Pencils, Computers, Cameras: Itsuko Hasegawa's Instruments of Distance —

Ahmed Belkhodja

Of the 120,027 items included in the archives of the Centre Pompidou in Paris, 16,010 are part of the collection called 'Architecture', and 22,877 are filed as 'Negative film'. Astonishingly, only one entry sits in both: 'Ensemble de 12 négatifs couleur (4 pour le projet Bizan, 6 pour le projet Yaizu 2 et 2 pour le Mix)'.[1] The author of this ensemble of objects is the Japanese architect Itsuko Hasegawa, and the work dates from 1985 (Fig.1). To be more precise, the '*négatifs*' are colour transparencies meant for projection, a quite common by-product of many architecture practices of the time, but one that rarely found its way into museum archives. They are usually thought of as intermediate objects – devices allowing the reproduction of drawings or photographs, but that are usually considered less important than the drawings or photographs themselves, less important even than good reproductions on paper. However, it seems that Hasegawa and the Centre Pompidou thought these specific items had a value of their own. The images they carry are long-exposure photographs of a screen displaying 3D models of her projects. At the time, this was the most efficient way to immortalise computer-generated models. The fact that an architect experimented with photography is of course not unusual, and perhaps even to be expected. But what makes Hasegawa's exploration intriguing is the way in which she used the graphic possibilities of photography and of the computer to reflect on her own creative practice.

In 2012, Hasegawa commented that 'through all this time – from her plodding solo architect days to now, when she designs with computer – her basic approach has never really changed'.[2] Photographer, critic and philosopher Koji Taki, who has been an important influence on Hasegawa, once stated that 'there are always two different qualities discernible in the works of an architect: one is variable, and the other invariable'.[3] Indeed, the different approaches to representation that she developed during her career underline the 'variable' quality, giving at times the impression of a trajectory comprising strongly different phases. One of the aims of this paper is to understand or locate the never-changing 'basic approach' – or the invariable quality – throughout her works, by looking first at the hand-drawings that constitute the starting point of her process.

> Moving the hand and sketching are actions synonymous with thinking that enable a closer reading of the program. My hand fluidly improvises form, and has long given me command over both the physical and non-physical aspects of architecture.[4]

Still, the computer meant new possibilities and new vantage points enriching this constant method.

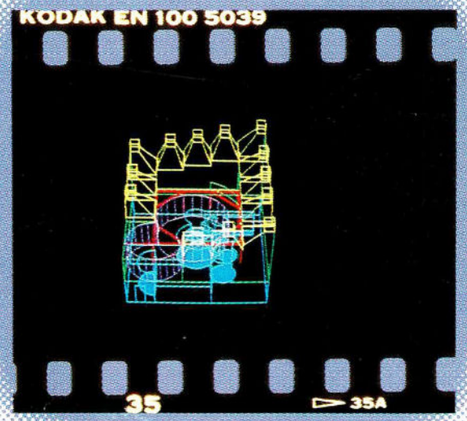
Fig.1 (Overleaf) Itsuko Hasegawa, *Drawings by Computer Graphics*, corresponding to the '*Ensemble de 12 négatifs couleur*', as published in *Space Design*, no. 247 (April 1985), ed. Kobun Ito. (Tokyo: Kajima Institute, 1985). Work/image created by Itsuko Hasegawa; reproduced courtesy of the architect.

All perspectives became possible, free from the limitations of a physical camera lens (except for the one used to shoot the computer screen) – buildings could be 'photographed' from below and from above, one could see through them as with an X-ray scan. They became objects without gravity or matter, networks of lines and surfaces in a void. Looking at hand-drawings of Hasegawa's pre-computer projects, and then at the way the images of the computer screen extended or contradicted them, one is tempted to try to understand whether, as Milan Kundera argued in 1986, 'today one can make music with computers, but the computer has always existed in the head of the composers'.[5]

Within the head of the architect the pencil, the computer and the camera might coexist and interact, each carrying their own possibilities and limitations. But the arrival of the new drawing instrument coincided with what seems like an important shift in Hasegawa's approach to the project. Essentially, one could say that she started conceiving projects in which the sections took a new importance, but also projects in which the architectural elements and their assemblage found new meanings. Her trajectory through the late 1970s and early 1980s is a tale of sequential experiments in which modes of representation always seem to coincide with the compositional ideas developed in the constructed edifices.

Although Hasegawa always started projects with hand-drawings, she published them only once, in a 2012 monograph titled *Of Seas and Nature and Architecture*. They are shown with little context, and no final drawings or photographs of the buildings. She seems almost dismissive, remote from the process: 'They would create a book compiling my sketches, I was told.'[6] Still, each chapter of the monograph is introduced by a short text by her. In one of these she explains that most of her drawings – often the most important ones – were given to staff and consequently have gone missing. However, all drawings reproduced in the present essay appear in the chapter titled 'From My Sketchbook', which focuses on her works up to 1980. Perhaps because these were from her personal sketchbook, and because she started hiring staff only in 1978, these sketches seem to convey her thinking process quite fully.

