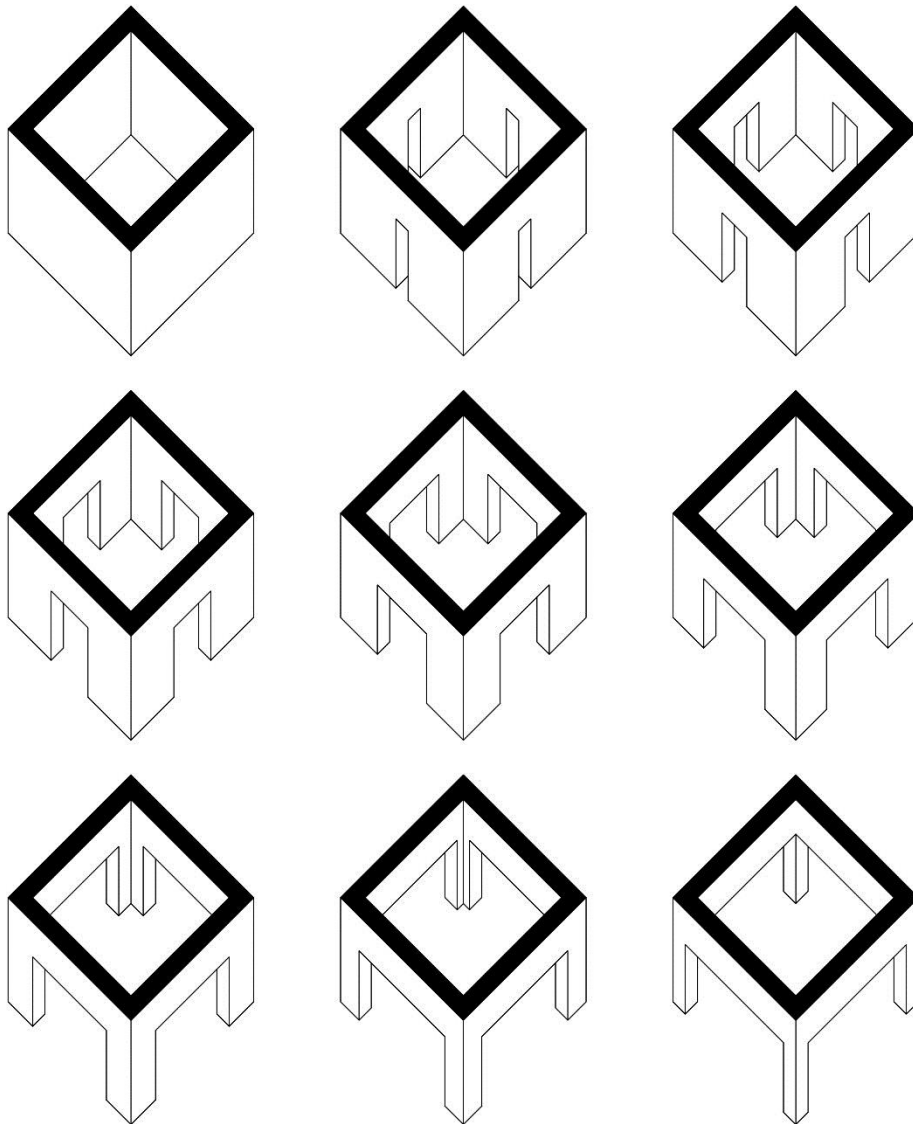


CONFERENCE: Obsolescence and Renovation – 20th century housing in the new millennium

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BEYOND CONTINGENCY SUSTAINABLE DESIGN VERSUS OBSOLESCENCE

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INTRODUCTION

Architecture has always been acknowledged to be a permanent human artefact. This characteristic differentiates it from consumer goods and allows humans to dwell on a long term basis. Yet, this permanence is being challenged since inhabited spaces become obsolete at an increasingly rapid pace.

This obsolescence is due mainly to the fast evolution of three factors, reflecting each principle of the traditional Vitruvian triad: changing ways of life - *utilitas*, evolving construction techniques - *firmitas*, ever-changing aesthetic codes - *venustas*.

Different architectural approaches have been espoused on how to address this issue of constant changes.

Some - Gerrit Rietveld, Kisho Kurokawa ... - seek in space flexibility a solution for the uncertain future uses in buildings. Thus, adjusting to changes is made possible through the use of adaptable spaces. Moveable features, expanding devices, transformable structures, etc. allow for varying functional demands. These strategies address primarily the unpredictable *utilitas* obsolescence.

Others - mainstream sustainable design - focus on the *firmitas* changes, depicting obsolescence as a technological problem. In this case, architecture is mainly driven by technical or structural considerations such as innovative construction systems and materials, thermal insulation, HVAC issues ... Consequently, what is generally recognized as an overall sustainable design only addresses one of the factors of obsolescence.

Thirdly, some - John Pawson, Andreas Ruby ... - argue that a counter tactic to obsolescence would reside in a timeless formal design. As such, this design could overcome ever-changing styles. This approach to obsolescence is primarily a *venustas* one.

Eventually, some architects - Le Corbusier, Rem Koolhaas ... - regard obsolescence as an end in itself, advocating short-life buildings. According to them, regeneration should undergo a demolition process, recalling the modernist's *tabula rasa*. Architecture is seen as a throwaway consumer product unable to pass the test of time. Hence, permanence is no longer regarded as one of architecture's main attributes and superseded buildings should be torn down every twenty-five years when they are outperformed by more suitable ones.

PERMANENCE IN A WORLD OF CHANGE

Obsolescence is caused by changes in one or any combination of the *utilitas*, *firmitas* or *venustas* principles, jeopardizing the equilibrium of the Vitruvian triad. The four approaches listed above try to address the obsolescence issue. But, whereas the first three widely overrate one of the Vitruvian principles in resolving the issue while leaving the other two aside, the fourth one dismisses them all at once.

