idea that user/inhabitants may make design decisions as well.

HP_1

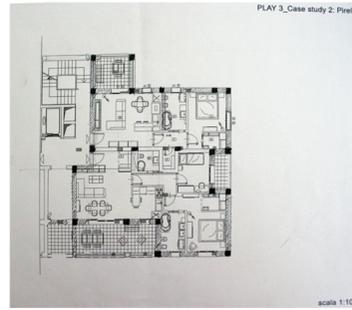


HP_2



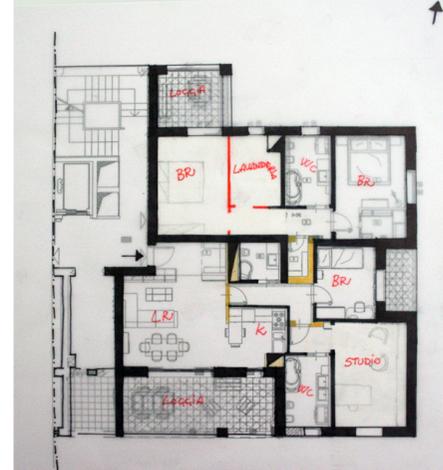
Design in accordance with an ensemble of modules (dull and transparent) that could be simply to assemble to realize interior walls or closings.

GAME 3

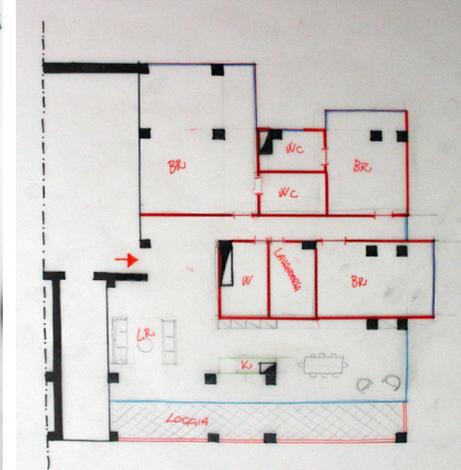


OPEN BUILDING
approach is also a good way to renovate old buildings.

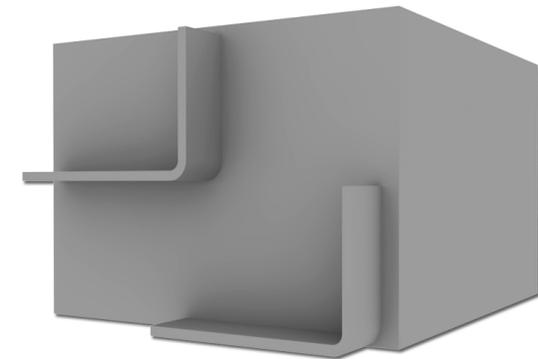
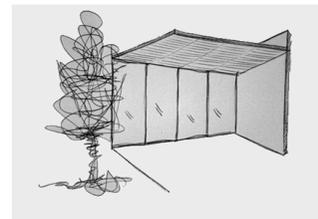
MINIMUM infill



MAXIMUM infill



Think a facade system that will be suitable for different extensions and closing possibility.



Q1: What did you find interesting in doing these exercises?

A: I found interesting to work at the exercise searching not the best solution but the best no-solution, the base configuration that has the best potentiality.

Q2: What difficulties did you find in doing these exercises?

A: To find many solutions and one correct configuration of the pipe shaft in so short time, especially in the first exercise when the mental approach was not so usual and we need more time to focus on the problems.

Q3: What did you find interesting in the open building approach?

A: I think that it is a correct approach to planning cities and environments of our future in their continuous changing. It also gives importance to people that live inside a building and can customize their dwellings. It gives technical and sustainable solution and allows infinite configurations.

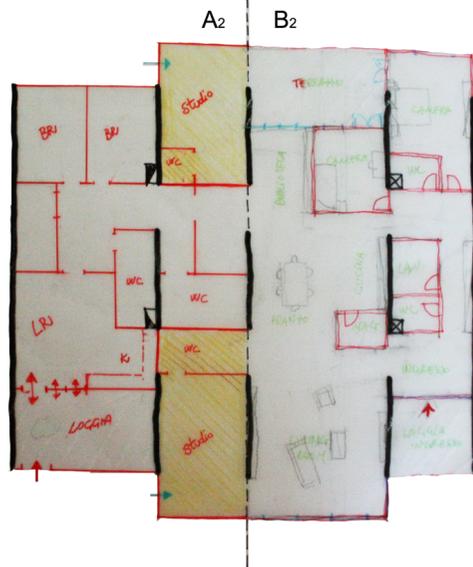
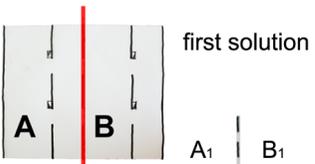
Q4: Do you think that some of the principles and skills of o.b. can be applied to your current works (study, research, job)?

A: I think some principles of o.b. theory will be very useful to the development of my academic exams. I would like to know how this theory could interact with parametric design.



territories A and B
scale 1:100

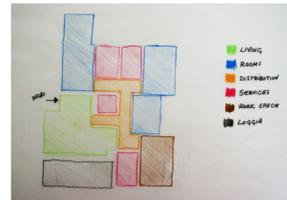
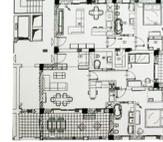
territories D
scale 1:200



GAME 2



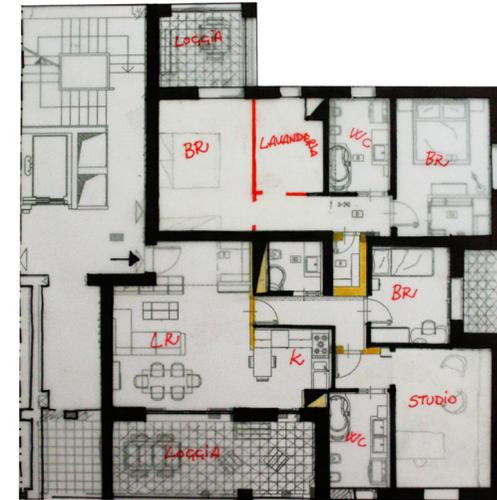
plan of the dwelling



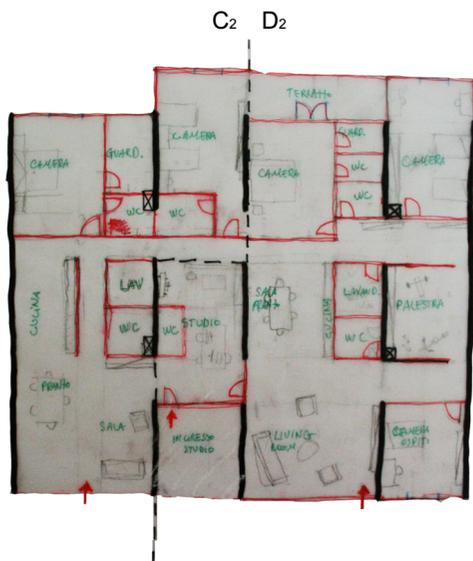
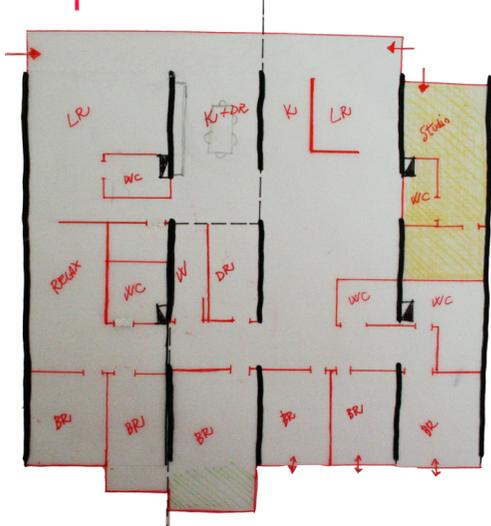
GAME 3



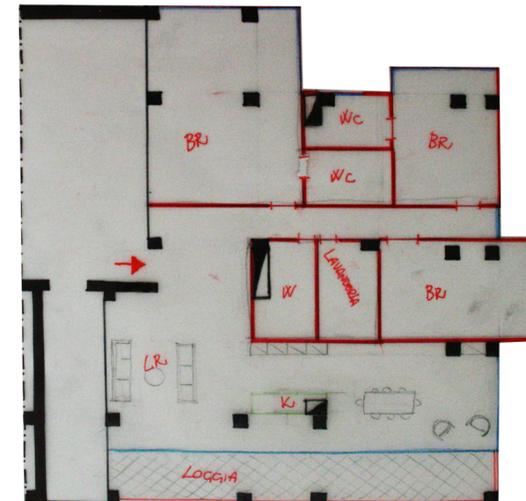
MINIMUM INFILL



second solution



MAXIMUM INFILL



Q1: What did you find interesting in doing these exercises?

A: Playing this exercises I found very interesting the need to challenge myself with dimensional limits and the mandatory to establish some rules (especially working in partners in the second and third exercise), the use of diagrams and graphics to explain advanced design's ideas.

The first exercise, especially the play 1a, was particularly interesting because of the goal: you have to create more variations from a unique given base building form.

Last exercise maybe was the most interesting because it allowed the application of rules and information learnt the day before.

Q2: What difficulties did you find in doing these exercises?

A: The difficulties I met most of all was to divide given forms in zones; even the mandatory we had at the beginning to fix some rules created me difficulties, but really early I overcome them thanks to the interest caused by the exercise.

Anyway the highest difficulty was that I couldn't create openings in the base building main structure.

And last, second exercise for me was the hardest one because created zones were not always well dimensioned and appropriated to previous pipes shaft positioning.

Q3: What did you find interesting in the open building approach?

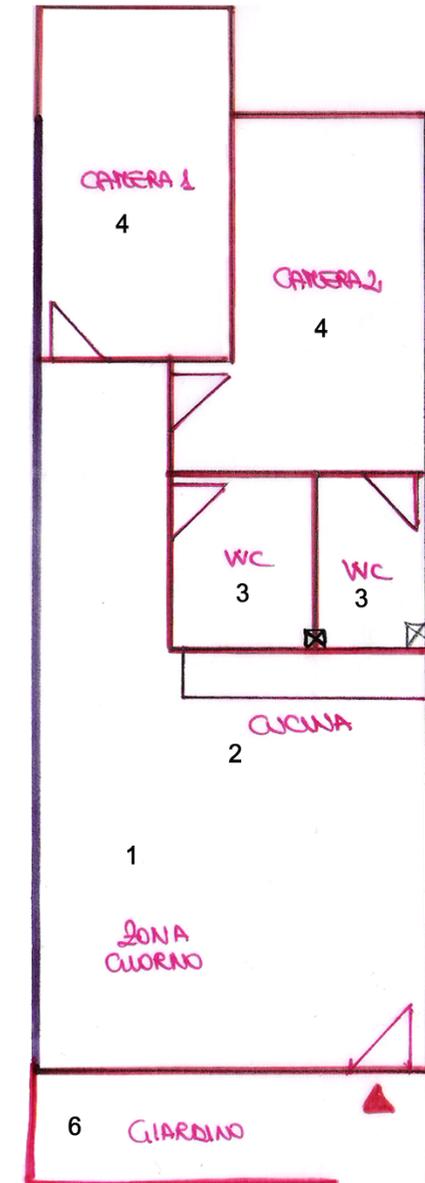
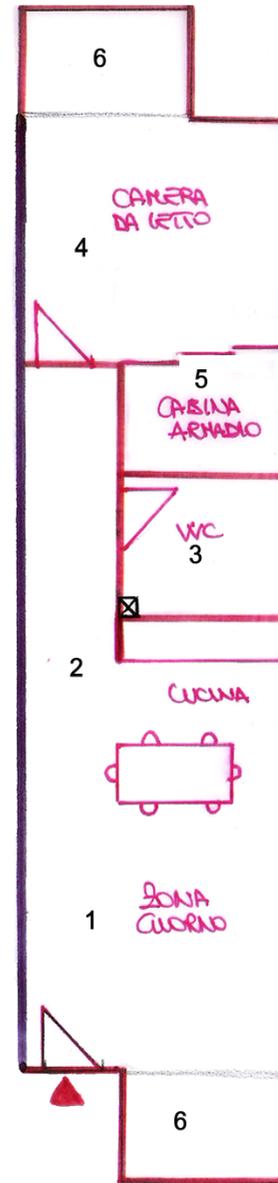
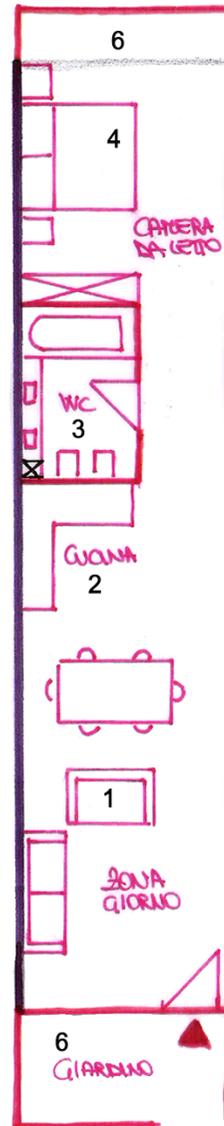
A: Flexibility and total freedom in solutions. Distinction between base building and fit-out. Clear distinction between parts in common and individual ones inside house units.

Infill or fit-out elements approach, so the idea that every dweller, even in future, makes decisions about design to create a more comfortable space.

Adaptability of these principles both to new buildings and constructions already build.

Q4: Do you think that some of the principles and skills of o.b can be applied to your current works (study, research, job)?

A: I think that principles and skills of open building might be very useful in studying and working activity, thanks to total flexibility and adaptability allowed by this approach.

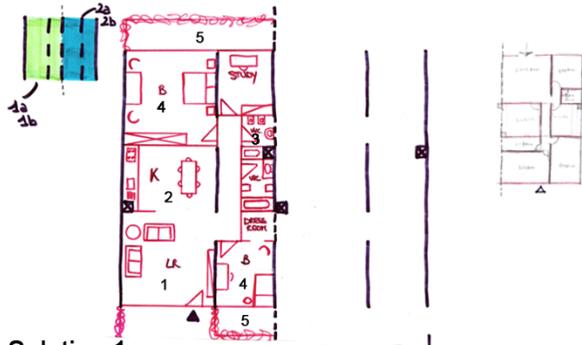


1. livingroom
2. kitchen
3. bathroom
4. bedroom
5. dressing room
6. terrace - garden

The highest difficulty was that I couldn't create openings in the base building main structure.

GAME 2

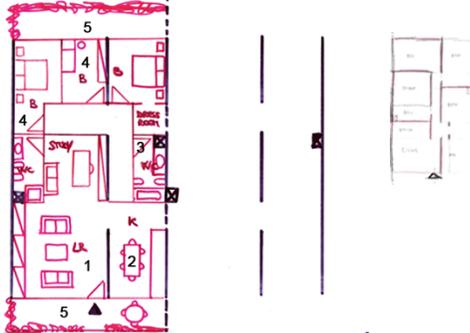
Marco Luciani's Solution 1a



1. livingroom LR
2. kitchen K
3. bathroom WC
4. bedroom B
5. terrace-garden T

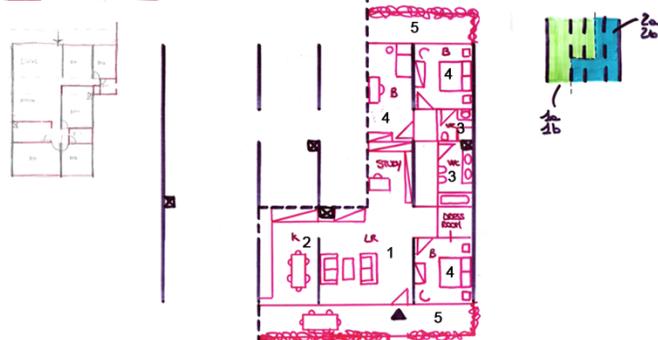
Solution 1a

Marco Luciani's Solution 1b



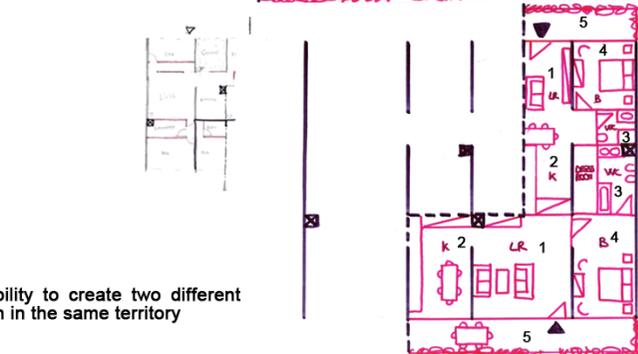
Solution 1b

Marco Luciani's Solution 2a



Solution 2a

Marco Luciani's Solution 2b

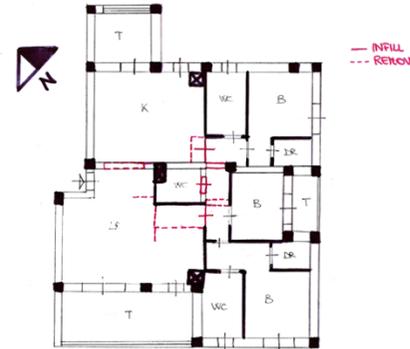


Solution 2b

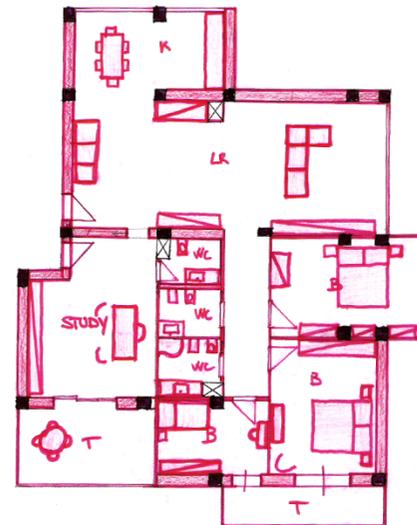
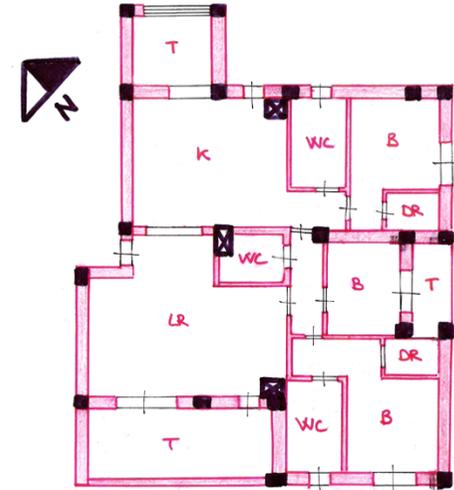
Possibility to create two different solution in the same territory

GAME 3

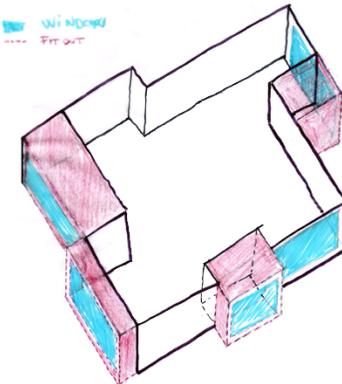
Case study 2:
Pirelli



MINIMUM FIT-OUT



MAXIMUM FIT-OUT



Q1: What did you find interesting in doing these exercises?