These drawings are of a series of houses which Hasegawa started in 1971. They explore how domestic spaces can be organised around what she calls 'a long distance'. The last house of this series might seem like an anomaly, in that it was conceived primarily as a system of sections, organised in layers. Distance therefore took a new meaning in it, alluding to the perception of layers of elements rather than to the effective circulation of the inhabitants within an enclosure. This understanding of the project as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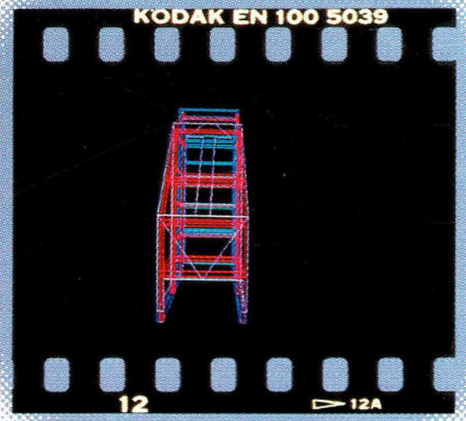
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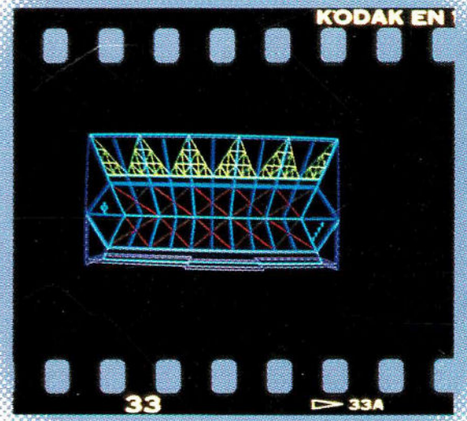
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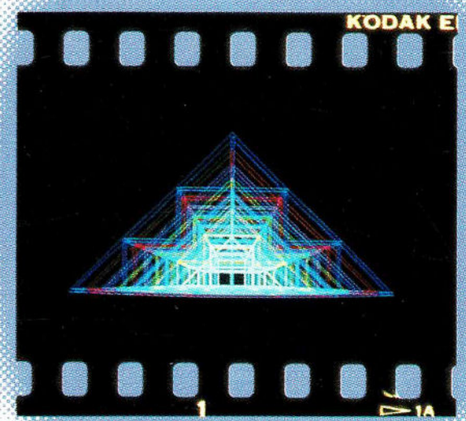
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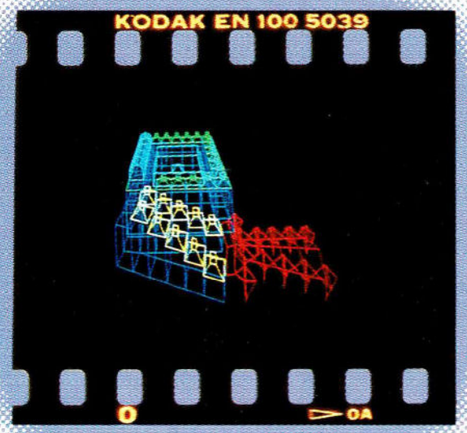
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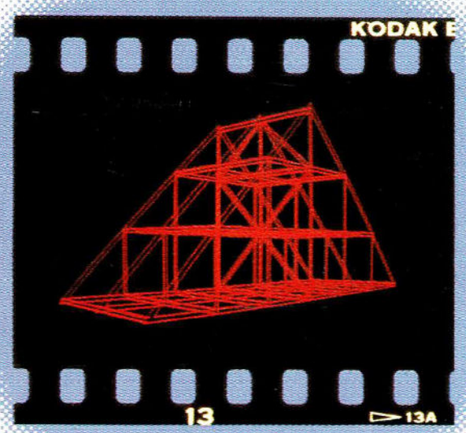
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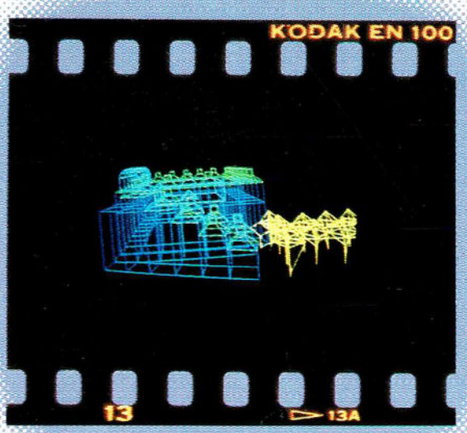
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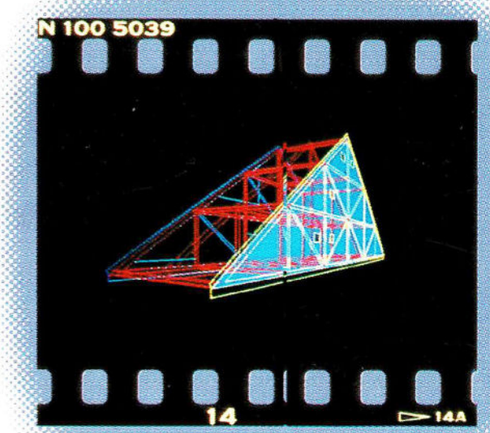
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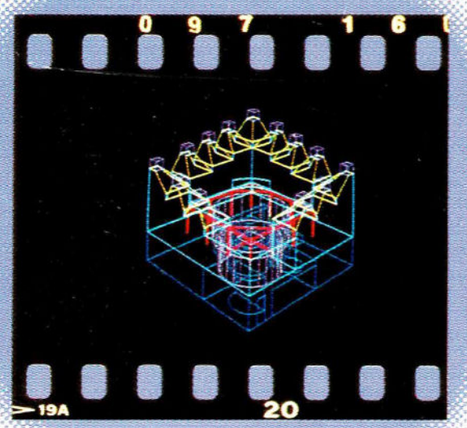
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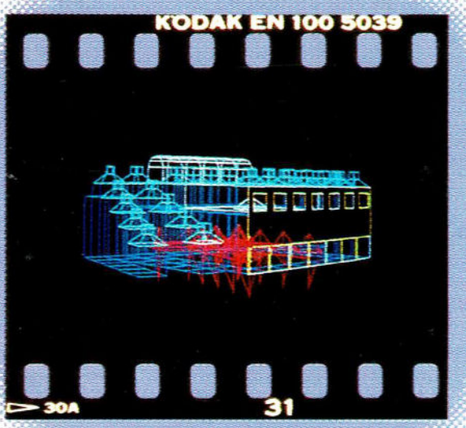
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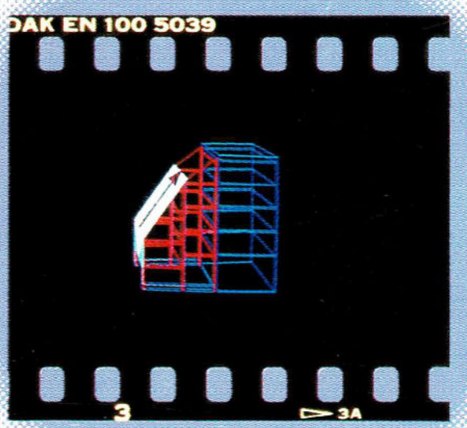
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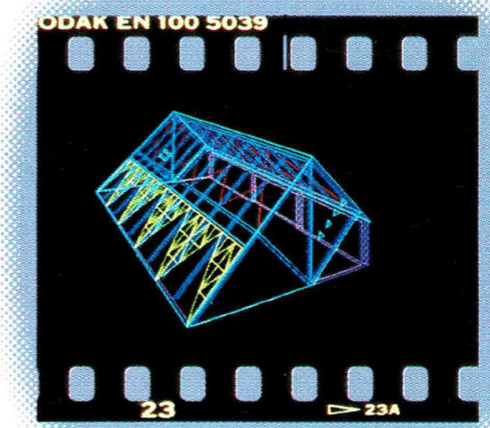
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a network of elements became the basis of her next works, and it is also precisely what the negative films provided an image of. Finally, Hasegawa conceived further computer images in which the parts take even more importance relative to the whole. In these, the unitary aspect of the projects is challenged, as well as their relationship with their context. The theme of 'distance' took on a third and final meaning there, related more directly to the apprehension of architecture by its users and the audience of its publications. Thus, if 'distance' might provide a key to understanding the 'invariable quality' of Hasegawa's work, this can only be developed through a step-by-step reading of her projects, and for this we must turn to drawings and publications of the time.