Another approach facing obsolescence would be to reassess its causes. Undeniably, changes lie within every principle of the triad. The above approaches try to understand and respond swiftly to those changes in keeping with their fast pace. Yet, "*the rapid obsolescence of all too specific solutions leads not only to dysfunctionality but also to serious inefficiency*"¹. Therefore, instead of addressing immediate change, one could try to figure out what is resilient to change, what is permanent.

The question that arises is whether it is possible to produce architecture relying on essential features that are permanent. If fast changes primarily affect secondary features, is it possible to produce an

architecture discharged from functional, technological or formal contingencies? Architecture beyond contingency.

On the one hand, essential elements - archetypes - are permanent and slowly evolving features. Archetypes can be considered as the underlying principles of architecture. Some - Auguste Perret, Bob Van Reeth ... - speak of those as the future ruins of architecture, what is left once the unnecessary is gone.

On the other hand, secondary elements - contingencies - are changeable and replaceable according to fashions and transitory cravings. Contingencies are the superficial features of architecture. Due their very nature, contingencies are more vulnerable to change and they tend to experience a quicker depreciation in time. Consequently, architecture that relies too much on the latter would be exposed to a swift and overall obsolescence.

As Wittgenstein declared, *“the difference between a good and a poor architect is that the poor architect succumbs to every temptation and the good one resists it”*². The temptation of contingencies can be found within all three Vitruvian principles, recalling the first three approaches responding to change listed above. Functionalism seeks in function alone the driving force of design. Formalism, tries to counterbalance this approach, yet falls for a blind fascination for aesthetics. Finally, technicism tries to tackle change through pure technological knowledge. All three monovalent temptations fail to give a balanced answer to obsolescence.

Distinguishing permanent archetypes from contingencies is therefore fundamental. Once that is achieved, considering architecture beyond contingency would allow considering all three Vitruvian principles with a maximum chance of evolution. A design based beyond contingency maximizes its future uses, technical evolutions and formal expressions, providing a sustainable way to challenge obsolescence altogether.

A PRIMAL DIMENSION: THE ROOM

In order to put this assumption to the test - architecture beyond contingency as a sustainable way to challenge obsolescence - a few cases will be analyzed.

Among permanent things in architecture, the room stands out as a central issue ever since the primitive hut. Louis Kahn saw the room as *“the beginning of architecture... Architecture comes from the making of a room”*³. The room is the primal artefact in any human dwelling. It can therefore be considered as the minimal dimension from which the question of permanence can be questioned.

Yet, rooms are not equivalent. Uses, formal expressions and technical implementation vary a lot between a monastic cell, the interior of the Pantheon or the Piazza San Pietro in Rome.

In this paper, the room is looked upon in its most fundamental sense, as human dwelling. Hence, the basic domestic chamber can be regarded as the primal architectural space. In a quest for permanence, one could try bringing to light the fundamental characteristics of the room, its archetypal character.

TREATISES AND TYPES

Throughout domestic architecture history, a room stands out as an acknowledged archetype: the four by four meter room. As a matter of fact, this room seems to be a genuine polyvalent structure.

Such rooms are illustrated in early domestic treatises by Serlio, Le Muet, Durand... Treatises, although theoretical, are always based on real case studies. They provide us with a knowledge on how architecture was thought and built at the time.

Interestingly, those treatises present non-contextual housing plans. They provide an inventory of floorplans and sections that illustrate primarily internal levers of architecture. Those domestic treatises focus on space and spatial relationships before addressing amenities. They investigate directly the inherent characteristic of architecture: the production of space. Only space dimensions, hierarchy and topological relations are at stake.

In those treatises, the smallest abodes display at least one room encompassing a four by four meter surface. Moreover, in the case of Le Muet, the drawing boards begin with *la première place*, the presentation of a twelve feet-wide house (four meters). It reveals a room of four meters by four and a half meters on the first floor. For his part, Durand focuses directly on the four by four meter space as he develops *la maison à neuf cases* in the first volume of his *Précis*⁴.