A: I enjoyed doing games not exercises! Even if I used skills and knowledge coming from my university experience, it has been useful to see and to understand approaches and solutions to problems from my workshop mates, as well as many different design solutions that could take place in very simple space.

Q2: What difficulties did you find in doing these exercises?

A: Really I didn't find great difficulties, but I noticed that when I have a house or a simple flat to manage, I always assume a standard solution (living area, sleeping area, toilets) and I adapt it to the square meters available – for that I had difficulties finding alternatives to the first solution. In my opinion this problem is due to the fact I never looked for alternatives in the past, and I take for granted the first solution as the most congenial.

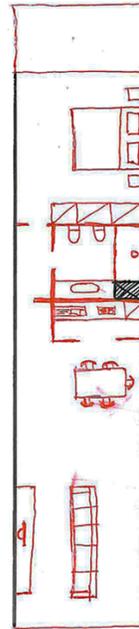
Q3: What did you find interesting in the open building approach?

A: This is an innovative approach to the design that should improve energetic efficiency of building process and flexibility and quality of the product. The building is considered as a combination of systems and sub-systems, each one can be accurately coordinated to assure a better process. The main systems to analyze are the structural equipment, the inner space subdivision and the pipe shafts positioning. Let grow the opportunities for a better organization, quality and a greater control and flexibility of home is very interesting.

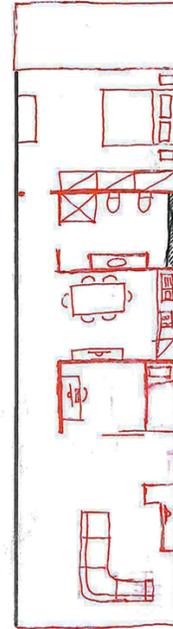
Q4: Do you think that some of the principles and skills of o.b. can be applied to your current works (study, research, job)?

A: It will be very useful especially for what concern the flexibility of the building interior and the location of pipe shafts in the plan. When I'll design houses, restaurants, offices or something else in the future I'll sure apply this theory, although I already used this kind of approach without knowing what Open Building means.

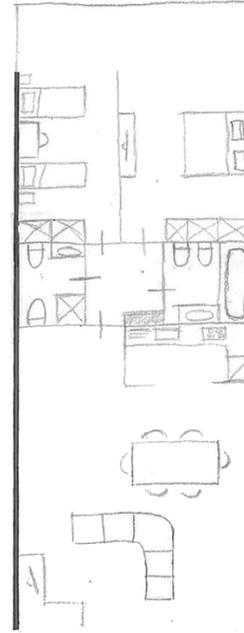
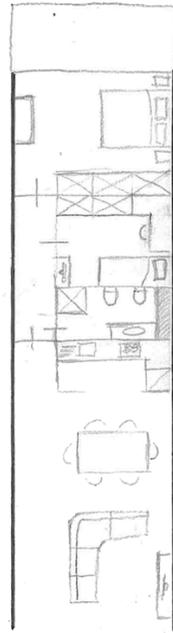
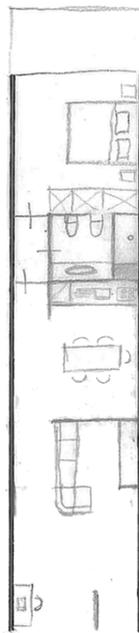
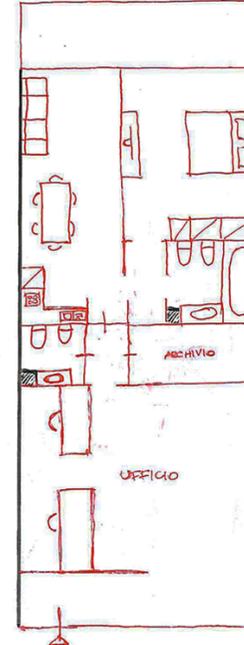
typology 1



typology 2



typology 3



GAME 1

	4 meters	5 meters	7 meters	
				4 meters
				2 meters
				4 meters
				2 meters
				4 meters

The first has a gross surface of 64 m², from which I obtained, in both solution, a two-room flat with a toilet. The difference between the two solution is that the second one has the kitchen separated from the living room.

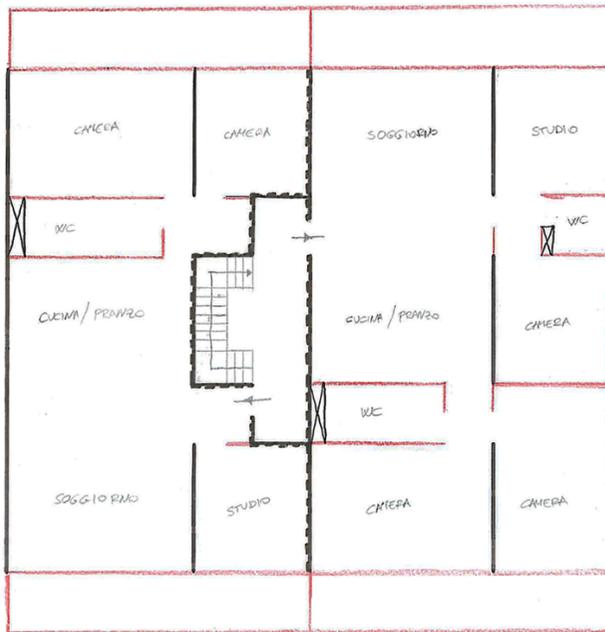
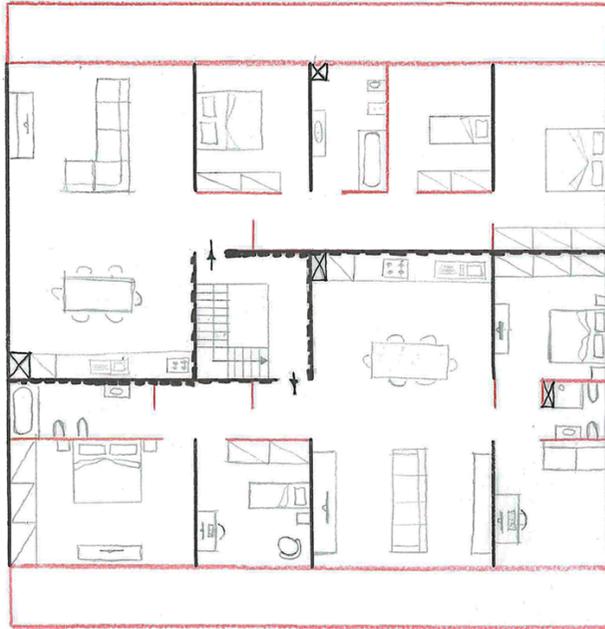
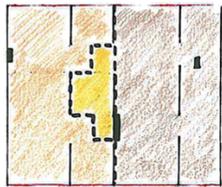
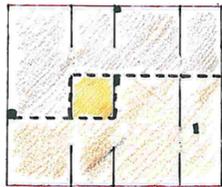
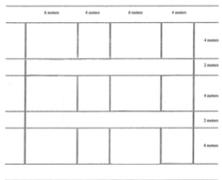
The second typology has a gross surface of about 82 m², from which I obtained another bedroom more compared to the first one, instead in the second hypothesis a study room.

The third typology, instead, is much bigger, about 112 m²; the first hypothesis is a flat with a living room, kitchen/dining room, three bedrooms and two bathrooms. For the second hypothesis I thought to adapt the space as an office, in the front side, with an archives and a toilet open to the public, and with a little two-room apartment with a toilet in the back side.

For all solutions I studied the right positioning of kitchen and toilets, in order to decrease the numbers of caved for plants.

The apartments has a shared corridor in the front side and a private balcony in the back.

GAME 2



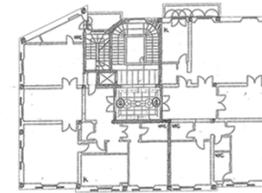
Given that the carry structures are untouchable (it is not possible to create opening there), I thought about two solutions: both are composed by two apartment, composed mainly from living and dining room, toilets and two/three bedrooms.

The apartments has the inner stair hollow shared, and outward private spaces both in living area and sleeping area. In the second typology there is transversal ventilation.

GAME 3



minimum fit-out



maximum fit-out

From the plans of a flat, situated in a condo in Oberdan Place in Florence, I thought about two hypothesis of inner renovation: the first one (above on the left), with very few changing, and the second one (above on the right) where I suppose a radical inner transformation.

In the first hypothesis I crush some internal walls, so that create brighter and more aired rooms, in the second one instead I moved the living area to the south and the bedrooms to the north.



Q1: What did you find interesting in doing these exercises?

A: I found particularly stimulating that the proposed exercises gave us the opportunity to put into practice a new approach to the planning activity.

Q2: What difficulties did you find in doing these exercises?

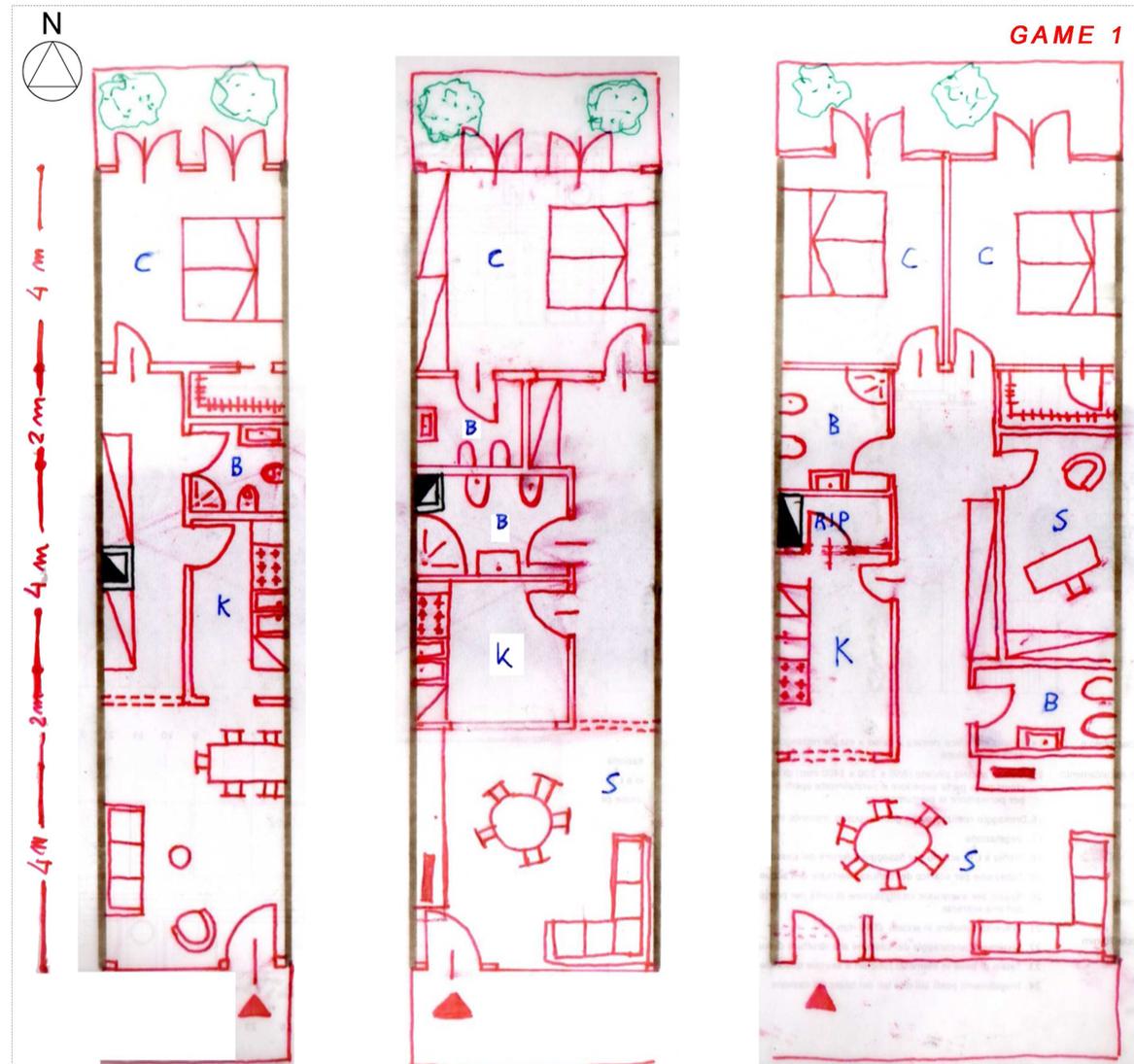
A: I found particularly hard to develop the concept of a flexible building, where the spaces can be organized to meet the user needs. In order to warrant this outcome I had to decide the positioning of pipe shafts (which were treated as reference points) in such a way to allow reaching the maximum flexibility of design.

Q3: What did you find interesting in the open building approach?

A: During the planning process a planner has to face several difficulties; for instance, he has to decide where to place electric, cooling and heating systems and pipe shafts inside the building. These aspects are of the greatest importance in order to partitioning the space in the most efficient way. By adopting the o. b. approach the planner carefully planning all the aforementioned aspects reduces mistakes and cuts down costs due to supervening needs of the owners.

Q4: Do you think that some of the principles and skills of o.b. can be applied to your current works (study, research, job)?

A: I believe they should be applied in everyday planning activity. In fact the o.b. helps planner to overcome some of the most common drawbacks of the traditional approach helping to meet more effectively the client needs.



I generated one set of variants for each form. Each form has a different dimension and is assumed to be on one floor.

I decided to place a plumbing point, where pipes from the kitchen and the bath attach, in an area located in the middle of the apartment, adhering to the base building's left wall, near the bath and the kitchen.

As for the orientation, I decided to place the rooms on the northern front and the living-room and the dining-room on the southern front.

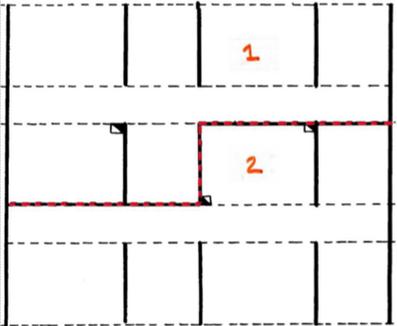
Entry into the dwelling is through the southern facade, whereas on the northern facade I thought about placing a small garden for the rooms.

Territorial division



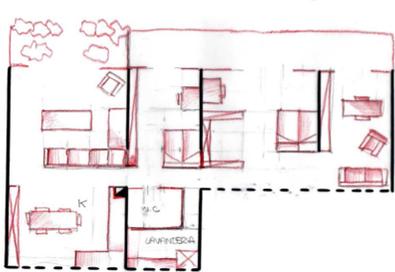
Solution A

We explored two different territorial divisions, then we generated two variations for each solution. In territorials 1A and 1B we placed only one pipe shaft, since the apartment was quite small, whereas in territorials 2A and 2B we placed two pipe shafts in order to ensure more flexibility in generating the two alternatives.

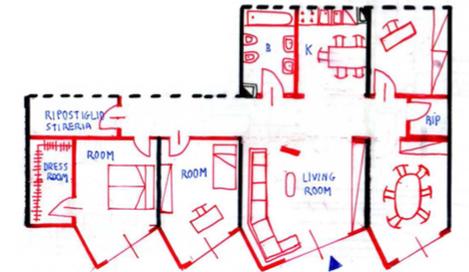


Solution B

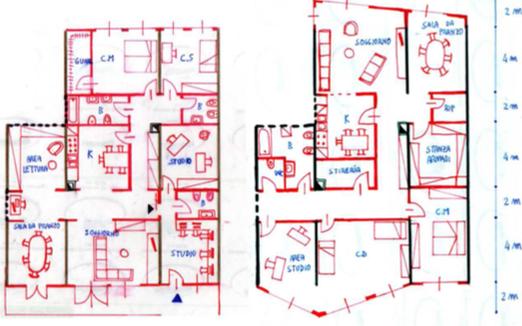
In each solution we extended the facade, in order to create more room to be destined either for internal uses, to create balconies and for the acces to the building.