A Long Distance

Hasegawa's first projects are houses with very compact volumes and prosaic demands. Their overarching idea is that a specific handling of the plan can increase distances within a house, and therefore challenge conventional forms of habitation.

> With the idea of 'a long distance' I introduced a means of separating human beings as subjects from the physicality and muteness of architecture, thus keeping them both autonomous. My aim was to let the two entities that have no dialogue come close and react to each other, which would hopefully generate a new meaning.[7]

She records these various experiments in a hand-drawing on an oddly shaped piece of yellow paper, which is somewhat difficult to date with certainty (Figs 2a). It was published first in 2003 with the handwritten date '85/04/30' (Fig.2b). However, a slightly different version of it appears in a scan of her sketchbooks in the 2012 monograph, placed just before the sketches of the first house (Fig.3). In Thomas Daniell's *Anatomy of Influence* (2018), it appears with the legend 'House at Yaizu 1, preliminary sketches, 1972'.[8] So perhaps it is indeed from 1972 – before the various projects on 'long distance'– and it would take on the role of a road-map, setting a range of possibilities to explore in the following years. But there is also another possibility – that the drawing was done in late April 1985 and attached to the beginning of the 1970s sketchbook. As such, it would act more like a kind of personal 'retroactive manifesto', an attempt to make sense of a decade of small houses and to clarify what tied them together.