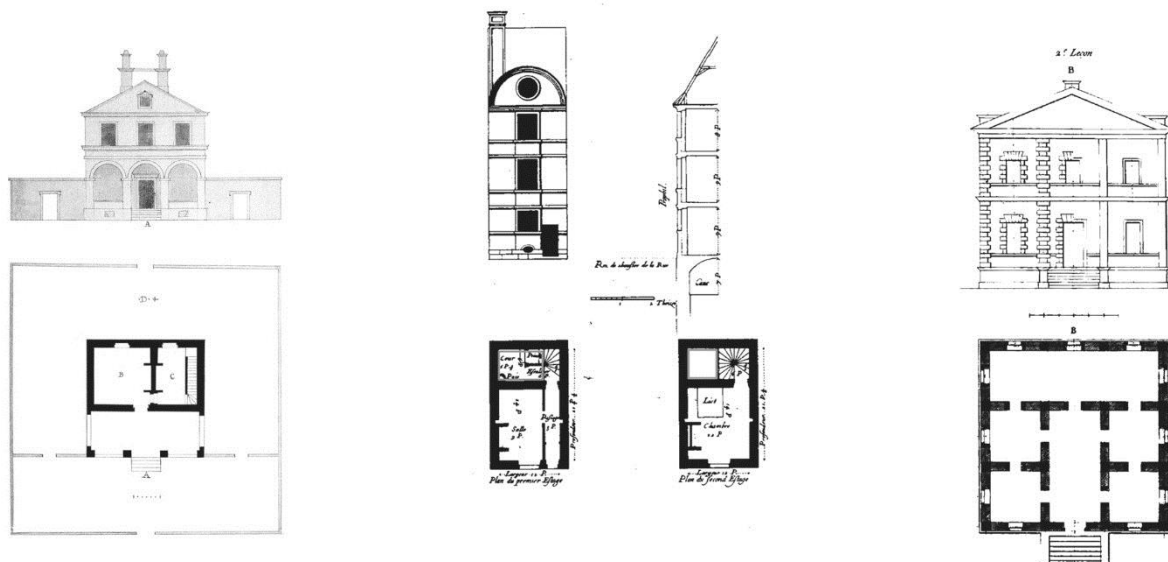


Figure 1. Serlio, Pierre Le Muet, Jean-Nicolas-Louis Durand

In those theoretical examples, the smallest dwellings “have provided a place of about four by four meters in size where people can get together”⁵. This consideration is confirmed by an analysis of various historic types. The interest of those types lies in their very nature. Indeed, they are the result of a long sedimentation process of uses and techniques in order to attain the quintessence of local dwelling needs. This process leaves aside any contingent elements to retain only the essential, the underlying structure of housing. Therefore, the persistence of the four by four meter room illustrates something permanent about domestic dwelling.

Such a room demonstrates polyvalence in every facet of the Vitruvian triad. On a functional level, it can accommodate all dwelling functions without any spatial change⁶. According to Kiyoyuki Nishihara⁷, six basic human functions take place in a human home: eating - cooking - bathing - sleeping - getting together - working. The four by four meter room seems to be able to accommodate all six. The standard designation of all rooms by the term “chamber” in domestic treatises reinforces this idea of polyvalence. On a technical level, it is abstract enough not to engage in the field of technicity. Durand’s work is instructive in that regard. Indeed, the plan of *la maison à neuf cases* does not undergo any variation although four different construction techniques are ventured. Finally, on a formal level, it is conceptual enough to accommodate any kind of appearance.

Hence, the permanence of such an archetypal dwelling space relies on its ability to accommodate changes on a functional, technical or formal level.

CONTEMPORARY ARCHETYPES

Interestingly, architectural archetypes have regained attention among contemporary architects in their quest for essentials. This is effective both in collective and individual housing.

As was the case with historical types, the persistent use of the four by four meter room is sometimes a key design element nowadays. However, technical issues relating to water and heating often seem too specific to push polyvalence to its epitome. In that regard, the 1920's are turning point in housing design, switching from traditional polyvalent types to specific modernist plans. This shift coincides exactly with the generalization of water technologies (water supply and sewer connection) in domestic buildings.

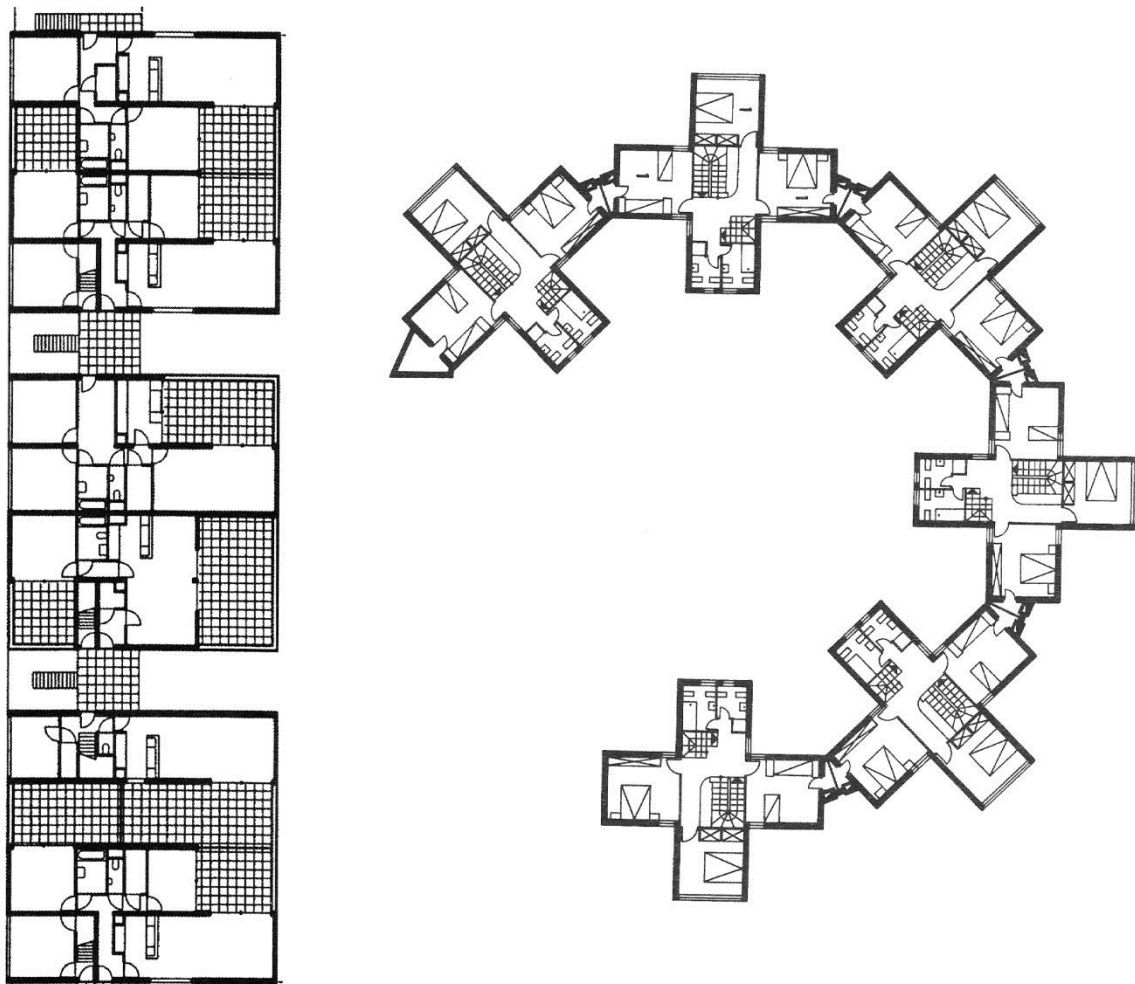


Figure 2. Neutelings Riedijk, Hollaindhof; Sartogo Bruschi, Capo Linaro, Santa Marinella

In the field of individual housing, archetypes and the archetypal room have also been resurgent themes for contemporary projects. Some of those directly recall *la maison à neuf cases* of Durand. Remarkably too, the floor plan drawn by the French architect could be seen as one of the proposals for the Nine-Square Grid problem exercise taught by John Hejduk⁸ in architectural studios from the mid 1950's.