Solution B, territorial 1A



Solution B, territorial 2B



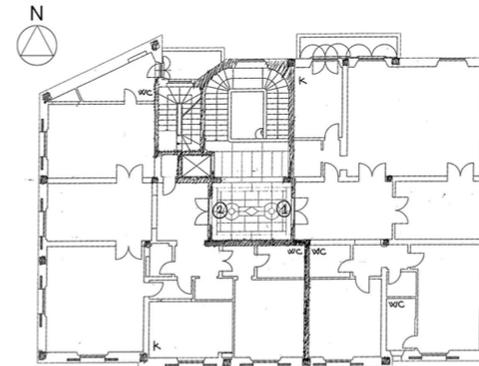
Solution A territorial 2A

Solution A territorial 2B

Solution A territorial 1A

Solution A territorial 1B

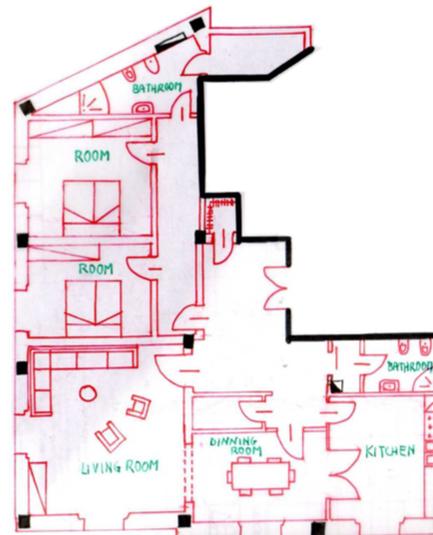
GAME 2



Case study 1: Piazza Oberdan

GAME 3

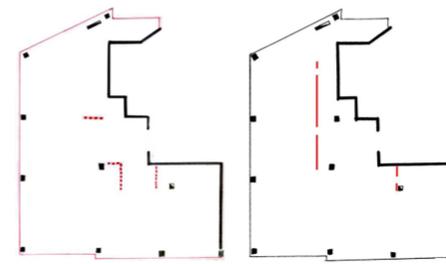
In this game we choose to work with the unit placed on the left side of the building; then we elaborated a minimum and a maximum fit out variant. In both cases we placed two pipe shafts inside the apartment in order to serve either the maximum and the minimum variants. Moreover, the maximum variant is conceived to be an open space.



Minimum infill

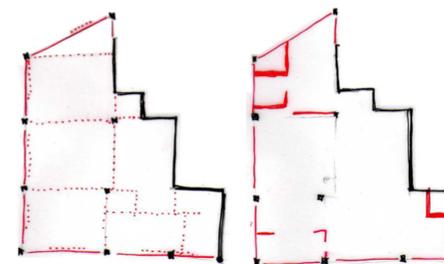


Maximum infill



Deleted infill

New infill



Deleted infill

New infill

Q1: What did you find interesting in doing these exercises?

A: Doing these exercises I found that the flexibility of the internal space, was the most interesting aspect. With flexibility we can try to satisfy not only today user's preferences but also their needs about changing the use and the internal space organization for the future.

I knew that we can improve flexibility by using new technologies for supplies. For example they allow to move the bath three meters far from the shafts with a greater freedom in organizing the internal space of buildings.

Q2: What difficulties did you find in doing these exercises?

A: The greatest problem was to find the most useful position for plumbing shafts. It was really strategic for the internal flexibility because it depends mainly on the freedom that you have in positioning the wastewater systems.

Other difficulties concerned the walls boundaries. We can't modify them, and we can't open new windows or doors and it has been hard for me to find many different solutions for the internal space.

I decided, by myself, to use a few of plumbing shaft to reduce costs. I also decided to distribute rooms in a night time area, in the north part of the building, and a daytime in the south part. This hardly conditioned flexibility

Q3: What did you find interesting in the open building approach?

A: I found interesting in the O.B. approach the principles of a design process based on the separation between different parts of buildings. Each part is considered by a timelife point of view and is optimized to be updated. So you can change form and position of rooms, kitchen, bath, open air spaces. In this sense O.B. improve the building maintenance and their conservation.

Q4: Do you think that some of the principles and skills of o.b. can be applied to your current works (study, research, job)?

A: I think that O.B. principles fit well to contemporary ways of living and culture and they focus more on interiors and on facades than in building construction systems. Contemporary people's desire for an increasing freedom in home living is connected with a demand for customizing their flats

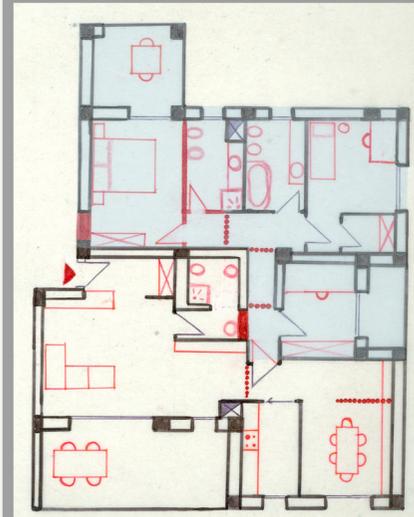
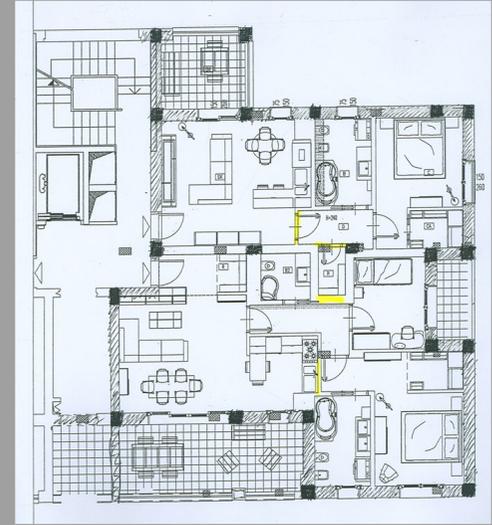
GAME 1



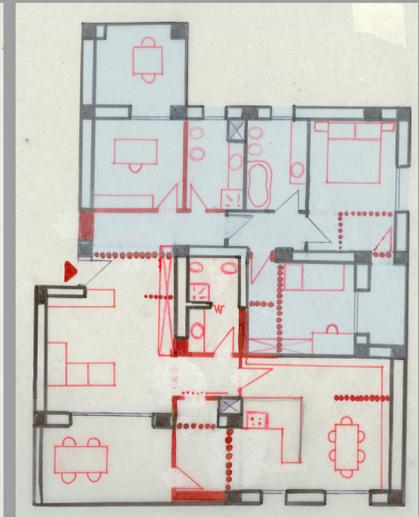
GAME 2



GAME 3



MIN FIT OUT



MAX FIT OUT

Q1: What did you find interesting in doing these exercises?

A: The whole experience has been interesting especially for the aspects that can be related to a sustainable architecture design

Q2: What difficulties did you find in doing these exercises?

A: I found the main difficulties in choosing the better location of pipe shafts in order to obtain flexible and variable internal space configurations

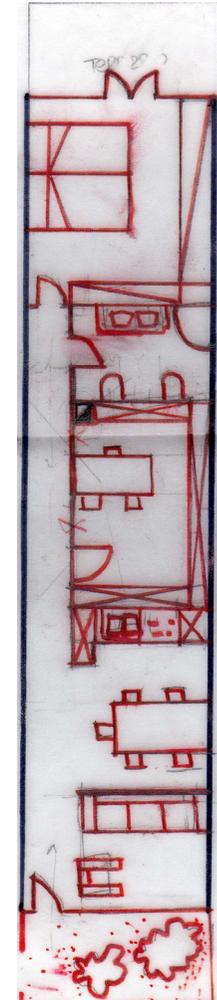
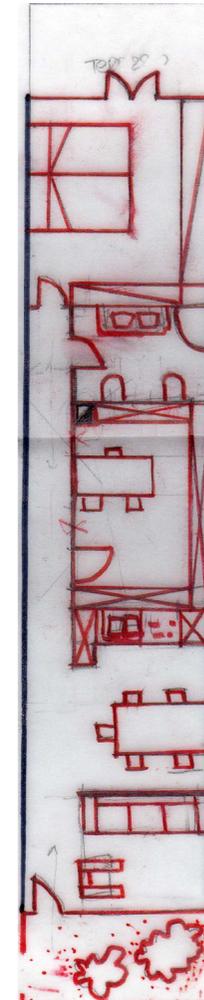
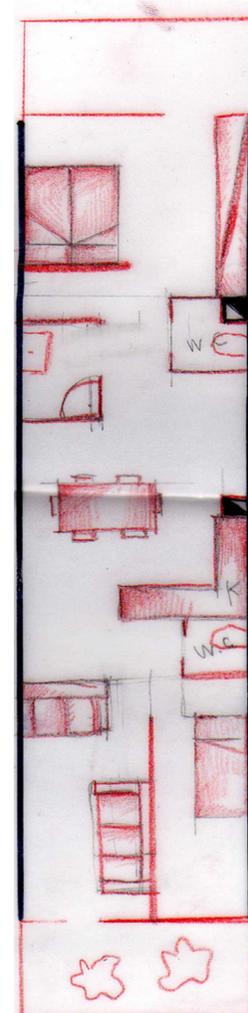
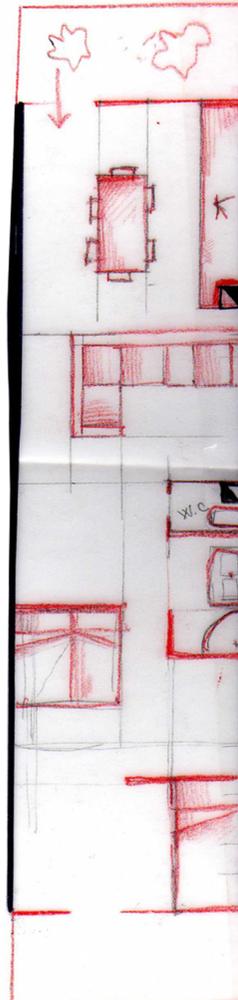
Q3: What did you find interesting in the open building approach?

A: The O.B. approach is interesting because it forecast a reduction constraints and entanglements in building interiors

Q4: Do you think that some of the principles and skills of o.b. can be applied to your current works (study, research, job)?

A: Yes, i believe that O.B. principles will be very useful in residential buildings design mainly when you need to realize a customizing space according to user's preferences .

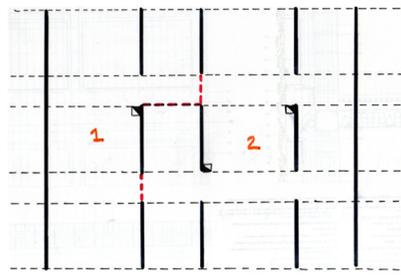
GAME 1



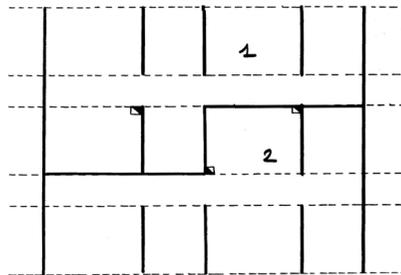
Play 1a

Play 1b

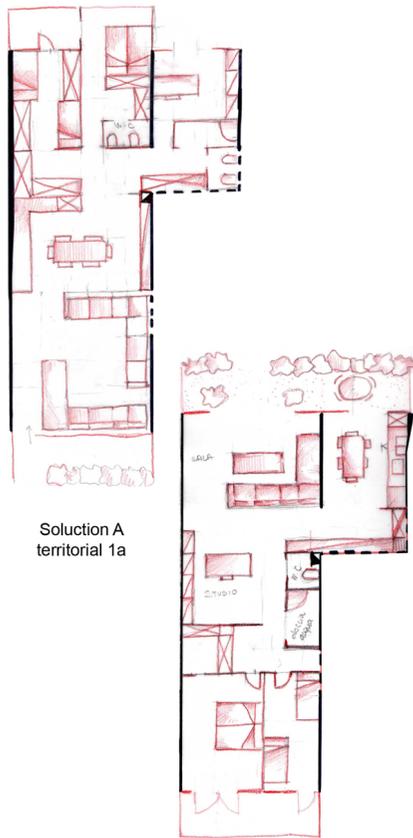
Territorial division:



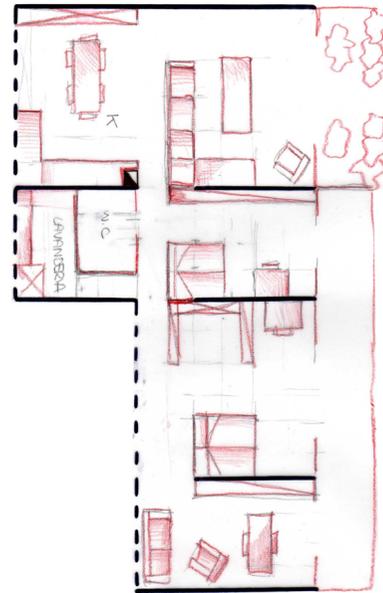
Solution A



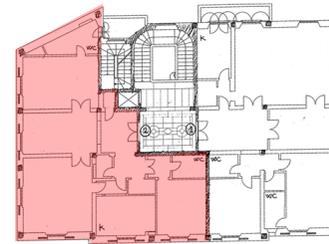
Solution B



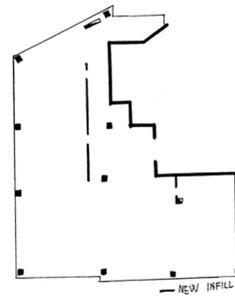
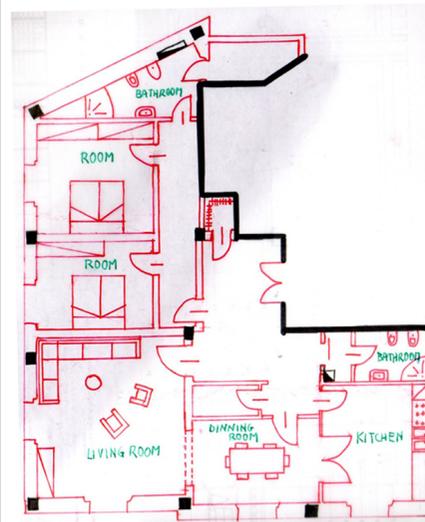
Solution A territorial 1a



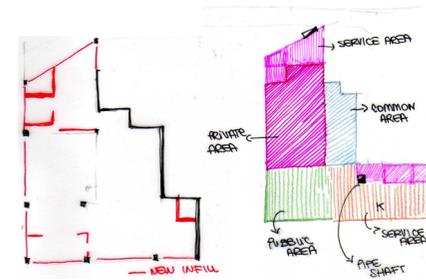
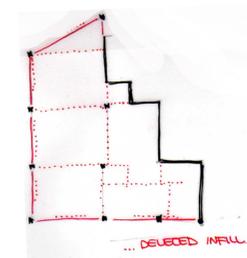
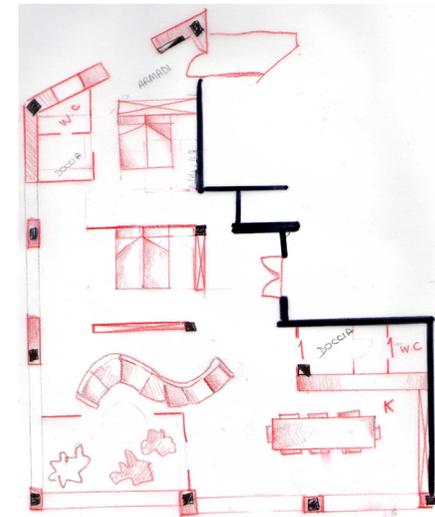
Solution B territorial 1a



Minimum Infill



Maximum Infill



Q1: What did you find interesting in doing these exercises?

A: I think that is very useful to learn how improve flexibility in existing building. In Italy we often work on renewal and rehabilitation of old buildings which need a new fit in according to contemporary preferences.

Q2: What difficulties did you find in doing these exercises?

A: The most difficult thing was to design more than one infill for each given base building in a very short time, but it was better exercise after exercise. More you practice and more you became used to do it and faster, of course.

Q3: What did you find interesting in the open building approach?

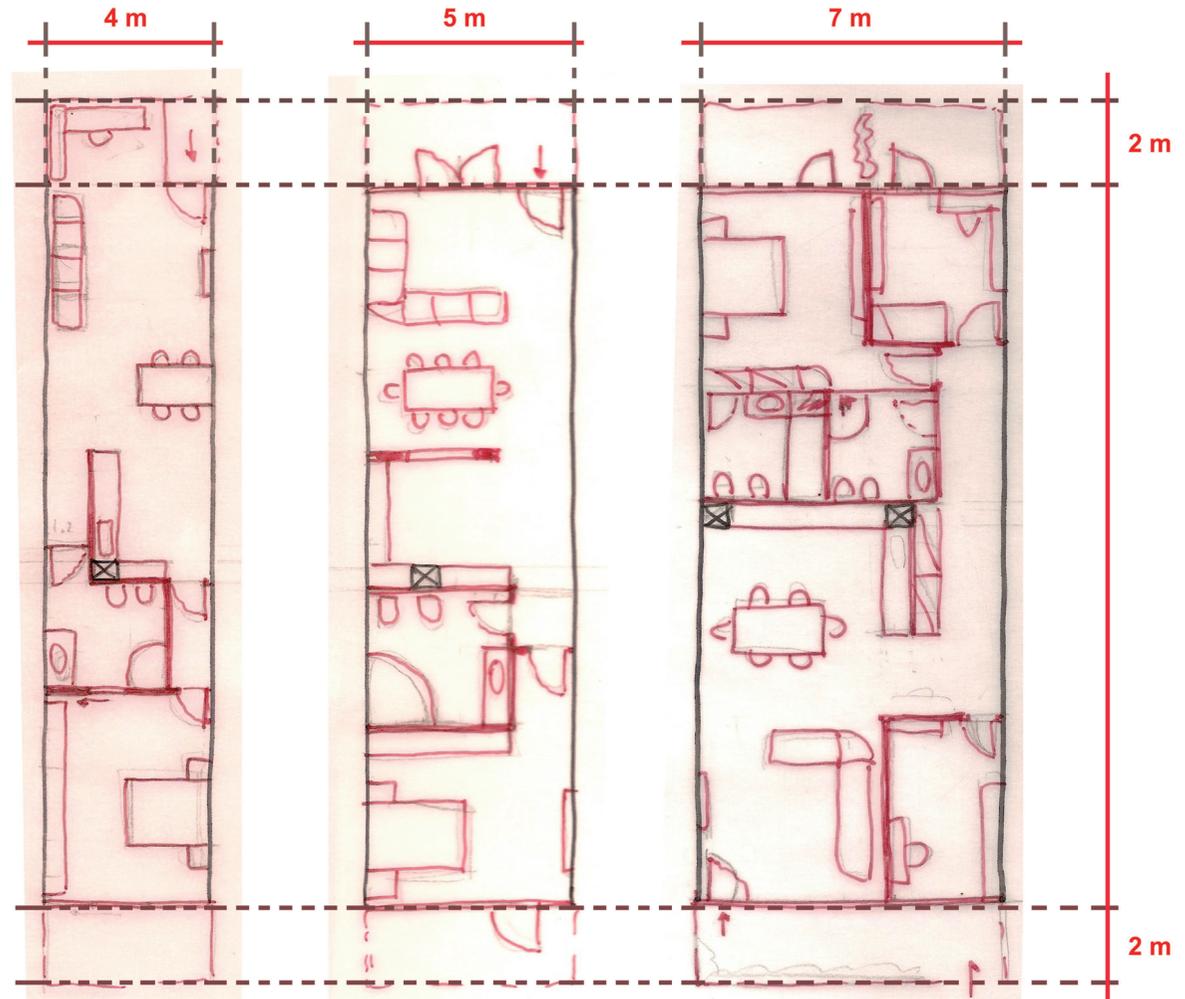
A: I really like the idea of optimizing technical functionality obtaining at the same time, a great number of different solutions concerning aesthetics in furniture layout (interior) and in facades systems (external). It's very cool to design something that could really fit on customer's preferences as they take part in the infill design processes.