The drawing is a set of abstracted plans, reduced to rectangular outlines and to a few lines representing the main walls that organise the 'interior distance'. The plans refuse both the romantic approach of the 'inspired sketch' and the accuracy of measured drawings. They function as a hinge between the idea ('a long distance') and the concrete requirements of the building. A handful of these plans corresponds to actual projects, while the others are essentially possibilities. To Hasegawa, it seems that mapping the unexplored potentials of the 'long distance' idea was as relevant as situating the houses she had built.[9]

Despite this effort to gather a decade of works in one drawing, one house of that period – *House at Yaizu 2* – was omitted from the exercise. Somehow, a method based on plans and pencil drawings gave birth to an exception – a project that couldn't be reduced to a simplified plan along with its siblings. On the other hand, the computer '*négatifs*' of 1985 showed that project nestled among projects of a different phase of Hasegawa's work, which seems to owe more to the computer. While the grid of plans aimed to exhaust the possibilities of an idea, to close a chapter, a previously written page had to be kept aside. That page (*Yaizu 2*) became the starting point of a new chapter. But to understand this anomaly, one needs to rewind to the early 1970s, flipping through some pages of her sketchbook.

Yaizu 1

Hasegawa's first project as an independent architect is *House at Yaizu 1* (1971–2).[10] In her sketchbook, the page devoted to it shows six iterations of a pencil-drawn plan. The theme is declared in the upper left corner of the page: 'Distance – Long Cavity' (Fig.3). The plans are drawn in freehand, without rigorous scale, and their oblique orientation seems to correspond only to a will to disobey the square format of the page. They all have similar rectangular outlines, and show no sign of functions. The fact that the house is on two levels seems to be ignored as well. Effectively both the site and the programme are erased – they are not what the sketch explores. Instead, what matters is the distance one can fold into the possible footprint. The inhabitant is understood primarily as a moving subject. If most buildings can be compared to variations of *Tetris*, placing various rigid objects within a frame, *Yaizu 1* seems to be closer to a game of *Snake*, filling a frame with a single bendable object. If the former is worried with functions and parts-to-whole relationships, the latter is more interested in circulations and continuities. Hasegawa explains:

> In the interstices between one wall and another, that is between surfaces, a white cavernous space extends which is given a room name. In the hollow cavity formed by these surfaces, I hypothesized, a logic of plurality would emerge, and I still believe in the free character of this kind of space.[11]

The 'long distance' is drawn on each plan as a thin arrow. While these arrows are the *raison d'être* of the drawing, they remain fleeting, difficult to pin down. They start from where the entrance would

Fig.2a Itsuko Hasegawa, *House at Yaizu 1*, preliminary sketches, 1972, published in Thomas Daniell, *An Anatomy of Influence*, (London: Architectural Association, 2018). Work/image created by Itsuko Hasegawa; reproduced courtesy of the architect.

Fig.2b Itsuko Hasegawa, Prototype of small house plans for producing a 'long distance', dated 1985, published in Itsuko Hasegawa, *Garando and the detail of the field*, special issue of *Detail*, July 2003 (Tokyo: Shokokusha, 2003). Work/image created by Itsuko Hasegawa; reproduced courtesy of the architect.

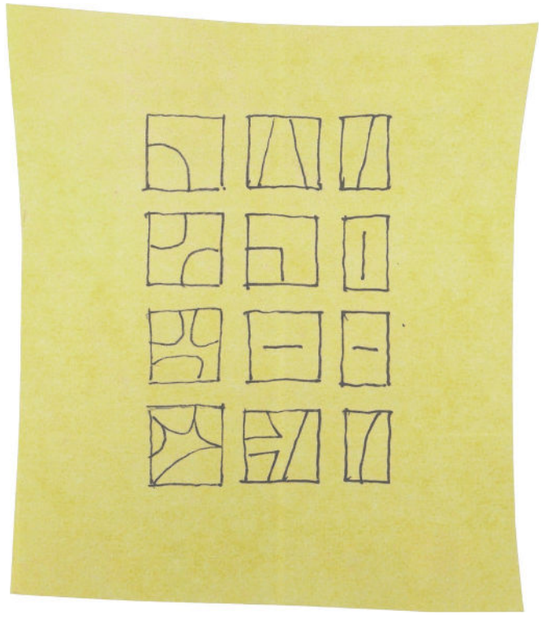


Fig.3 Itsuko Hasegawa, Sketches for *House at Yaizu 1*, 1972, published in Itsuko Hasegawa, *Of Seas and Nature and Architecture* (Tokyo: Shokokusha, 2012). Work/image created by Itsuko Hasegawa; reproduced courtesy of the architect.

Fig.4 Itsuko Hasegawa, Sketches for *House at Midorigaoka*, 1975, published in Itsuko Hasegawa, *Of Seas and Nature and Architecture* (Tokyo: Shokokusha, 2012). Work/image created by Itsuko Hasegawa; reproduced courtesy of the architect.