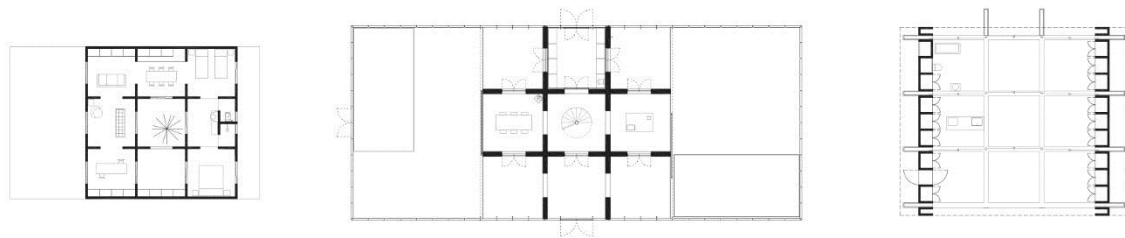


Figure 3. Marcos Franchini, Casa 3e30; Office KGDVS, Villa Buggenhout; Shigeru Ban, Nine-Square Grid House

In that regard, the work of Mauricio Pezo and Sofia von Ellrichshausen is remarkable. Not only have they produced a consistent reflection about archetypal dwelling, but the archetypal room itself seems to have become the basic element in their dwelling compositions. In their work, archetypes have become a generic theme acting beyond functional, technical or formal contingencies.

ARCHETYPAL DWELLING

Regarding their reflection about dwelling, the work of Pezo von Ellrichshausen goes beyond the specific demands of each context (where context is understood as a combination of site and programmatic demand). In that sense, the idiomatic forms they produce seem archaic⁹. This approach recalls that of Rudolf Wittkower, in his studies of Andrea Palladio's villas¹⁰, which were drawn according to a constant underlying grid which was adapted to local contingencies. To define their work, the architects themselves speak of format as the « *definition of a generic outline; a schematic plan traced according to basic variables, such as extension, direction or proportion. Non-referential, non-contextual, non-constructive, the format is a marginal line without thickness. It is a silent general sense of an architectural structure; its meaning can only be found in the precise alignment of size (and therefore scale) in a specific location* »¹¹. This format can be likened to Palladio's underlying grid mentioned by Wittkower.

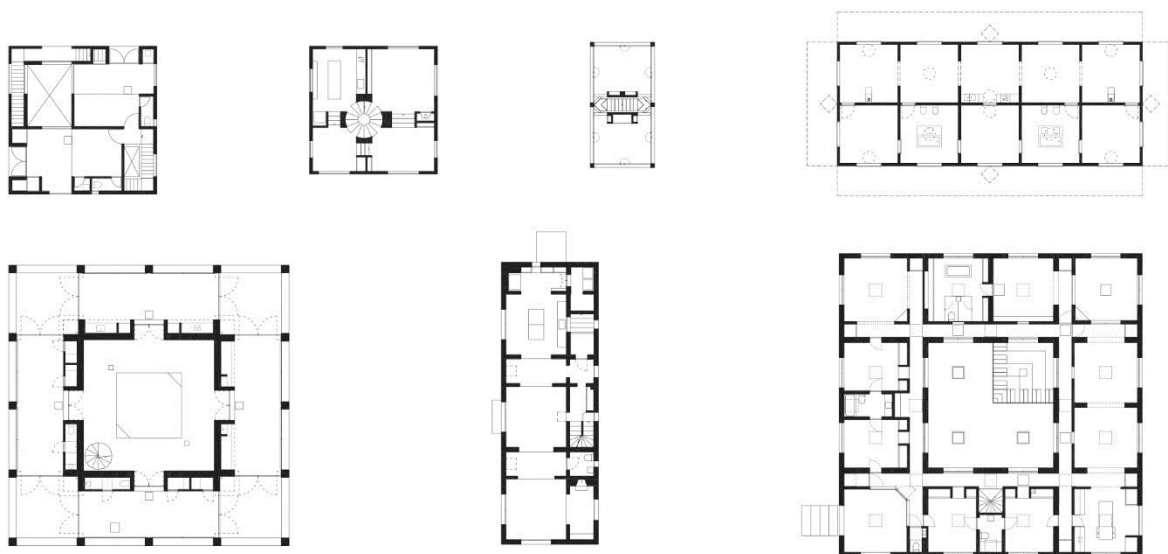


Figure 4. Casa Poli, Casa Gago, Casa Arco, Casa Guna, Casa Meri, Casa Cien, Casa Solo

Hence, Pezo von Ellrichshausen produce a set of general rules for their projects.

First, the volumes produced are austere. With a composition method “*primarily based on rational and abstract models of space*”¹², Pezo von Ellrichshausen produce silent and almost mythical monoliths, where parts are so strongly intertwined they can hardly be separated.

Second, composition wise, the operative spatial structures are plain and straightforward. Pezo von Ellrichshausen use “*elementary mental figures that we occupy to depict spatial relations (e.g. crossed, central, peripheral, etc.)*”¹³.

Third, the dwellings designed by Pezo von Ellrichshausen, although nurturing an elemental bond to landscape, are detached from their immediate setting. This is noticeable in two respects.