Q4: Do you think that some of the principles and skills of o.b. can be applied to your current works (study, research, job)?

A: Yes I do. I am actually working at my final work of thesis: the theme is the development of a residential area that i designed two years ago. The concept is about a complete redefinition of the housing plan using the main rules of O.B. and focusing on flexibility of spaces and relationships between public infrastructures and single residential units. Exercises have been very useful to practice about quick hand drawing

GAME 1 - GENERATING VARIANTS USING ZONES AND MARGINS IN SECTORS OF VARYING WIDTHS

I've tried in the first two cases to put the shaft almost in the middle of the house, but more near to the night zone, to have a bigger living area. It serves both the kitchen and the toilet. In the first case I've tried to give to the toilet an independent entrance, to avoid people to pass trough the kitchen to go there. In the second one I left a strip on the right as a corridor so I can have a bigger kitchen and a bigger toilet. The living are almost the same, but in the first option I've closed a part of the extension with glazing so that space can be used to increase the living dimensions.



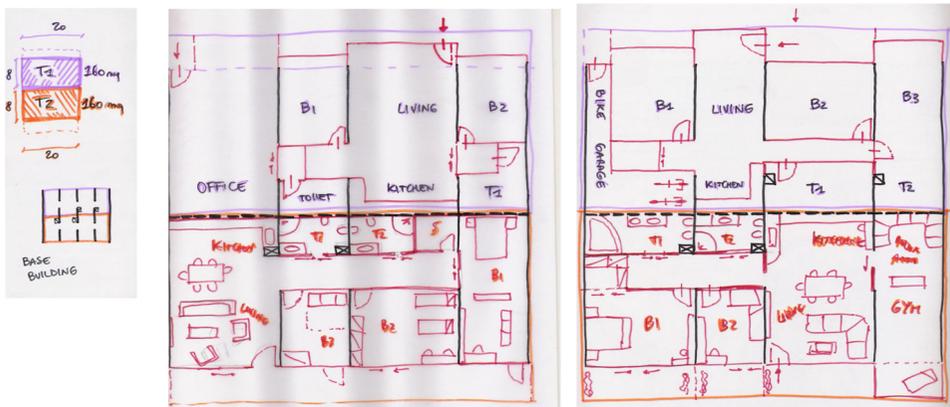
The last one was easier because there's a lot of space so I've putted also a studio and another toilet. The position of the shaft is always central. This was the first exercise so I made some mistakes, for examples I didn't consider the orientation and also I didn't analyzed the façades and I've lost a lot of time thinking about the furniture.

GAME 2 - DIVIDING A FORM INTO SEVERAL TERRITORIES AND GENERATING VARIANTS ACCORDINGLY

In this game we were two people working on the same building in two different territories and mine was the lower one. We put the shafts in the middle in a four meter strip in the middle of the building, so each apartment can use indifferently the two on the right or the two on the left.

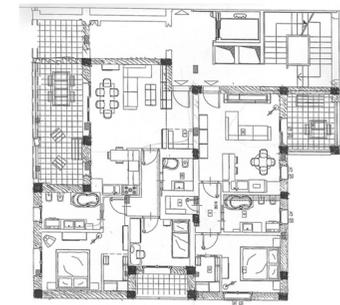


In both the solutions the “service area” (kitchen and toilets) faces the interior part of the apartment that is also the darker one. In the first case the entrance and the living room are in the central part with the toilet and the studio on the right and the bedrooms on the left, but this is not a very good solution because toilets are too far from bedrooms. In the second solution the entrance is on the left, with a big living area, the kitchen is smaller but with a dining room, the bedrooms are small but there are two toilets. Then we divided the building in two different territories, always horizontally, and we exchange the shaft to use. The distribution is quite similar because kitchen and toilets are always on the interior side, but in this case are more horizontally so I can have bigger bedrooms and living. An important thing that we learnt was to provide to small schedules before starting the design, that shows the territory division and the base building with the shaft, that is really good to visualize quickly the project.



GAME 3 - SEE AN APARTMENT BUILDING AS A COMBINATION OF TWO LEVELS OF INTERVENTION AND SHOW TWO DIFFERENT OPTIONS: THE MAXIMUM AND THE MINIMUM FIT-OUT VARIANTS

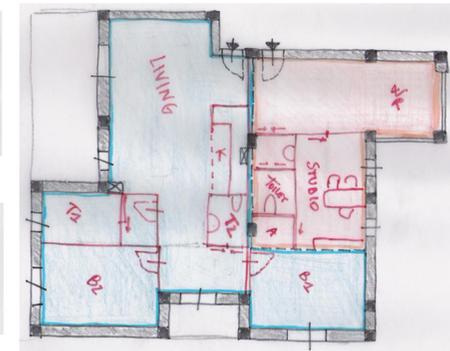
In this exercise we had to divide the building gave in two different territories (also of different sizes) and define two solution of new infill: one cheap, with the minimum of changes keeping all the perimeter as the base building, the other more expensive, with the possibility to change all the interiors and the façades, keeping just the pillars as base building. In both case we maintained the central shaft to serve the kitchen; in the first option we've added another one for the toilet on the west side and in the second one another on the north side (for two toilets). We considered the North on the entrance side.



ORIGINAL PLAN

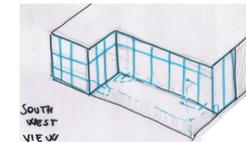
MINIMUM FIT-OUT

In this case the floor plan is divided into two different spaces: an apartment for 3/4 people and an office (I suppose a layer's studio). We made a very few changes, most of all in the studio area where we put another toilet, but using the existing shaft and we transformed the terrace in a waiting room all rounded by glazing. Also we made the living and the kitchen an open space. It was very clearful to make a diagram of what we changed.

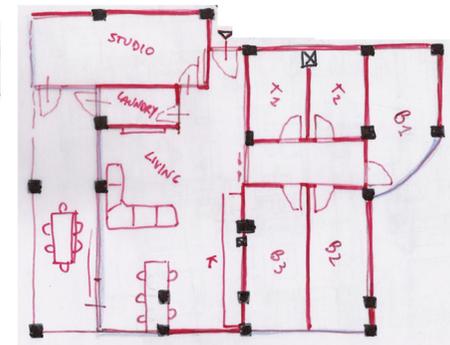


MAXIMUM FIT-OUT

For the maximum fit-out we maintained just the north wall to the entrance and we made changes in almost all the rest of



part of the building. We designed the house for students: for this reason we provide a big studio on the north west side that faces also on the big terrace on south west. The terrace is closed by huge french windows that enlight the big living and the kitchen. Also in winter the terrace can be closed to use the outer space. We connected the top right corner to the corridor with a curved glazing, to make the third bedroom bigger.



Q1**What did you find interesting in doing these exercises?**

In doing these exercises i have found interesting to design various hypotheses of project and to compare the various solutions to see what the best and the most flexible was.

Q2**What difficulties did you find in doing these exercises?**

There are two difficulties when I was doing these exercises. One is about placing kitchen and toilets, because that is limited to pipe shaft area and also limits the degree of freedom in designing. The other difficulty I found is that the narrow and long dimension of the given space.

Q3**What did you find interesting in the open building approach?**

I found very interesting the sistematic approach called Open Building because the possible combinations of infill and fit out allow us to get a flexibility of project after its construction. I also think that the concept of possibility of choice among different types of infill is very innovative and pratical for the final utents.

Q4**Do you think that some of the principles and skills of o.b can be applied to your current works (study, research, job)?**

Yes, i think so because the open building approach is a very flessible and economic way for design and construction, both for designer and final utents. I hope the Open Building technology will develop more deeply in order to garante us a great liberty on design.



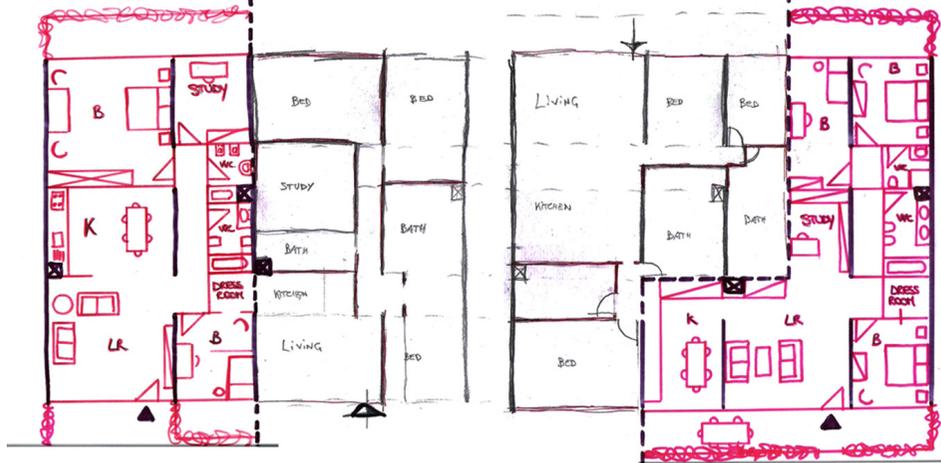
GAME 2

GAME 3

Division 1
Variant 1



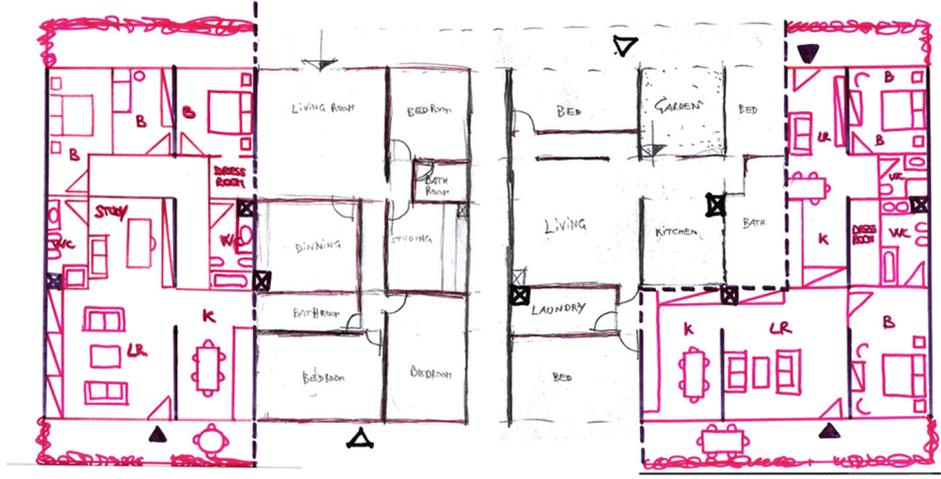
Division 2
Variant 1



Division 1
Variant 2



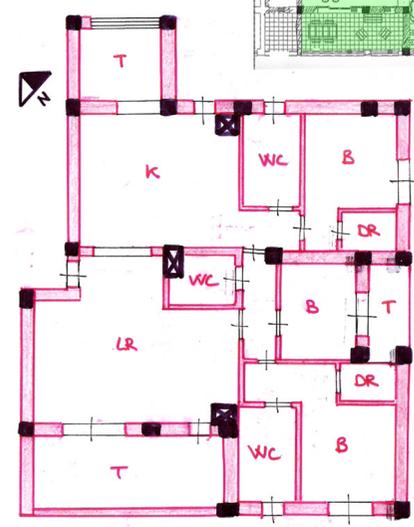
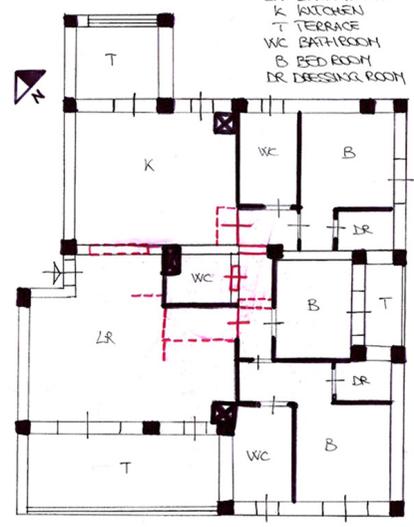
Division 2
Variant 2



Min. Infill

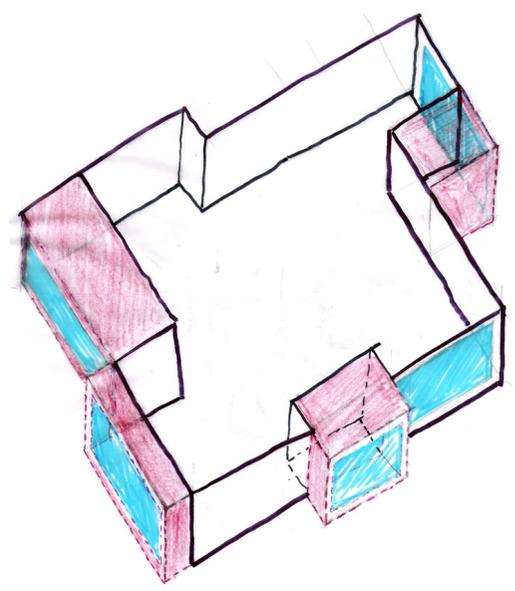
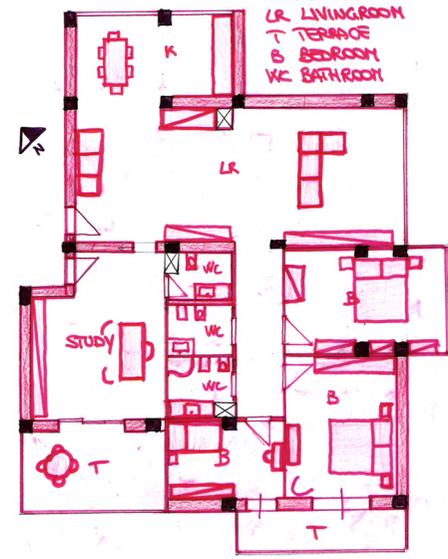
— INFILL
- - - REMOVE

LR LIVING ROOM
K KITCHEN
T TERRACE
WC BATHROOM
B BED ROOM
DR DRESSING ROOM



Max. Infill

K KITCHEN
LR LIVING ROOM
T TERRACE
B BED ROOM
WC BATHROOM



Q1: What did you find interesting in doing these exercises?

A: I found interesting : to design the infill giving attention to fixed plumbing systems and shafts and to design facade systems inside a very rigid layout with a lot of given constraints paying attention to sunlight and natural ventilation criteria at the same time; To find the best solution that satisfy many different user's preferences; to renovate existing buildings with a minimum of changes.

Q2: What difficulties did you find in doing these exercises?

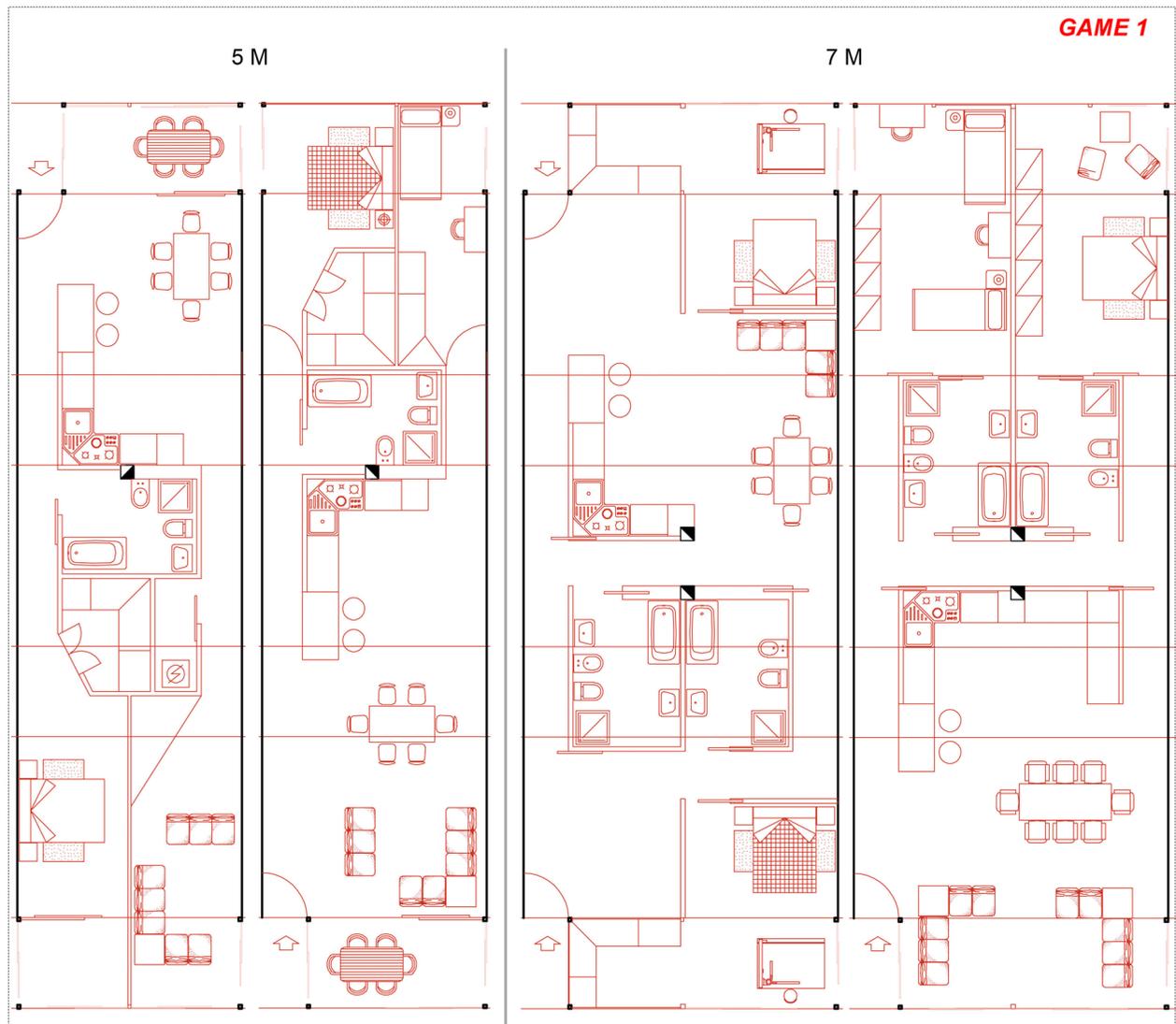
A: I found some practical difficulties in hand drawing and with the very short time we had for developing design ideas, even if I understand it has been useful to improve our skills. I found also some difficulties in the O.B. systemic approach and its tools that i haven't used in my training program.