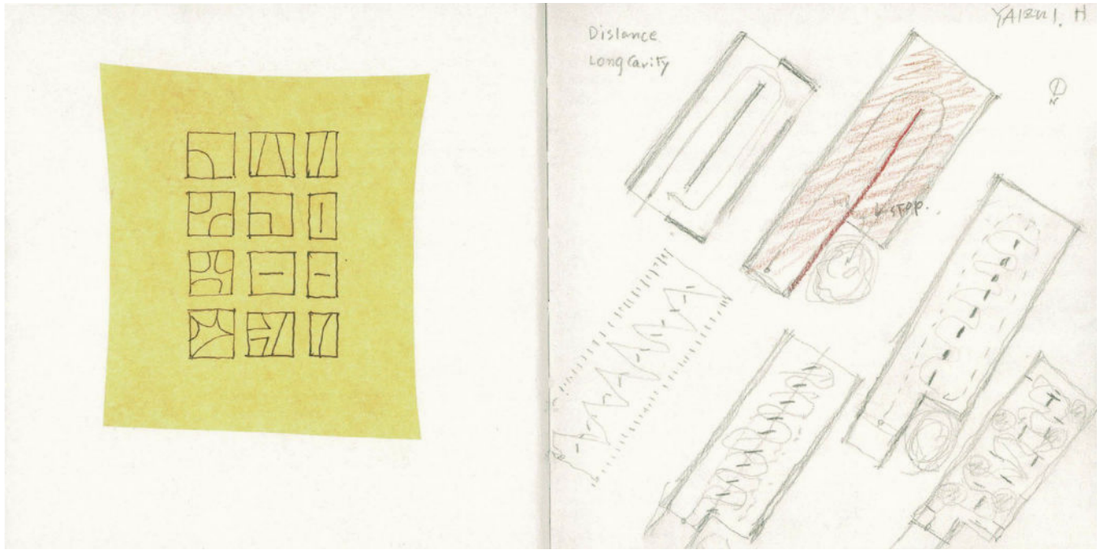
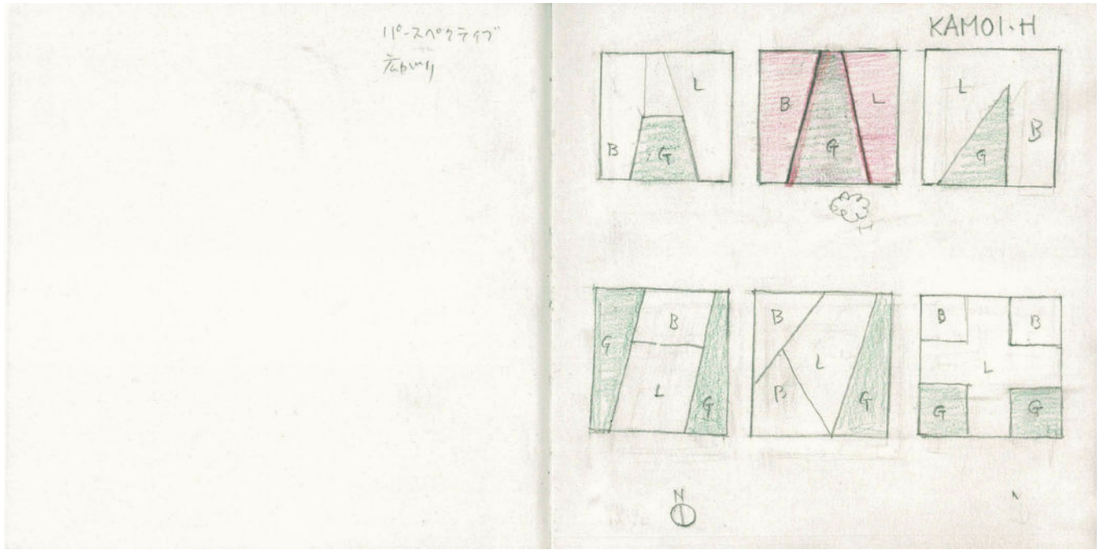
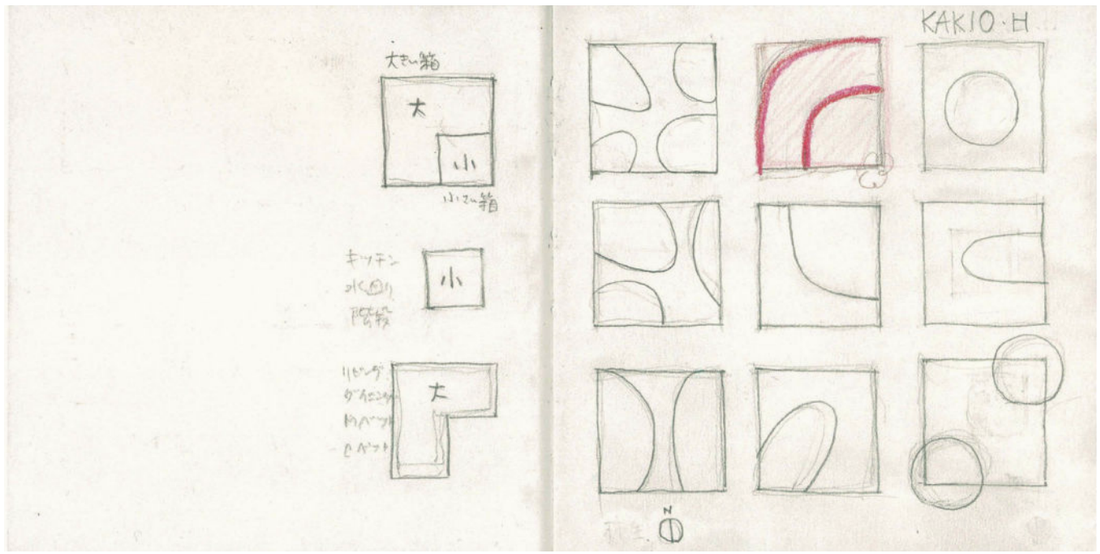