On the one hand, all their buildings display an artefact detaching them from the ground. This feat is managed through a plinth (Casa Cien, Casa Solo, Casa Guna, Casa Arco ...) or an artificial podium (Casa Meri). Interestingly, the Buggenhout villa by Office KGDVS presented above displays a similar attitude regarding its setting. Here too, the dwelling acquires independence from its surroundings through a peripheral fence. This environment independency recalls architectural treatises where site contingencies were not a design issue.

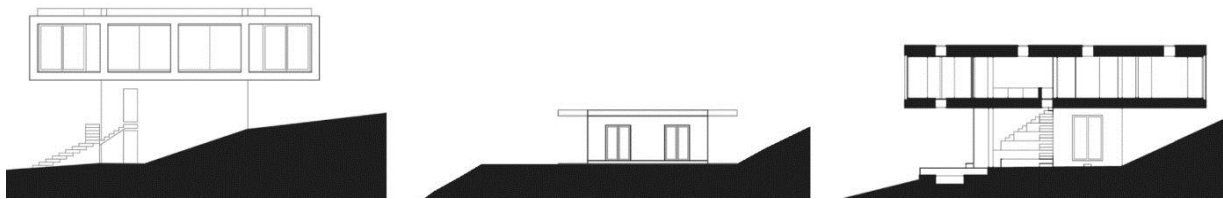


Figure 5. Casa Solo, Casa Meri, Casa Guna

On the other hand, most of the houses built by the Chilean architects are oriented according to the points of the solar compass, as if referring to a horizon far beyond their immediate environment. Most compositions being quadrangular, this arrangement gives each façade and the rooms they relate to a specific relation to the sun. This recalls ancestral dispositions where the relation to the sun was fundamental.

Finally, this quest for archetypes is also illustrated in the way Pezo von Ellrichshausen communicate about their work. Indeed, they document it in such a way that it can almost be regarded as a typological catalogue. All buildings are drawn precisely, with the same minimal graphic codes, starting with a split axonometric drawing. What is more, those representations seem de-personified and thus universal. As Perez mentioned, “*akin to the strategies of a handbook, the elimination of differences favours comparisons and refers more readily to types; that is, to categories of an objective, supra-individual order*”¹⁴.

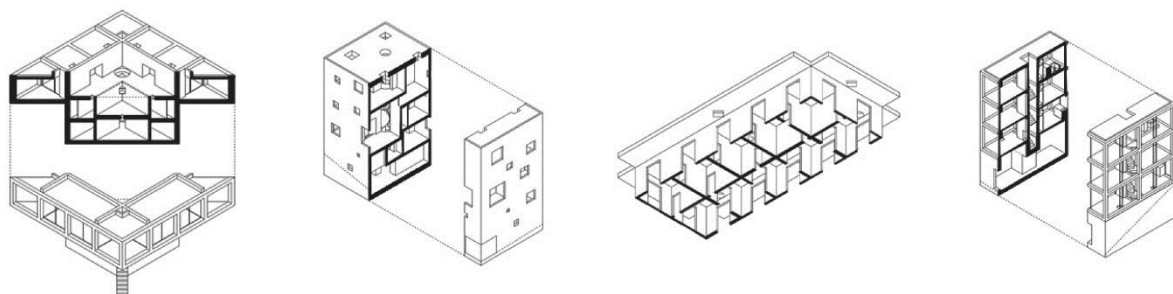


Figure 6. Axonometric views

ARCHETYPAL ROOM

In addition to this quest for dwelling archetypes, the archetypal room constitutes the keystone of most of Pezo von Ellrichshausen's housing projects.

A first indication of this propensity is their relation to circulation spaces.

In some houses, circulation acts as a transition between in- and outside. Sometimes, it even disappears in the thickness of the walls along with the service spaces.



Figure 7. Casa Poli, Casa Guna

In other cases, the transition between rooms is limited to a couple of stairs. While some rooms are directly connected to each other by a few steps, others communicate through a staircase with no vestibule.

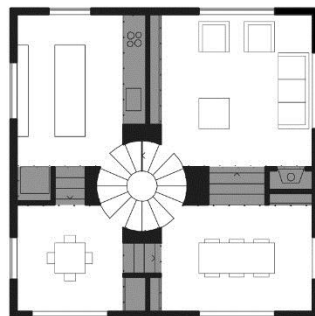


Figure 8. Casa Gago

In most cases however, circulation spaces vanish completely, all rooms being connected as in the Renaissance enfilades. In those houses there are no corridors, the chambers are linked through passages or connecting doors.