Q3: What did you find interesting in the open building approach?

A: It's interesting: to conceive a project as a system of independent elements related one to each other; to think about a building as a tailor made dress where different parts are customized and can be replaced to reach a good level of environmental quality; the idea that, in the future perhaps will be possible to change house characteristics as we do with cars; to design in team involving users

Q4: Do you think that some of the principles and skills of o.b. can be applied to your current works (study, research, job)?

A: yes, absolutely. My work of thesis will focus on this topic. A few principles of the O.B. approach have been used in the first draft: the urban system is designed like a territorial infrastructure and dwellings will be hosted inside it. Users will be able to replace building's parts to enlarge or renew their houses in a low-cost and short-time way. They can also build their dwellings by themselves. The following step will focus on technical solutions rethinking fit out around pipe shafts and according to user's infill choices

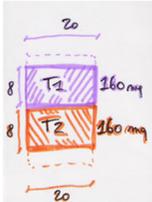
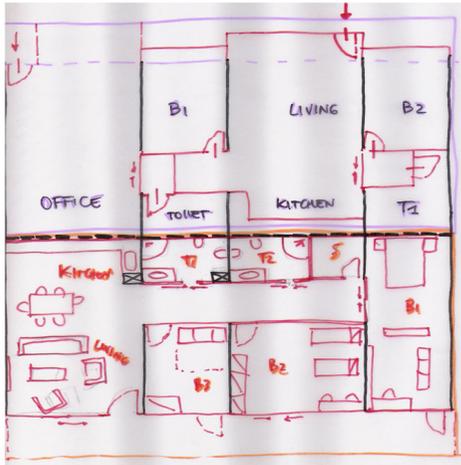


THE TWO METERS FAÇADE ZONE IS DESIGNED TO BE CHOSEN BY USERS, IT CAN BE COMPOSED BY CLEAR OR MATT PANES IN ORDER TO THE USERS NEEDS. ALTERNATIVELY IT MAY BECOME A LITTLE GARDEN.

ON THE BASIS OF PREVIOUS VARIANTS, MAYBE THE BETTER PLACE WHERE LOCATE THE PIPE SHAFT IS IN THE MIDDLE OF THE TERRITORIES: THIS LOCATION ALLOWS THE MAXIMUM FLEXIBILITY FOR SPACES MODIFICATION.

I THINK THAT MORE EFFECTIVENESS SHOULD BE OBTAINED PERFORMING EXERCISES WITH A COMPUTER SUPPORT: IT ALLOWS TO MAKE UP A FURNITURE AND MINIMUM SPACES DATA BANK TO COMBINE IN MORE VARIANTS. ALSO, A MORE ACCURATE GRAPHICAL REPRESENTATION COULD BE OBTAINED.

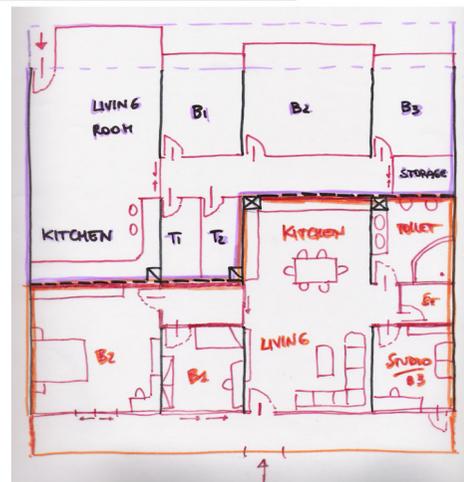
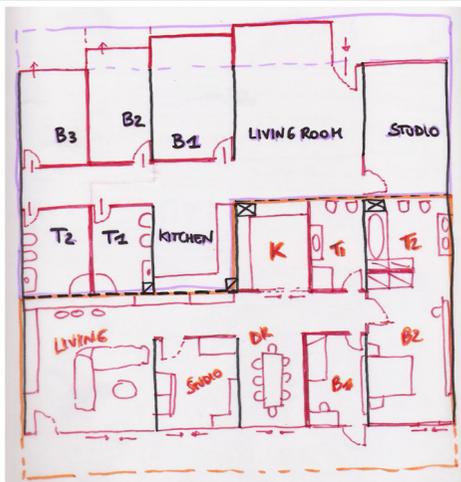
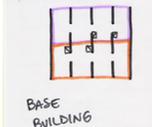
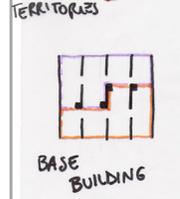
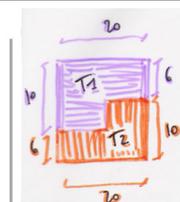
GAME 2



IN THE FIRST TERRITORIES DIVISION WE DID NOT OBSERVED SOME FUNDAMENTAL PRINCIPLES: WE DID NOT TAKE CARE OF THE BUILDINGS ORIENTATION, INDEED HORIZONTAL DIVISION AVOIDS SUITABLE NATURAL VENTILATION AND A FAVORABLE EXPOSURE.

MOREOVER THE ENTRIES SPACES' LOCATIONS WERE NOT WELL DEFINED YET THE FAÇADE SYSTEM IT IS STILL ONLY A DRAFT.

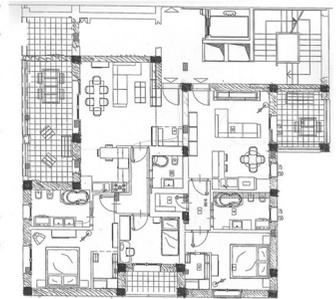
AS REPORTED BEFORE FOR THE FIRST EXERCISE, THE BEST PIPE SHAFT LOCATION WE RECOGNIZED IS IN TH MIDDLE OF THE TERRITORIES IN ORDER TO ALLOW THE MAXIMUM FLEXIBILITY FOR SPACES MODIFICATIONS.



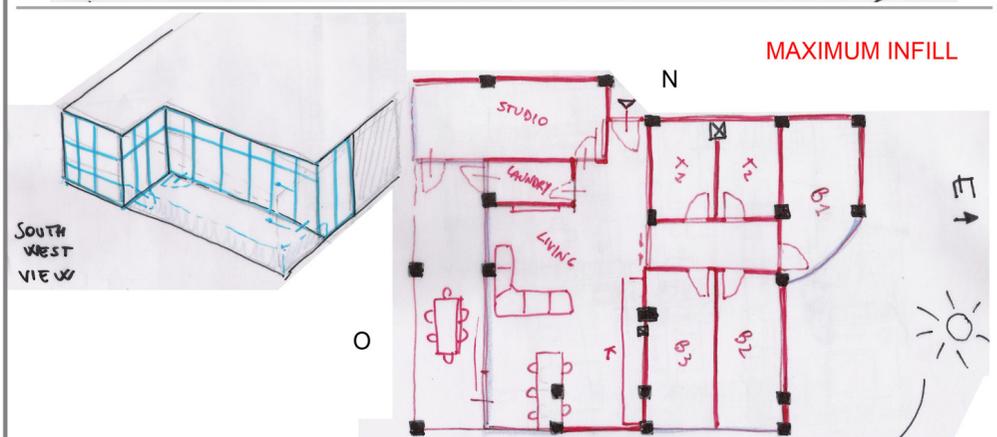
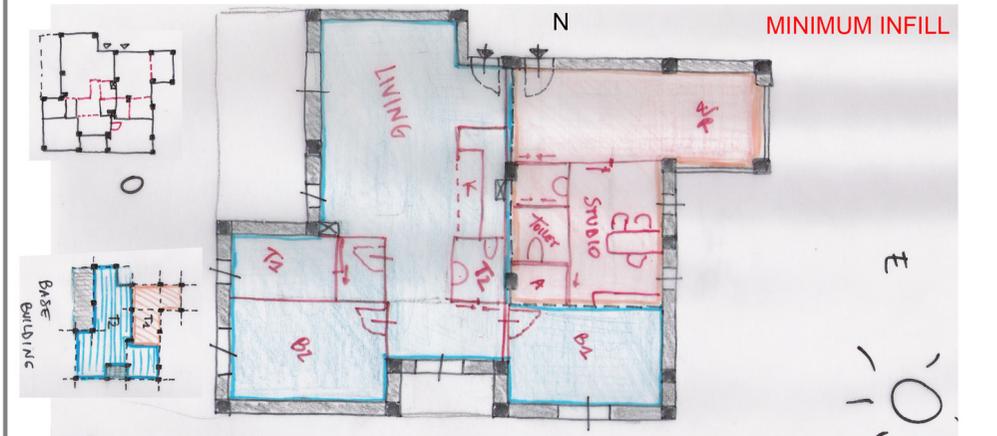
GAME 3

REGARDING THE MINIMUM INFILL WE IMAGINED THAT THE USERS' NEEDS CHANGES. THE AIM WAS TO ADAPT TO THEIR NEW REQUIREMENTS MODIFYING THE BARE MINIMUM. THE PIPE SHAFT WERE MAINTAINED IN THE SAME PLACE AS NEARLY ALL THE INTERNAL PARTITIONS.

ABOUT THE MAXIMUM INFILL WE REPLACED THE PIPE SHAFTS AND ALSO A FLOOR SLAB WERE ADD: PROBABLY THE FLOOR SLAB ADDITION THIS COULD BE CONSIDERED A RISKY CHOICE.



THE HOUSE IS THOUGH WITH A DISTRIBUTION OF SPACES WHICH FOLLOW THE SUN DAILY PATH ACCORDING TO THE SPECIFIC USERS' STILE OF LIFE. ANOTHER IMPORTANT ELEMENT IS THE BIG TERRACE THAT CAN BE CLOSED TO BECOME A WORKING AREA ADD. DESIGNED AS A POST-WORK DISCUSSION AREA FOR YOUNG ARCHITECT, IT IS ORIENTED TO THE WEST FOR ENJOYING THE SUNSET.



Q1: What do you find interesting in doing these exercises?

A: The thing I find most interesting in these exercises is the new approach to design, which is very different from the one I'm used to. I like drawing freehand, so that I can produce several sketches, which let you go into the problem.

Q2: What difficulties do you find in doing these exercises?

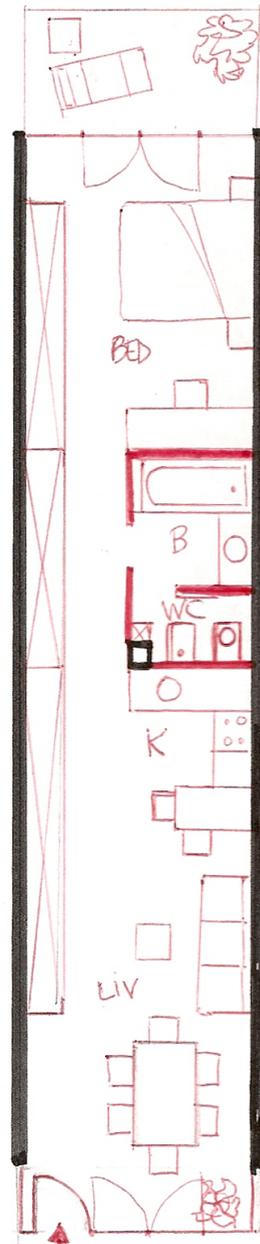
A: I had some difficulties in doing these exercises in such a short time, since I had to think very fast about different fits-out. The first fit-out you draw always seems to be the best one, so it's difficult to think about another one pretending you never did the first one.

Q3: What did you find interesting in the open building approach?

A: I find it interesting designing through two different layers: the open building first and the infill then. I think that it's very important to customize the apartments and let the client take part to the decision-making process, according to his needs.

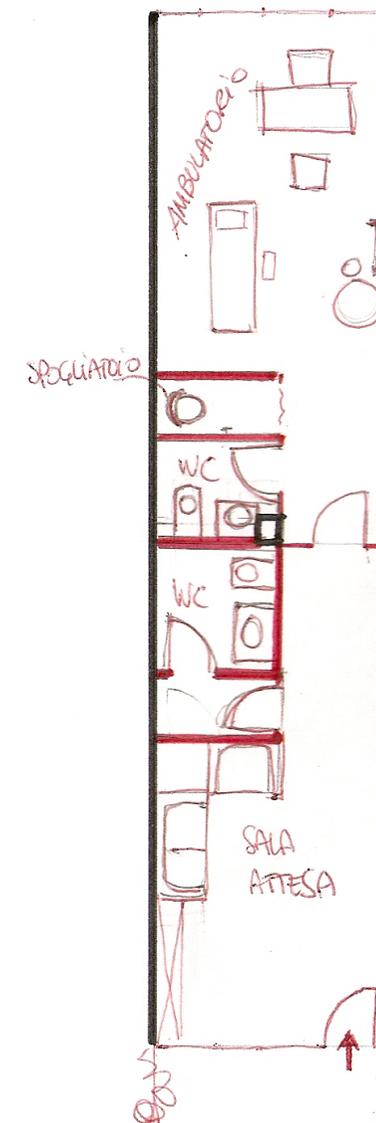
Q4: Do you think that some of these principles and skills of o.b. can be applied to your current works (study, research, work)?

A: I'd like to study in depth the theme of flexibility and consider it in my future works. This way, I can have a complete approach to projects, which includes the environmental point of view and combines it with design.



1 ST SOLUTION : APPARTMENT

Locating the pipe shafts is fundamental. Their central location gives the chance to distribute the bathrooms and kitchen in the less lighted areas, while I can make optimum use of the more lighted areas.

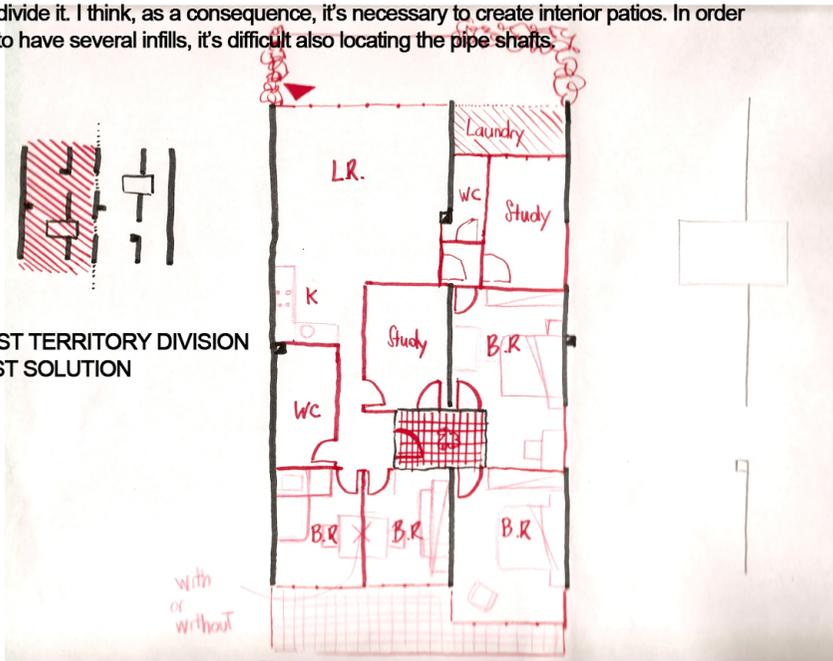


2 ND SOLUTION : AMBULATORIO

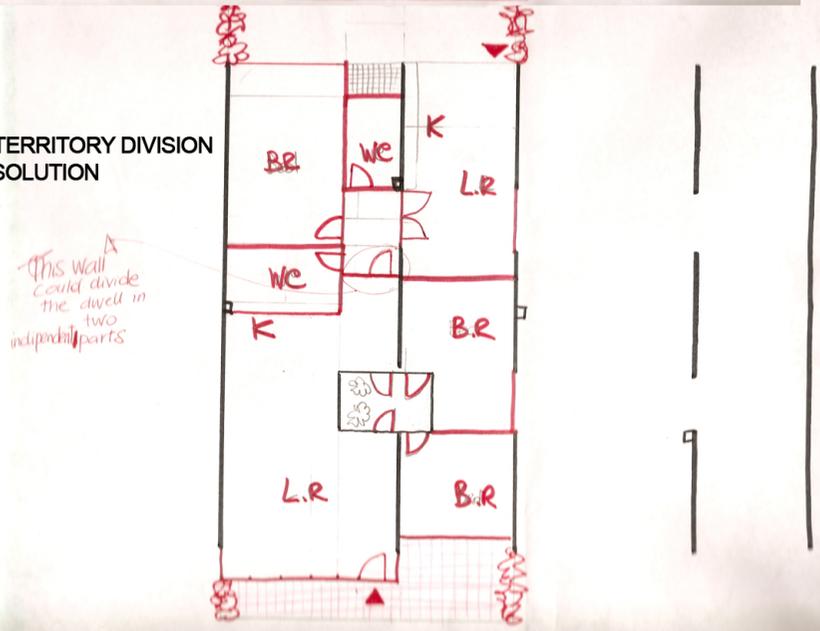
I find some difficulties in this play, since the living space is very deep, anyway I divide it. I think, as a consequence, it's necessary to create interior patios. In order to have several infills, it's difficult also locating the pipe shafts.