Fig.5 Itsuko Hasegawa, Sketches for *House at Kamoi*, 1975, published in Itsuko Hasegawa, *Of Seas and Nature and Architecture* (Tokyo: Shokokusha, 2012). Work/image created by Itsuko Hasegawa; reproduced courtesy of the architect.

Fig.6 Itsuko Hasegawa, Sketches for *House at Kakio*, 1977, published in Itsuko Hasegawa, *Of Seas and Nature and Architecture* (Tokyo: Shokokusha, 2012). Work/image created by Itsuko Hasegawa; reproduced courtesy of the architect.





be, and then meander in the space. The thicker lines (walls) are attempts to modulate them, to extend the travelled distance while preserving a certain floating hesitation – the same kind of hesitation and meandering of which Marc Guillaume wrote in 1985: they 'have no place in a functional world', but they can be 'antidotes against the sorrow of modernity'.[12] So, in order to maximise the interior distance, most of Hasegawa's iterations operate a subdivision following the longitudinal axis of the rectangle, with varying degrees of permeability.

Midorigaoka

With *House at Midorigaoka* (1973–5), the smallness of the site meant once again measuring the possible within the maximum footprint, a simple rectangle. Here, the arrows have disappeared, to be replaced by coloured ovoid objects that suggest loosely defined zones in which activities can take place, but without mentioning any function (Fig.4). A single written indication about these reads: 'Communication – FREE'.

However, the most important new exploration concerns the geometries of the partitions, which in some cases are curved or bent, and in others oblique. And it is the oblique wall that is ultimately chosen, and highlighted in red. 'I divided a rectangular plan at a diagonal to produce linear perspective in the space and give it a greater psychological sense of depth', Hasegawa writes.[13] In other words, visual distance within the two spaces seems to be more important here than a single promenade.

The variety of colours and lines indicates that the drawing was made in several moments, progressively clarifying the differences between the options. The trapezoid twin spaces of the chosen plan are coloured in two shades of pink, indicating they have a certain autonomy. So, while *House at Midorigaoka* relies on a division rather than on spatial continuities, the sketches for it attempt to measure the 'floating hesitation' and 'free communication' that is possible within this strategy via the varyingly coloured forms and their relative distances.

Kamoi

House at Kamoi (1973–5) sits on a more generous plot, but the same method is employed (Fig.5). However, some of the subdivisions of the maximum footprint are exterior, coloured green and marked 'G' for Garden. The bubbles of suggested functions have departed and now the programme is clearly laid out with letters. The chosen plan proposes two equal interior spaces on the west and east sides of the plot, each of them apparently similar to the twin spaces of *Midorigaoka*, but this time distanced from each other by a void (the garden) rather than a wall. Crucially, this 'inner void' is not conveyed through *poché*, or any other method that would state a hierarchy between spaces. The simplicity of the drawn lines underlines this fact, avoiding any allusion to construction, whether of walls, columns, or a distinction between perimeter walls and partitions. The garden is a room like all others, and all rooms take equal part in a game of piercing views and oblique surfaces.