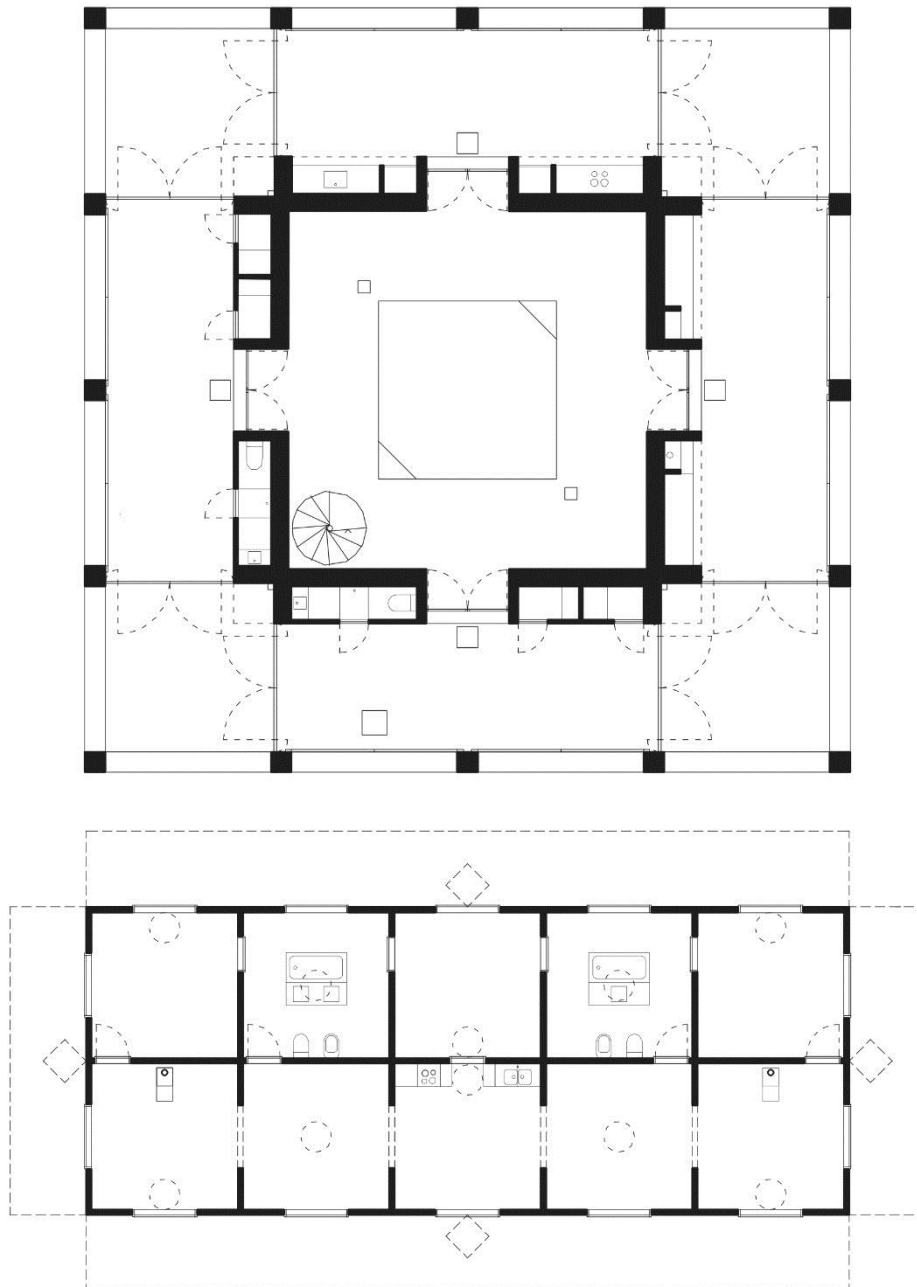


Figure 9. Casa Meri, Casa Solo

When circulation spaces disappear entirely, the house become a basic “*matrix of interconnected chambers*”¹⁵. All attention is drawn to the chambers’ constituents.

Second, the archetypal four by four meter room has explicitly become a cornerstone in Pezo von Ellrichshausen's housing projects, often leading to a "*set of identical rooms that only vary in their relationship to the outdoors*"¹⁶.

Their simplest house so far, the Casa Arco is a clear example of that reflection, being built on the base of two adjoining chambers.

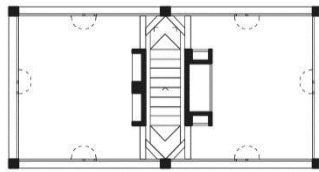


Figure 10. Casa Arco

In all other houses, the four by four meter room is a persistent component. This persistence is not only present in their design work but also in their graphic works.



Figure 11. Mauricio Pezo's paintings

This persistence of the archetypal room is interesting on three levels for its capacity to allow change.

On a formal level, the abstraction of geometrical figures (among which the square) focuses on the essentials. It suspends any secondary consideration. Interestingly, the work of Pezo von Ellrichshausen for the Chilean Pavilion of the Venice biennale of 2008 was based on the same idea.

Moreover, the question of wall openings reinforces this stance. Three kinds of wall openings can be found in Pezo von Ellrichshausen's work: square, gold rectangle windows or plain openings. As such, they are the bearers of no particular meaning. They act as holes without direction, as if they had always been there.

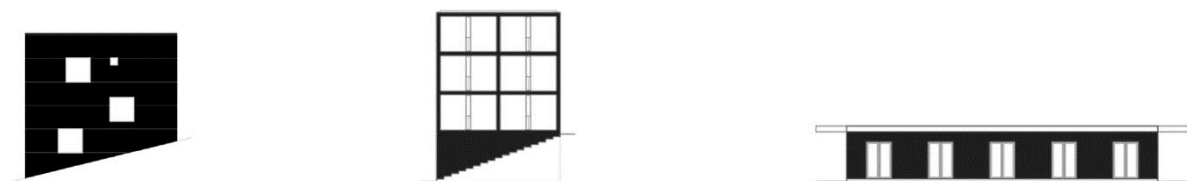


Figure 12. Casa Poli, Casa Arco, Casa Meri

Finally, materiality does not seem essential. It is either absent or blunt. Indeed, their communication drawings display neutral and immaterial buildings. Furthermore, their projects are always constructed in rough materials (wood or concrete). In the same vein, while the Buggenhout Villa is uncompromisingly coated with bitumen, Shigeru Ban's proposal is almost ethereal.

On a functional level, the four by four meter room can accommodate all kinds of programmatic needs, making the chambers interchangeable. In some cases also, exterior spaces could easily evolve according to the changing needs of the inhabitants (e.g. Casa Solo).