GAME 2

1 ST TERRITORY DIVISION
1ST SOLUTION

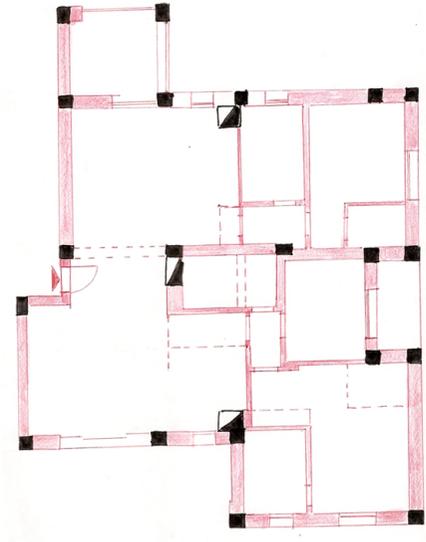


1 ST TERRITORY DIVISION
2ND SOLUTION

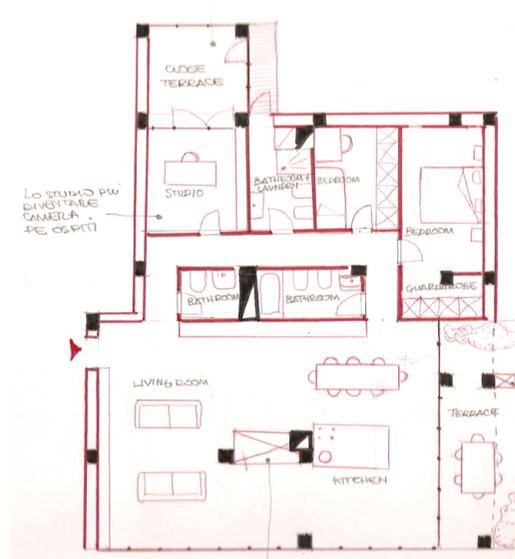


The shape of this building allows a lot of design freedom. The location of the pipe shaft gives the chance to divide the apartment in two areas (day and night), both with bathrooms.

GAME 3



MINIMUM INFILL



MAXIMUM INFILL

Q1: What did you find interesting in doing these exercises?

A: In these plays I found interesting to work in a team. I really like when during the design development I can have a constant discussion with teachers and my colleagues. In this way you can see a problem from different points of view and get a better analysis of its features. I also found interesting the O.B. method where you have to think at the base before and at the fit out later.

Q2: What difficulties did you find in doing these exercises?

A: I think we had a very short time to do the exercises; It was difficult to find time enough to think about project and sketch the solutions. I found also some difficulties in drawing proportioned walls and furnitures without given measures.

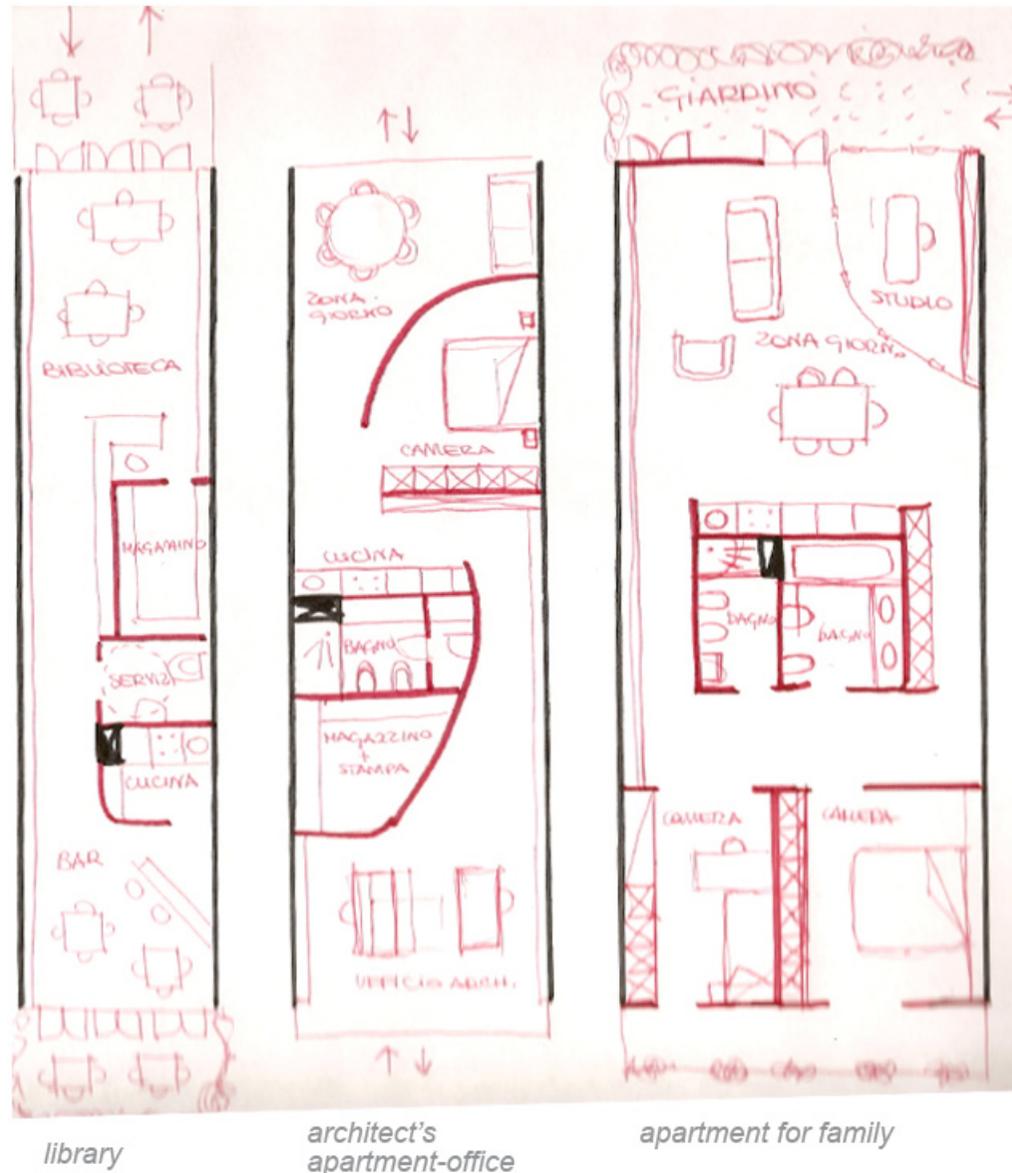
Q3: What did you find interesting in the open building approach?

A: I found to make out flexibility as the heart of the design problem. This approach combines technological issues with compositive and distributive aspects. Both these features must merge together to better satisfy user's needs.

Q4: Do you think that some of the principles and skills of o.b. can be applied to your current works (study, research, job)?

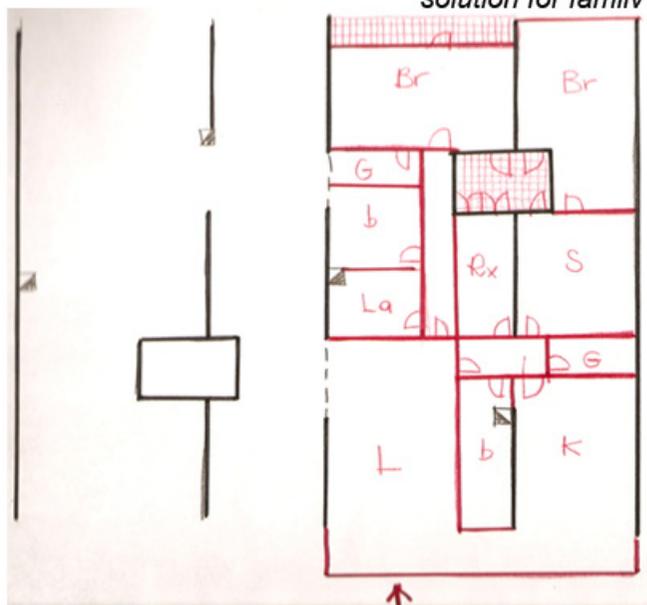
A: I think that flexibility is a fundamental concept in design and I would like to use it widely in my future works especially in residential buildings. I find it's also important to consider users preferences as a whole and to use flexibility to solve some of the related issues.

GAME 1 I find it very interesting to locate the piping shaft first, before going on with the design. This way, I can have more flexibility to study and arrange the prospective fits-out.

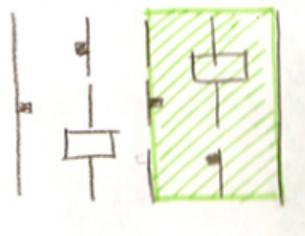


GAME 2

In this exercise, the challenge was creating, from the same base building, a fit-out for a family house and another one for a students' house.

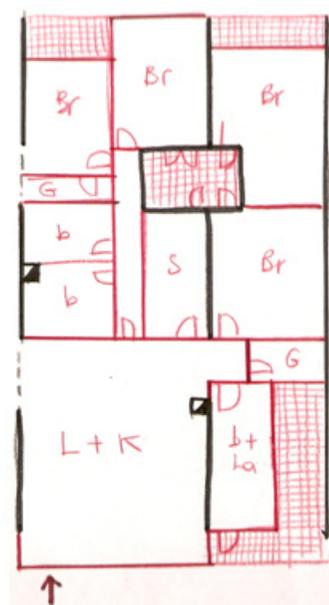


solution for family



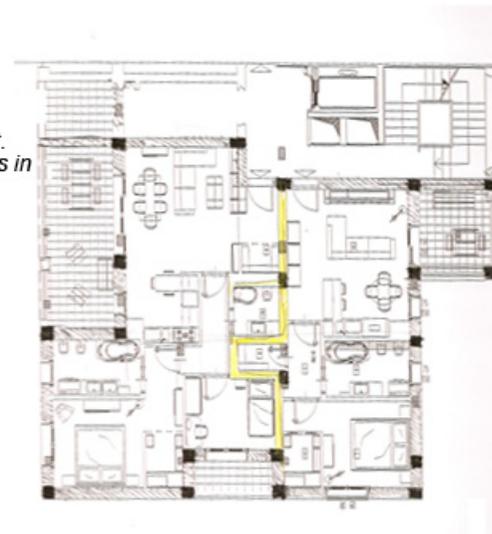
Br= bedroom
 b= bathroom
 s= study
 Lr= living room
 K= kitchen
 La= laundry
 G= wardrobe
 Rx= relax

solution for students

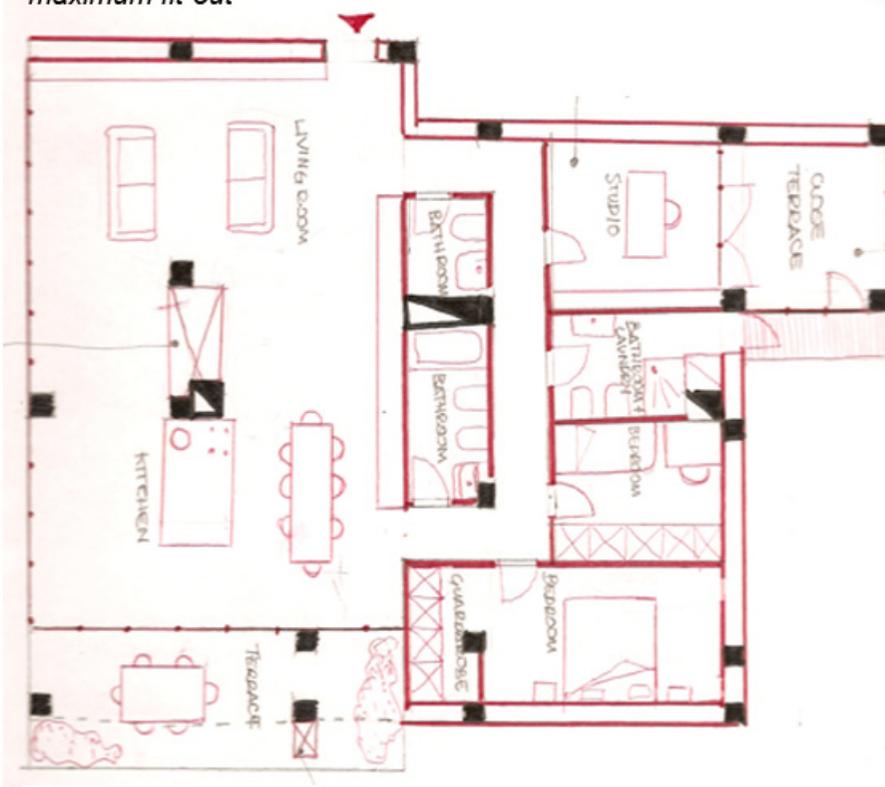


GAME 3

I find it more interesting to deal with the maximum fit-out than the minimum fit-out. The first one allows me to have less limits in designing the façade and the plan.



maximum fit-out



Q1: What did you find interesting in doing these exercises?

A: I think it's very important to focus on issues such as autonomy of dwelling units or participation of users in the design process. Doing the exercises I thought about these topics.

I thought also that it was interesting to look for a design solution starting from a base building with pipe shafts constraints.

Q2: What difficulties did you find in doing these exercises?

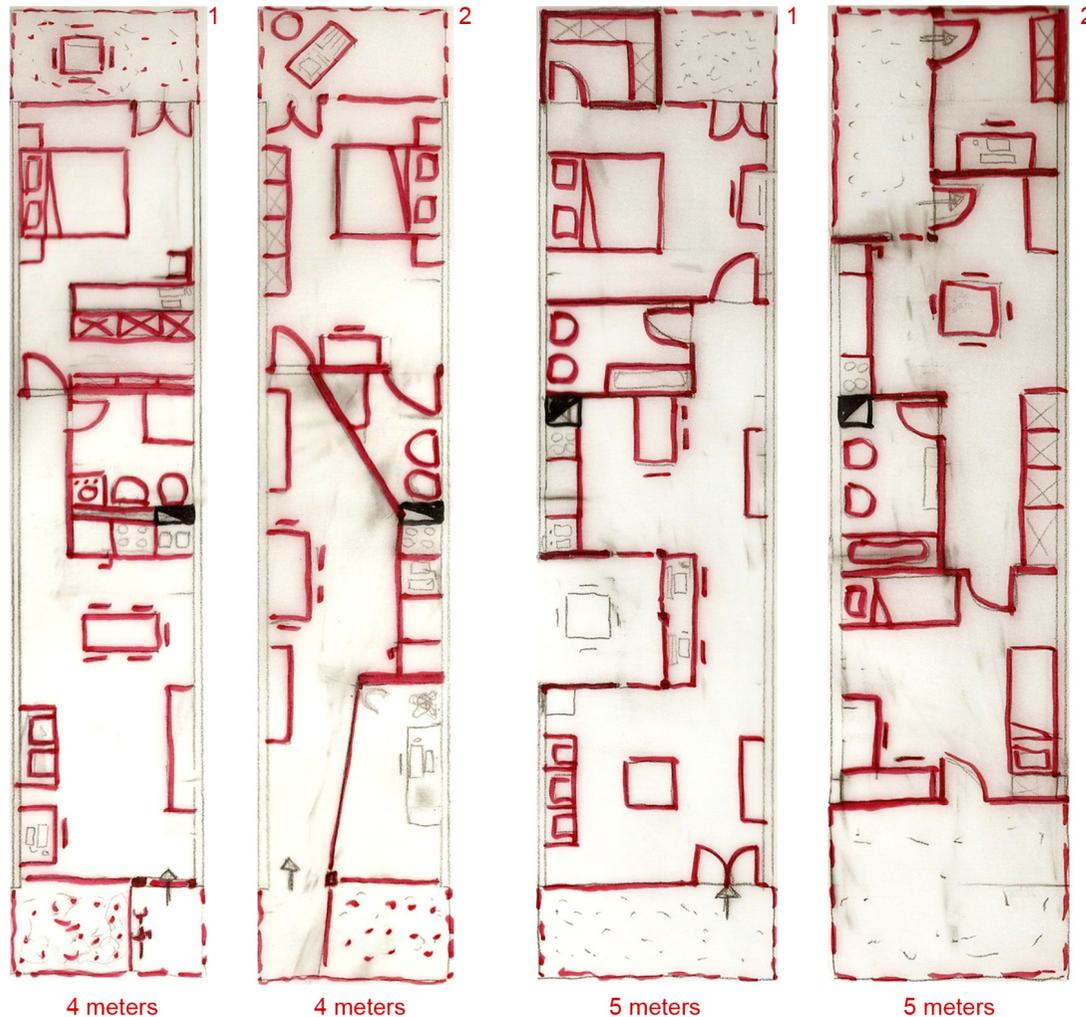
A: The greatest difficulty I found in doing the exercises was about the placement of kitchen and sanitary equipment, that is limited by the position of pipe shafts. This hardly limit design freedom but I understood that is better to put them far one each other to obtain a better flexibility.

Q3: What did you find interesting in the open building approach?

A: I found very interesting the systematic approach of Open Building and the need for rules which can regulate the wide number of infill possibilities saving flexibility at the same time. It's also interesting the principle of users participation to design process. In this way built environment transformations can be addressed and settled rather than left to chaos.