Kakio

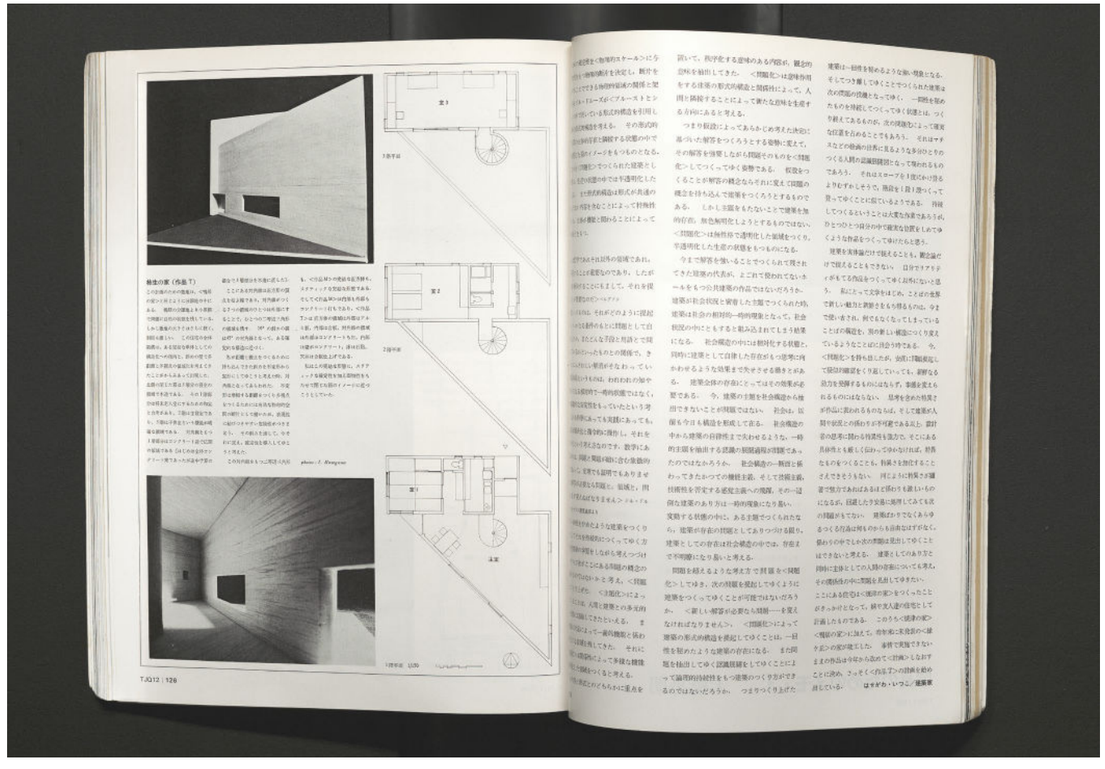
As opposed to *House at Kamoi*, *House at Kakio* (1975–7) is dense – it proceeds by filling the maximum volume with programme, an 'aloof container' (Fig.6). The left-hand page explains how this container is divided into two parts – a small box (小さい箱) containing the kitchen, bathrooms and staircases, and a big box (大きい箱) for the living, dining, sleeping and study areas. The project revolves around two distinct realms, with functions that aren't interchangeable. But the equal importance given to both realms in the drawings suggests that Hasegawa's reasoning is about a *variety of scales*, rather than a hierarchy of symbolic importance. There are no served and servant spaces *à la* Louis Kahn, but boxes of different sizes. The nine plans seem to focus on curves. Some orthogonal options have even been erased and drawn over. The larger space always reaches the four sides of the square, as if to appear as vast as possible. The chosen option proposes a space spanning between two opposite corners of the square, bent in a quarter circle.

Kakio (Prequel)

The few pages of Hasegawa's sketchbook already discussed might give the impression of a linear process of iteration and selection, a 'method of trial and of error-elimination'.[14] But what makes Hasegawa's sketchbook special is not so much that method as the fact that she exposes it in drawings, putting all trials on the same plane. However, scrutiny of early publications shows that her sketchbook isn't a purely transparent exhibition of her method, but a careful staging of it.

In an issue of the quarterly *Toshi Jutaku (Urban Housing)* that came out in 1976, an unbuilt and very different project for *House at Kakio* is published (Fig.7). It shows a house made of two clearly readable volumes – a three-level parallelepiped containing the same functions as the 'small box' of the sketchbook project and a vast volume, triangular in plan, containing a double-height living room. As *Midorigaoka* and *Kamoi* have just been completed, she writes: '10° obliques have become 45° diagonals, approaching a definite structure.'[15] What Hasegawa meant by 'definite structure' might seem vague at first, and it is unclear why the project would be abandoned in the following months. What can be said, however, is that while the arrangement of sketches discussed earlier conveys a self-contained image of a method involving variants from which one was selected, perhaps the real 'trial and error-elimination' had happened beforehand. Despite the similarities in general organisation of the programme, the 'small box+triangular prism' could not sit with the various iterations of the 'small box+big box' of the sketchbook. The 'definite structure' brought by the 45° lines was incompatible with the research

Fig.7 Itsuko Hasegawa, Early proposal for *House at Kakio (Work T)*, 1976, published in *Toshi-Jutaku Quarterly (Urban housing)*, no. 12 (winter 1976), ed. Makoto Ueda (Tokyo: Kajima Institute, 1976). Work/image created by Itsuko Hasegawa; reproduced courtesy of the architect. Photo by the author.



for a long, curved space within a rigid container. Perhaps the early project for *Kakio* is an attempt to break away from the type of compositions gathered on the yellow paper of April 1985 in favour of something more geometrically absolute, or 'definite'. She opposes its isosceles triangle to the 10° oblique walls of *Midorigaoka* and *Kamoi*, which she describes as 'indefinite' and 'entailing the danger of being easily linked to expressiveness.'[16] In other words, what matters is that the early project for *Kakio* is an addition of two clearly autonomous parts, rather than a subdivision of a given, generic volume. In such a project, talking of a continuous 'long distance' is of course impossible. In any case, it didn't go to construction – but it planted a seed that sprouted later.