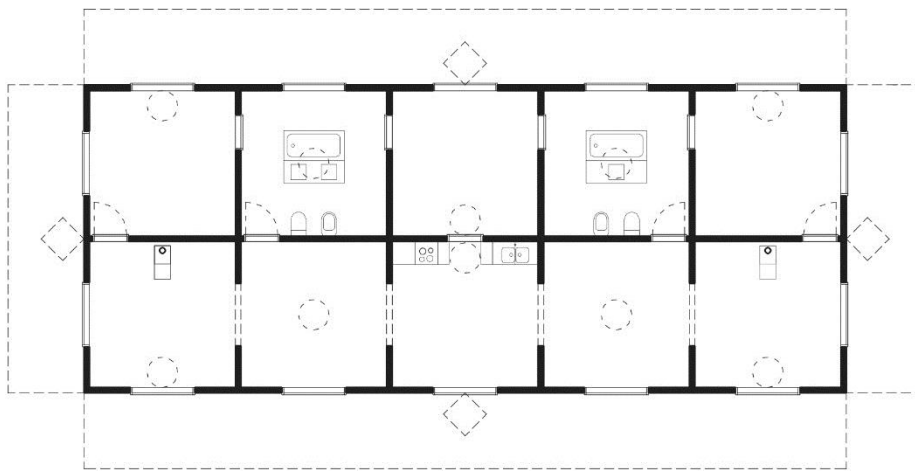


Figure 13. Casa Meri

Moreover, the furniture is designed in such a way that no functions are foreordained. Furthermore, most of the function-defining furniture (tables, beds...) is moveable. Interestingly, Shigeru Ban dismissed this problem altogether in his Nine-Square Grid House by placing all the furniture in two service slabs on the sides of his building. The Casa Poli is designed the same but in a spiral way.

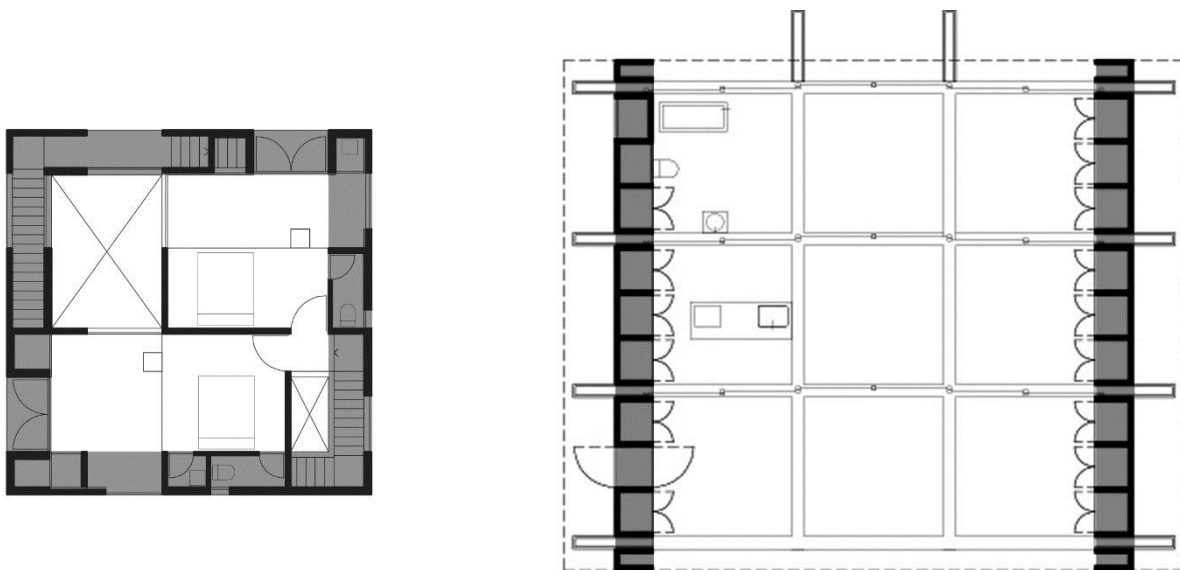


Figure 14. Casa Poli, Shigeru Ban, Nine-Square Grid House

On a technological level, two nagging questions are treated: water and heating. They have been specifying spaces ever since the 1920s. In Pezo von Ellrichshausen's work, the water issue is not treated as an ostentatious feature. Their design is barely modified by water supply or sewage issues. On the contrary, as one can note in the Casa Meri for instance, the entire chamber becomes a bathroom with a tub in the middle.

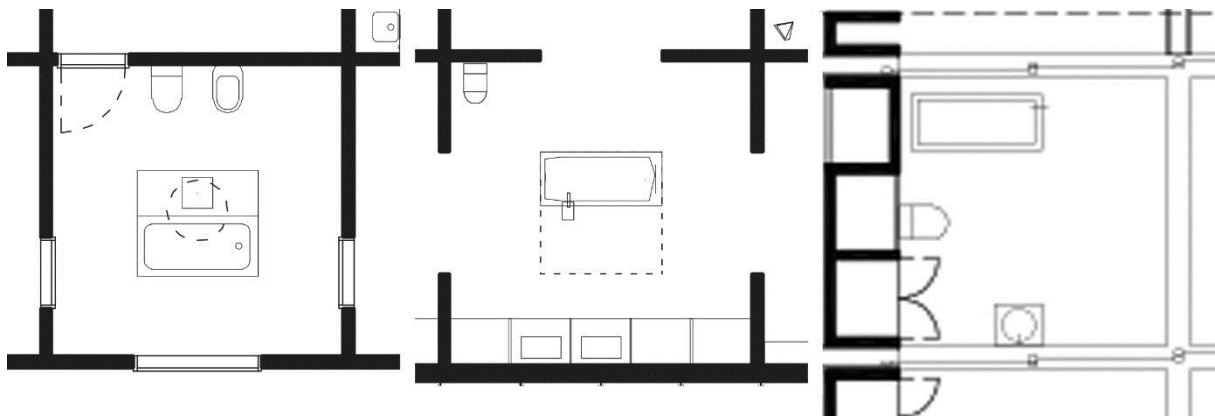


Figure 15. Casa Meri; Office KGDVS, Villa Buggenhout; Shigeru Ban, Nine-Square Grid House

The Villa Buggenhout by Office KGDVS displays the exact same disposition. In the latter, the systematism is pushed even further: a service room on the ground floor is no different from the other rooms, while it gathers all service devices (toilet, furnace, meters ...). Yet, the architects designed a more traditional composition for this chamber in their earlier sketches.