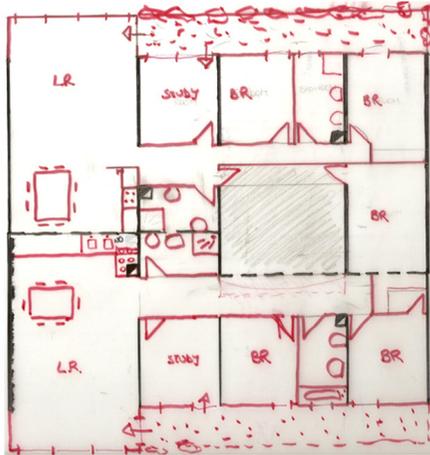
Q4: Do you think that some of the principles and skills of o.b. can be applied to your current works (study, research, job)?

A: I think that the development of O.B. is a good chance to combine the potentiality of technology engineering with industrial production to obtain a better and more variable housing environment. O.B. approach is also a good balance between building technology and spatial control.

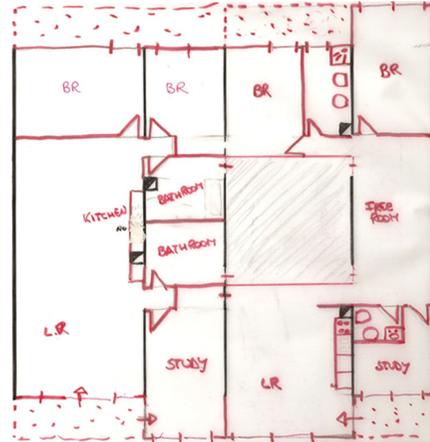


GAME 2

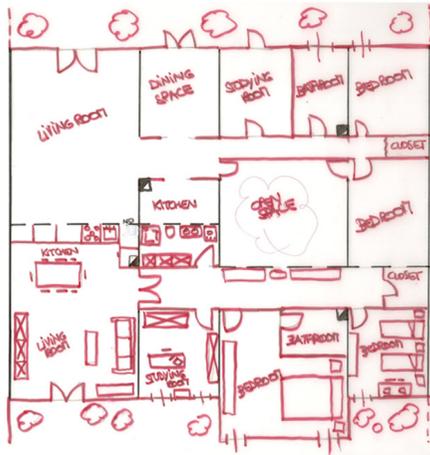
Division 1
Variant 1



Division 2
Variant 1



Division 1
Variant 2

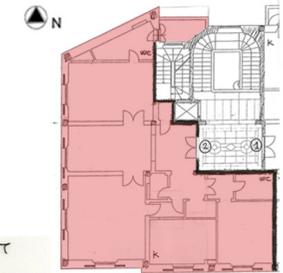
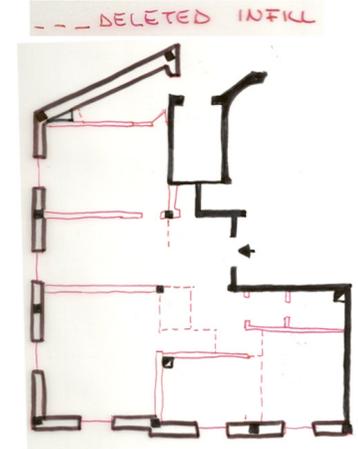
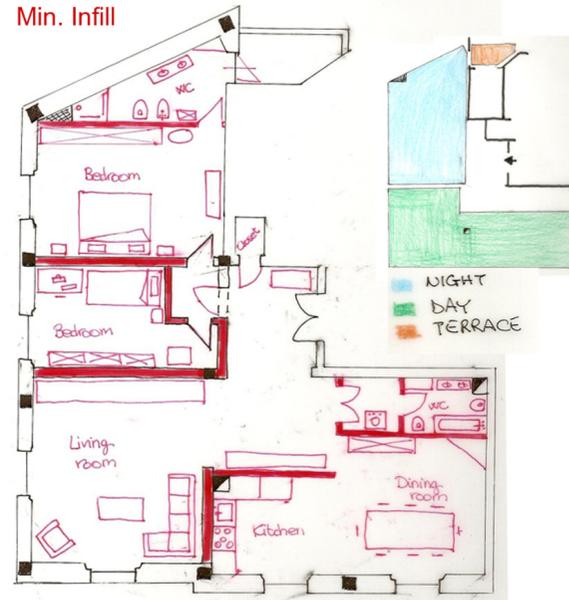


Division 2
Variant 2

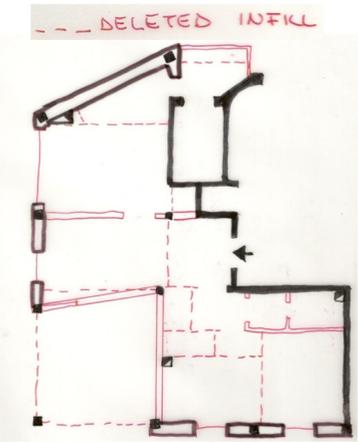
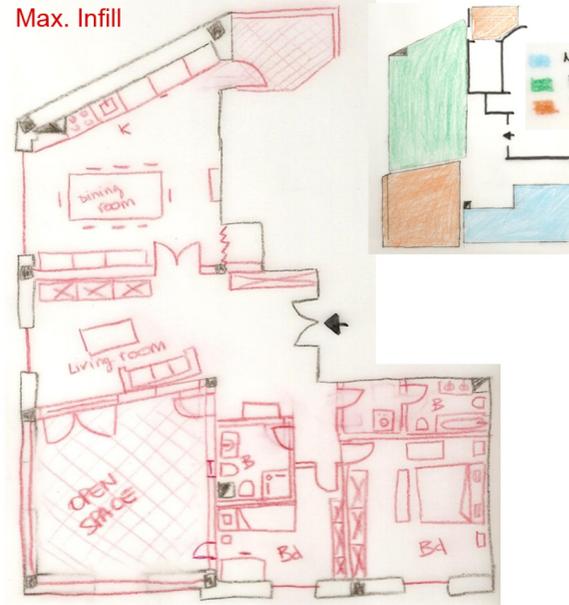


GAME 3

Min. Infill



Max. Infill



Q1: What did you find interesting in doing these exercises?

A: I think that the most interesting thing in plays has been the call for a great number of different design solutions in spite of many rules and entanglements. Maybe the most interesting solutions have been those that better respected all given restrictions

Q2: What difficulties did you find in doing these exercises?

A: The difficulties, not so great indeed, have been related to the plans given in the plays; they were long and narrow, without any possibility of openings on the external boundaries. In the second play has been more complex for me to position internal walls to define new apartment territories using the given plans.

Q3: What did you find interesting in the open building approach?

A: The interesting thing about O.B. approach is the division between base and infill. These independent parts can be designed by different professionals in different moments. It's positive that with this method the design process is based on built elements life: from the long lasting as structures to the shortest and easy to replace as furnitures.

Q4: Do you think that some of the principles and skills of o.b. can be applied to your current works (study, research, job)?

A: Sure, it's important to use O.B. concepts and flexibility in all projects, in residential, commercial and service building as well, to optimize comfort levels and building materials recycling.

In all games have been predisposed two different solutions, in respect to the north position. The first exercise has been developed by considering internal diagonal infill, in order to optimize the entrance of the light and to widen the space.



GAME 2

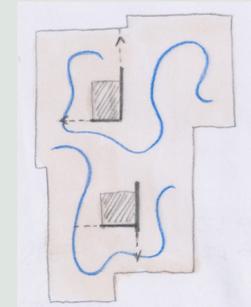
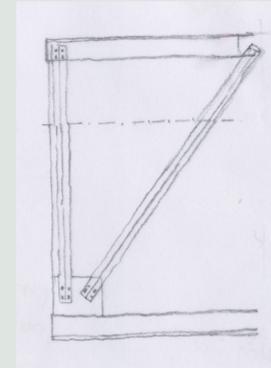
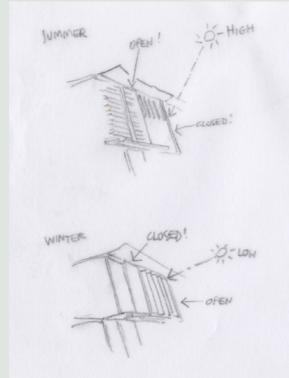
The second game has been more complex. The plan with the internal septa has been divided in two different apartments. It has been interesting to play with the facade for a compositive factor and in order to optimizing the light. It has been inserted a patio, that can be used by both the apartments. This allow the entrance of natural light.



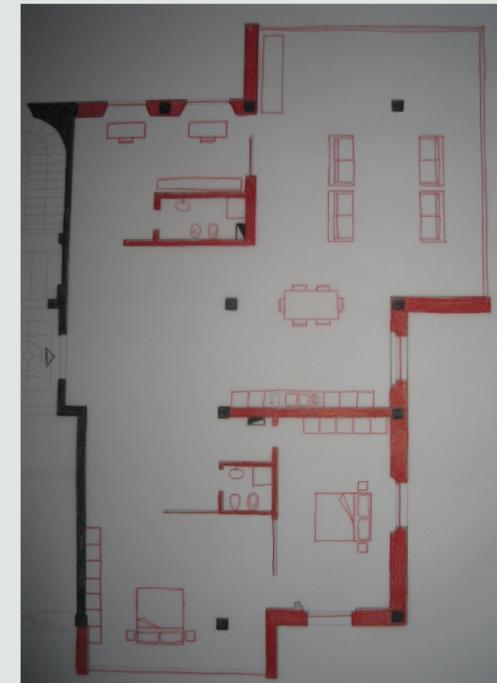
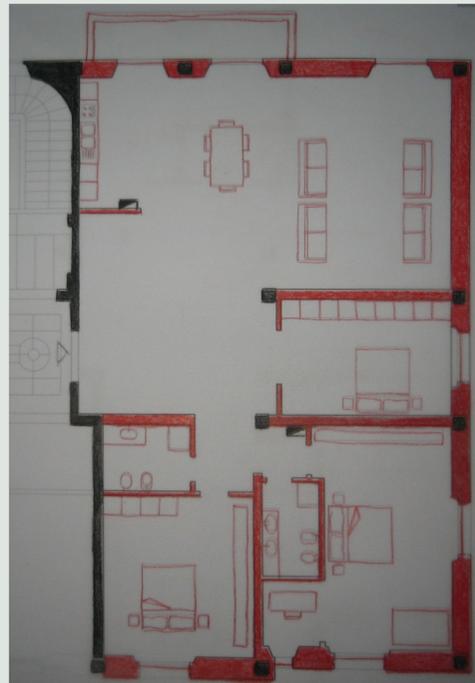
GAME 3

The third exercize has been the most interesting, because more concrete.

Besides minimizeng and maximizing the infill I have attempted to develop technical solutions for the architectural problems.



Open space's concept with mobil wall.



Q1: What did you find interesting in doing these exercises?

These exercises were very interesting because they could explore one new concepts or ways of working as well as solving problems. In particular, each exercise allowed itself to abstract from the full complexity of a real project, analyzing some environmental levels to the others in a hierarchy of dependencies

Q2: What difficulties did you find in doing these exercises?

The difficulties were concentrated in the early exercises in the excessive depth of housing, brought on by in the layout solutions

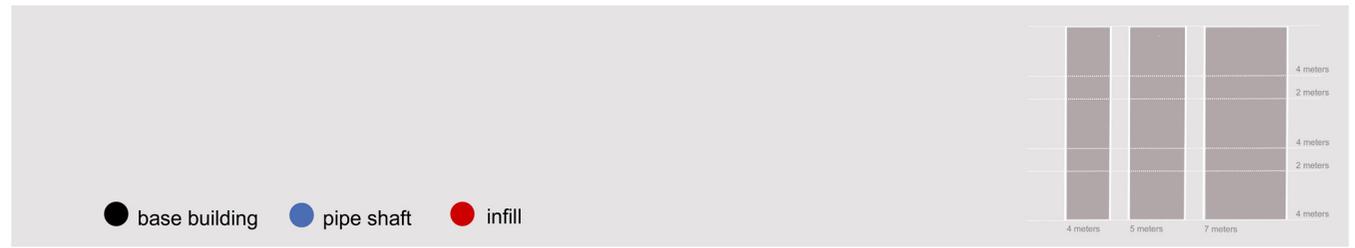
Q3: What did you find interesting in the open building approach?

I think that the o.b. is a very interesting approach, that recognizes that the built field is under constant change

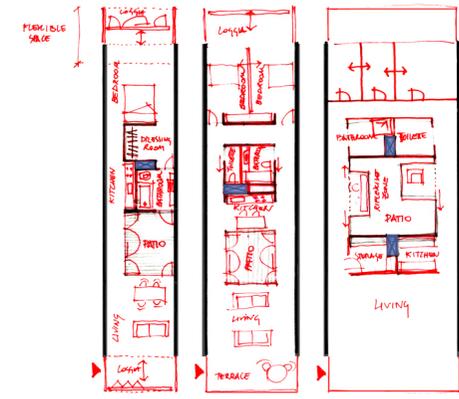
For example the adapting of a non-hierarchical layout with the help of changed infill, it transforms itself readily according to the nature of the activities, number of inhabitants and personal preferences

Q4: Do you think that some of the principles and skills of o.b. can be applied to your current works (study, research, job)?

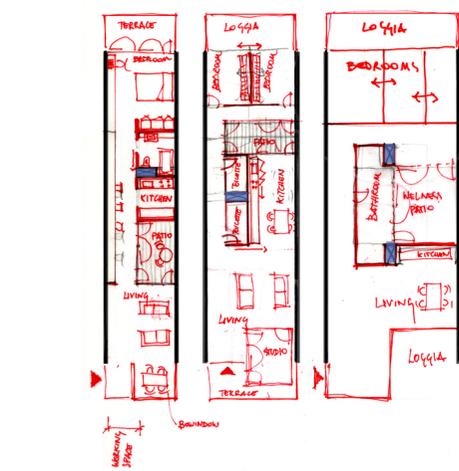
I'm very interested to concept of reversibility and adaptability of space system for my phd research and my professional job of architect because I think the project can not disregard the users and changeable user needs. Reversibility, including for example, light reparability and the possibility of replacing equipment and building service in general, will guarantee a functional and therefore efficient use of the material's life cycle



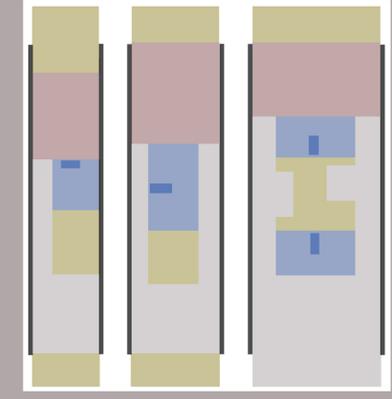
layout 01



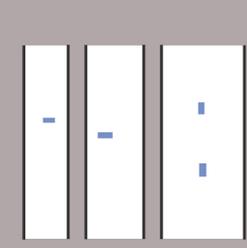
layout 02



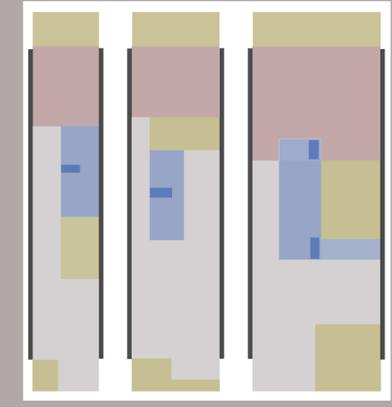
functional areas 01



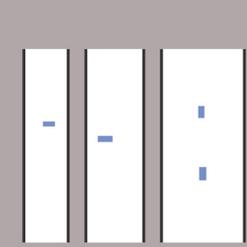
fixed elements 01



functional areas 02

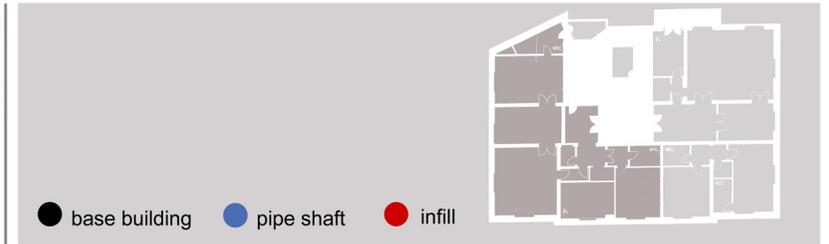


fixed elements 02





GAME 02

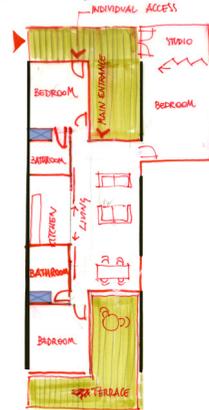


GAME 03

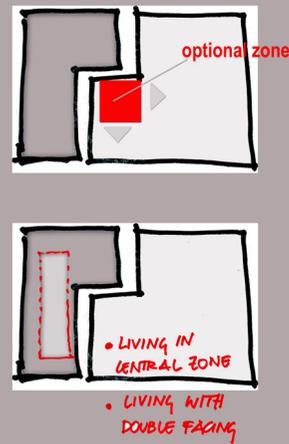
layout 01|a



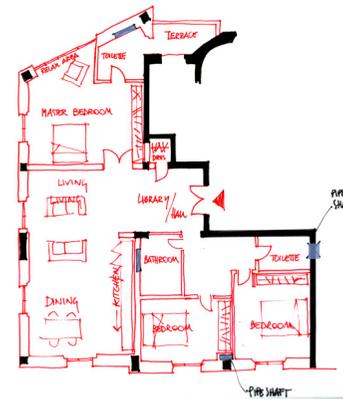
layout 01|b



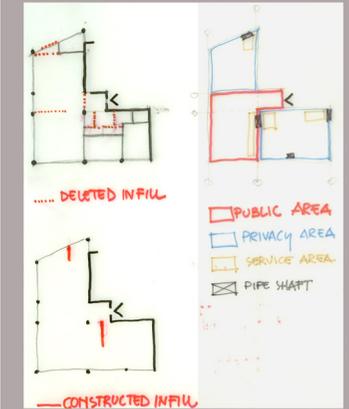
solution 01



layout 01



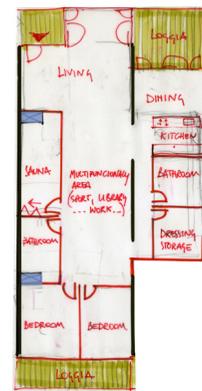
solution 01
minimum infill



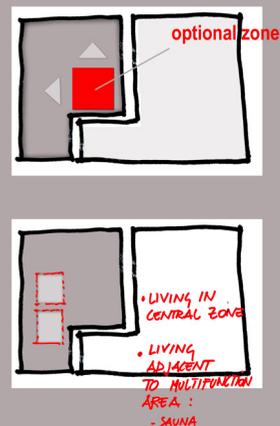
layout 02|a



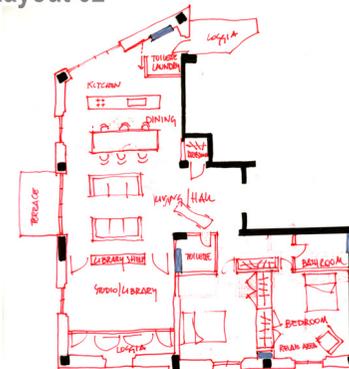
layout 02|b



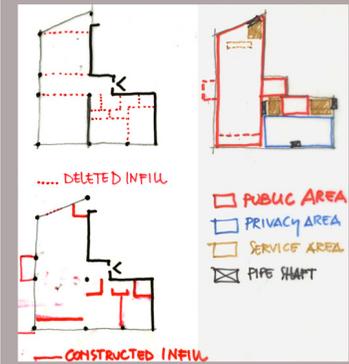
solution 02



layout 02



solution 02
maximum infill



Q1 What did you find interesting in doing these exercises?