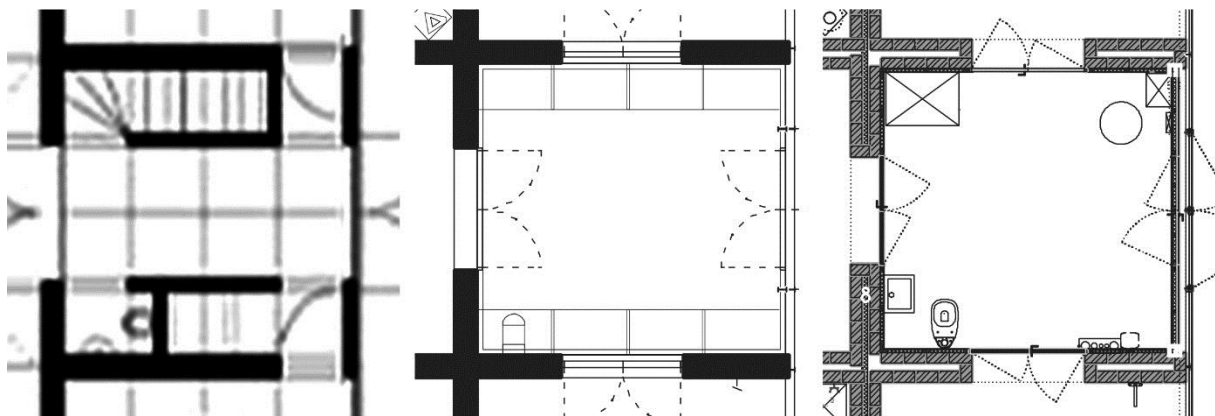


Figure 16. Office KGDVS, Villa Buggenhout, preliminary sketch, presentation drawing, as built document

When it comes to heating, the devices are mostly invisible. When there is a stove in the room, it is treated as an independent piece of (almost) moveable furniture. Moreover, some rooms do not have a genuine window but are closed off by a sole curtain. Others, like the central room of the Casa Solo does not even have a roof.

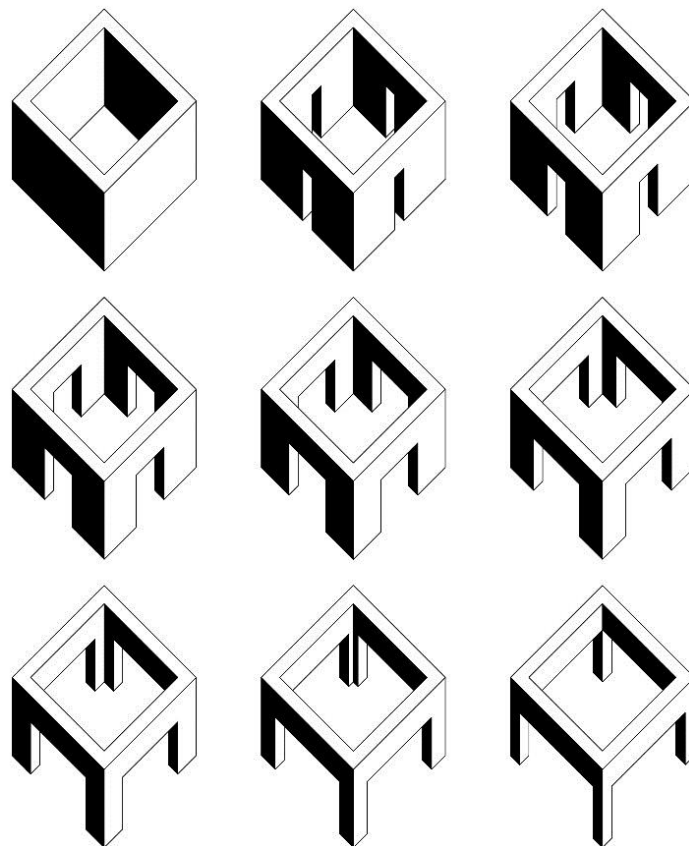
LOOKING BEYOND CONTINGENCIES TO ALLOW FOR FUTURE CHANGES

We live in a world of rapid changes. Adjusting to those changes would mean perpetual adaptation. But a shift of paradigm could also be sought: one could investigate what is resisting change, what is permanent. This quest for resilience is in deep contrast with today's consumer era.

In architecture, archetypes summarize those resilient features. As such, they are primordial schemes that allow for polyvalence on a secondary level. First, they allow for various formal expressions and interpretations. Second, they allow for functional evolution. Third, they allow for technological adaptability.

Archetypes involve abstraction. Archetypes are, by nature, beyond contingency. In architecture, their motives rely on spatial determination rather than on technological, formal or functional qualification. As they depend primarily on internal relationships, they are autonomous designs. Yet, they do not aim for universality as modernist designs did. On the contrary, within this primary framework, secondary elements can be articulated.

On the most rudimentary scale, the room is the root of architecture. Archetypal rooms form the core of permanence. Such rooms, designed beyond contingency are a promise of future development.



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⁴ Jean Nicolas Louis Durand, *Précis Des Leçons D'architecture Données À L'école Polytechnique* vol. 1 (Paris1809).

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⁶ As suggested by Bernard Leupen it in his dissertation, *ibid.*

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¹¹ Mauricio Pezo and Sofia von Ellrichshausen, "Outlines," *Architectural Design* 11, no. 82 (2012). p.55

¹² *Ibid.* p.54

¹³ Juhani Pallasmaa, "In Search for Meaning," *2G*, no. 61 (2012). p.7

¹⁴ *Ibid.* p.12

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¹⁶ Mauricio Pezo and Sofia Von Ellrichshausen, "Casa Per Vacanze E Florida, Cile/Vacation House in Florida, Chile," *Domus* 09, no. 983 (2014).