For me, this is my first time for taking part in this kind of exercise. And I have extremely enjoyed it, although there was hot and sweaty during our hard long-time work. However, at the beginning, I was wondering the function of the narrow and long spaces given by Professor. While, at the end, I realized that that is the key point of this interesting exercise, for the sake of making the rigorous more reasonable and creating more function spaces.

Q2 What difficulties did you find in doing these exercises?

I found that getting more sunshine and natural ventilation in this rigorous spaces were difficulties with so pressing time. Also, I was accustomed to use my native way to consider them and created small space only for single person without thinking over the differences between China and Europe culture.

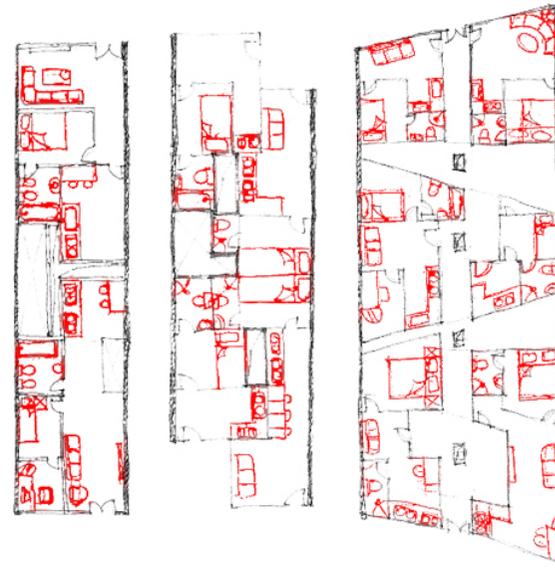
Q3 What did you find interesting in the open building approach?

Architecture in the true sense is the ability to abstract the utility value of a building to a cultural level-to go beyond the specific demands which a building has to meet and attain a level at which architecture achieves a cultural positioning and in which individual visions have a place.

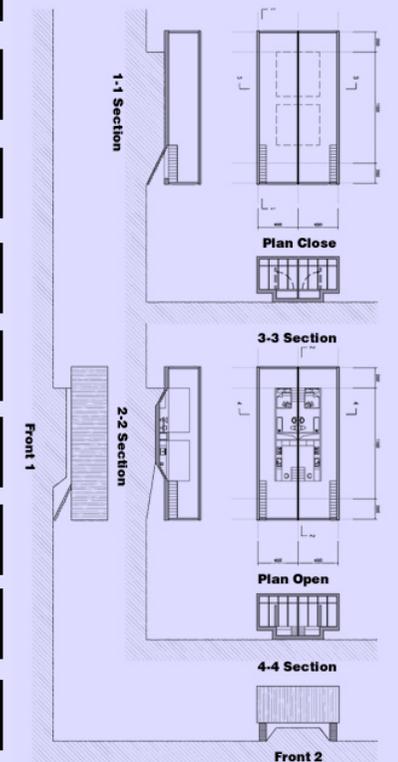
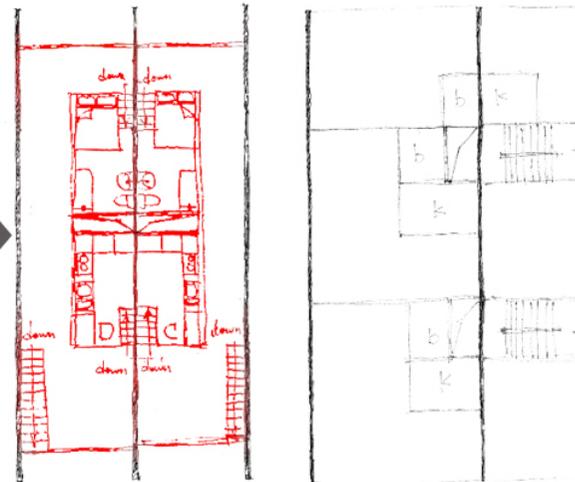
Q4 Do you think that some of the principles and skills of o.b can be applied to your current works (study, research, job)?

I did appreciate the o.b approach and I have anatomized the article supplied by Professor. Some of the principles and skills could be utilized for my research. I would like to show them in the following papers.

The first two designs pursue more sunshine and ventilation. Speaking about the third design, I did my utmost to make the space more flexible and create contact space for each single small department which supplied for single yong person.

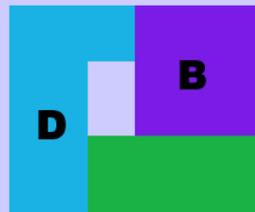
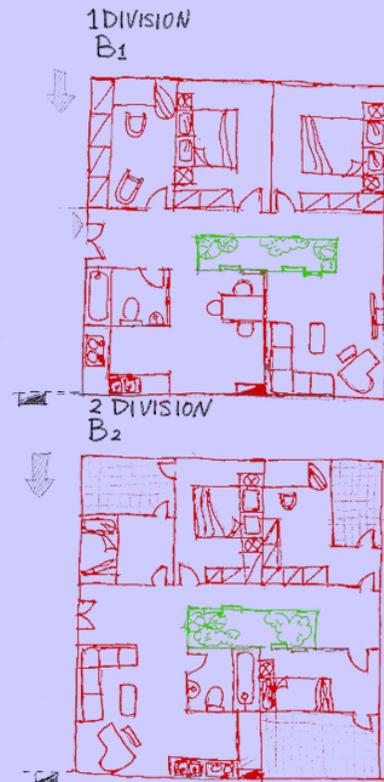
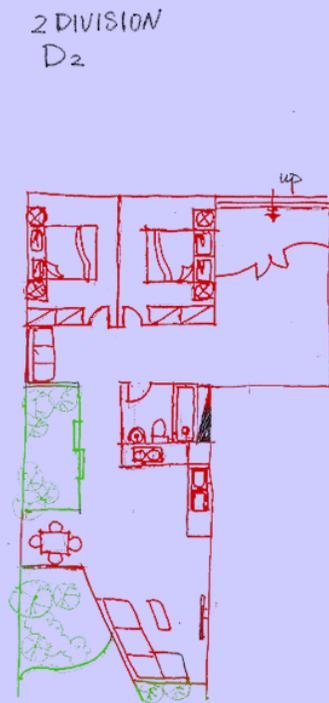
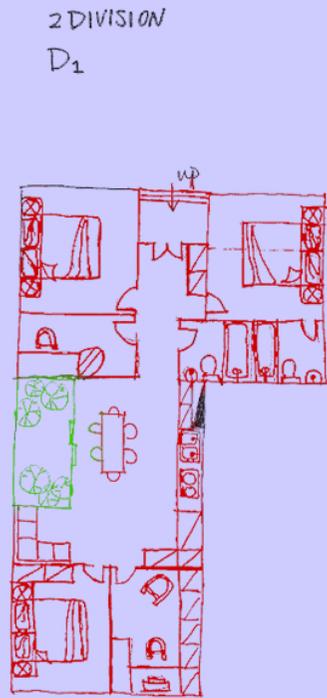


In terms of the second design, we divided the whole Plan into three parts and designed the infill for each of them. Plus, according to the large space, I created the green open space inside for sunshine and ventilation. It may become the key point for all the home.



This design was did after the Open Building activities with Professor Kendal, because I did enjoy it. The inspiration was coming from a villa in Beijing which was designed by a Hongkong architect. I try to make the narrow long space for getting more sunshine and bigger activity room. The floor can be flexible with the open and close functions. When the floor closed, all the space is unitary without any block, in order to getting maximum natural ventilation and sunshine!

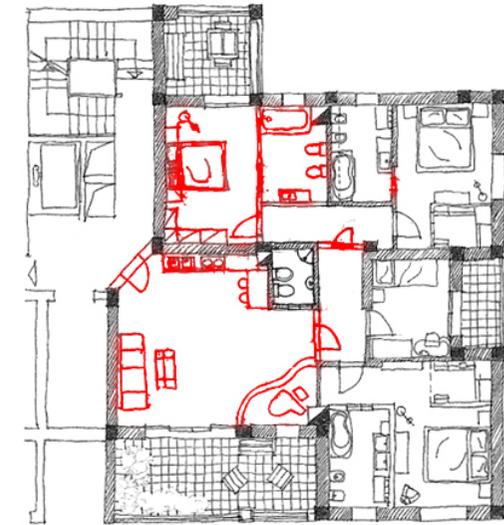
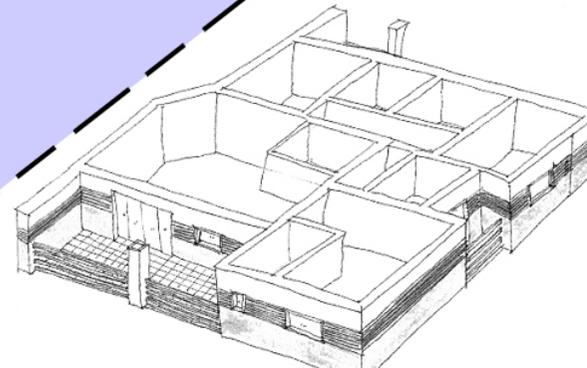
1



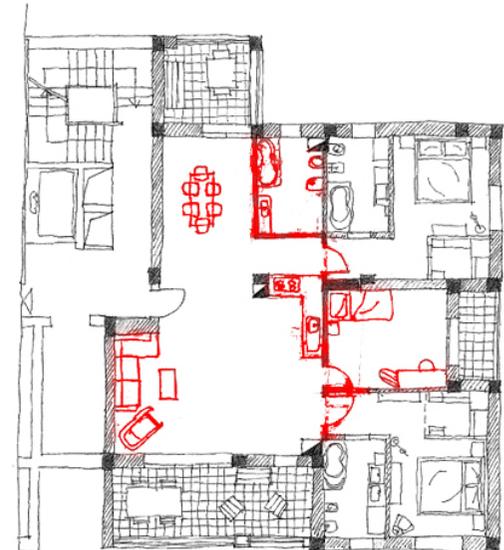
Play 2

In terms of the second design, we divided the whole Plan into three parts and designed the infill for each of them. Plus, according to the large space, I created the green open space inside for sunshine and ventilation. It may become the key point for all the home.

Play 3



MINIMUM INFILL 1



MINIMUM INFILL 2

2

Questions

Q1: What did you find interesting in doing these exercises?

team work these exercises introduce us in the Open Building OB approach, the OB rules are a simple and useful framework for the collaboration between the members of a team work.

In exercises 1 we did practice with the infill and based building theory, we drew infill elements with the red sketches and base building with the black one, these rules give balance to the representation and it is an unambiguous way to read the drawings of our fellows. In exercise 2 we divided the actions of planning in three divisions, therefore we could do a big work in a short time.

time the clear way of the rules OB have a positive effect on the plan, it reduces time to produce the drawings because the rationality of the process gives us the possibility to draw quickly our design choices.

Q2: What difficulties did you find in doing these exercises?

The most important difficult of these exercises it's that we have to produce many drawings in a short time, therefore we have to organize quickly our work to respect the deadline.

Q3: What did you find interesting in the open building approach?

The open building approach divides in levels the planning process, the divisions could be realize also if the members of the team group are not in the same place or they are not working in the same time, and that it's interesting because it improves the possibility of a collaborative team.

Q4: Do you think that some of the principles and skills of o.b can be applied to your current works (study, research, job)?

At first the workshop of OB gives me the possibility to know the work of the Commission CIB W104 and consequently it is an occasion to learn and deepening this field of research.

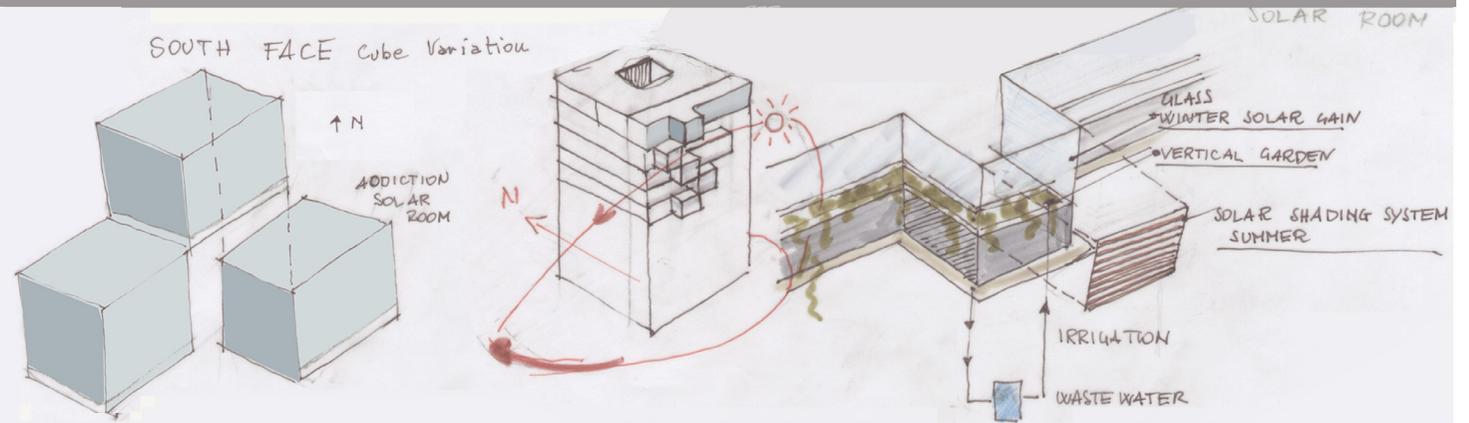
The OB principles are useful for job, because with this approach it is possible to organize the steps of a planning process, in particular it could be useful in a design competitions where it is necessary to do a collaborative work and to divide the different inputs coming from the members of the team work.

RULES

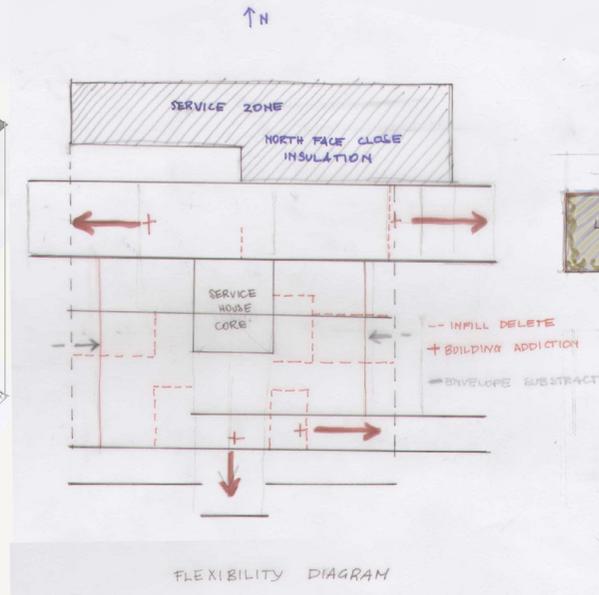
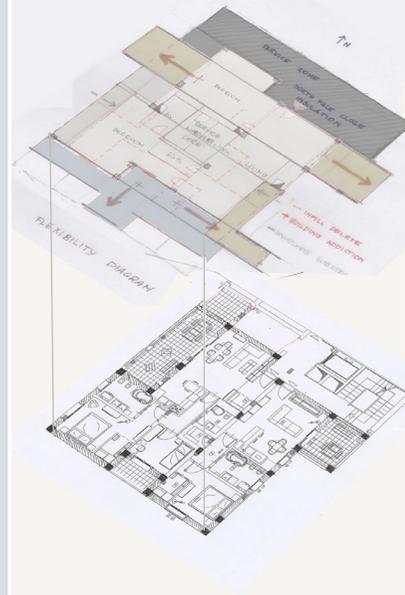
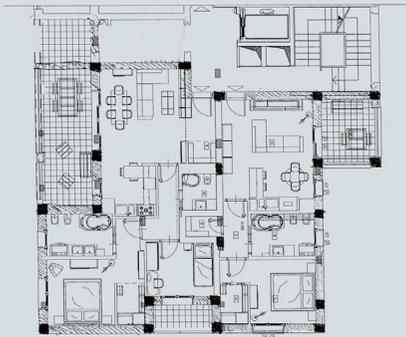
Addition on south façade with cube variation

Subtraction of envelope on W-E façades

Close North façade with service zone



-  pipe shaft
-  infill
-  base building



francesca nesi