Yaizu 2

The sketchbook pages for *House at Yaizu 2* are very different from the ones for previous houses – three spreads instead of one, and no variants of plans. The first sketch is situated at top left on the right-hand page of the first spread. It is a plan of a hatched rectangular space, aligned with a vast triangle, and with a round staircase connecting the two (Fig.8). Broadly speaking it is a repetition of the unbuilt scheme for *Kakio*, published in 1976 (the sketches are most probably from later that year). But departing from this – and for the first time in her sketchbook – Hasegawa switches to sections. The rest of the page is filled with options of possible relationships between a vertical hatched object and a system of lines suggesting a frame-like structure. While the vertical object has constant size and form, the structure takes a variety of shapes and positions. In the first section, the two elements are adjacent, aligned. The next sketches show the structure progressively swallowing the vertical block (Fig.9). The focus on these two elements is inspired by the initial proposal for *Kakio* but also draws from very pragmatic considerations:

> All the houses, thus far, were low in cost, but *House at Yaizu 2* was remarkably so.... I had no leeway to think about contriving a 'long distance' in plan, because just deciding where to put the water system demanded all my attention.[17]

The last spread of sketches brings together two consequences of the modular structural system (Fig.10). The right page focuses on the various complements to the linear frame: infill walls, aluminium openable doors and fixed glass windows drawn after the structure and inserted in its geometry. Written under the drawing we find 開口デザイン ('open design'). The last page, on the left, directly stems from this conclusion. The linear structure is potentially endless: the triangular frame could be repeated, but also flanked with frames of other shapes based on the same square grid. The page is drawn in a less precise manner than the previous one, the hand getting quicker as it switches from constructive and physical concerns to more conceptual and speculative ones. The bottom sketch is the most gestural, suggesting a plan in which the linear repetition of the system would produce a long, potentially infinite building with varying depths.

It is worth noting that this variety of possible forms ties back to the first sketches for the house, but that the idea of an open system bringing them together only arose from the development of the project and the discovery of its potentials. Furthermore, *Yaizu 2* constitutes a radical shift from Hasegawa's previous houses, which all started from the definition of a perimeter. Indeed, its section is precisely not understood as a vertical plan or perimeter. When one is concerned with the experience of distance – and therefore with the body of the inhabitant moving laterally on a floor – shifting from a horizontal to a vertical understanding means moving from the unique and co-planar to an infinity of possibilities. In other words, one plan is enough to talk about distance as Hasegawa conceived it at the time (in her history this is even true when a project has several levels), but the experience of it is achieved by going through an infinity of sections. The project lies therefore less in the drawing of these sections than in their organisation – here through a modest constructive system. Seen from this point, openness and infinity are not spiritual ideals that the project tries to reach, but rather means through which the project ties together the experience of its users and the formal and physical necessities. In the search of the 'long distance', *Yaizu 2* is a shift but also the discovery of a boundless territory, in which visual perception becomes more important and in which the relationships of parts to whole take new meanings.

Layers

Taking *Yaizu 2* into account is therefore crucial to understanding the next steps of Hasegawa's trajectory, which led to the 1985 '*négatifs*'. Immediately after it, she began conceiving projects that were characterised by a specific focus on architectural elements. Her hand drawings for these projects show plans without outer limits, filling entire pages with objects loosely organising the programme in layers. *Yaizu 2* had offered a glimpse of the possibility of conceiving the interior as a field, potentially infinite. Still, for Hasegawa, these experiments seem to be in direct continuity with her earlier research on domestic spaces. About the *Tokumaru Children's Clinic* she writes:

> I formed distinct areas in the residence by placing 'fluttery' walls, functioning like *byobu* folding screens, where they were structurally necessary. By furthermore layering these 'fluttery' walls like clothing, I produced visual partitioning while maintaining long, continuous distances in plan.[18]

Fig.8 Itsuko Hasegawa, Sketches for *House at Yaizu 2* (1/3), 1977, published in Itsuko Hasegawa, *Of Seas and Nature and Architecture*, (Tokyo: Shokokusha, 2012). Work/image created by Itsuko Hasegawa; reproduced courtesy of the architect.

Fig.9 Itsuko Hasegawa, Sketches for *House at Yaizu 2* (2/3), 1977, published in Itsuko Hasegawa, *Of Seas and Nature and Architecture*, (Tokyo: Shokokusha, 2012). Work/image created by Itsuko Hasegawa; reproduced courtesy of the architect.

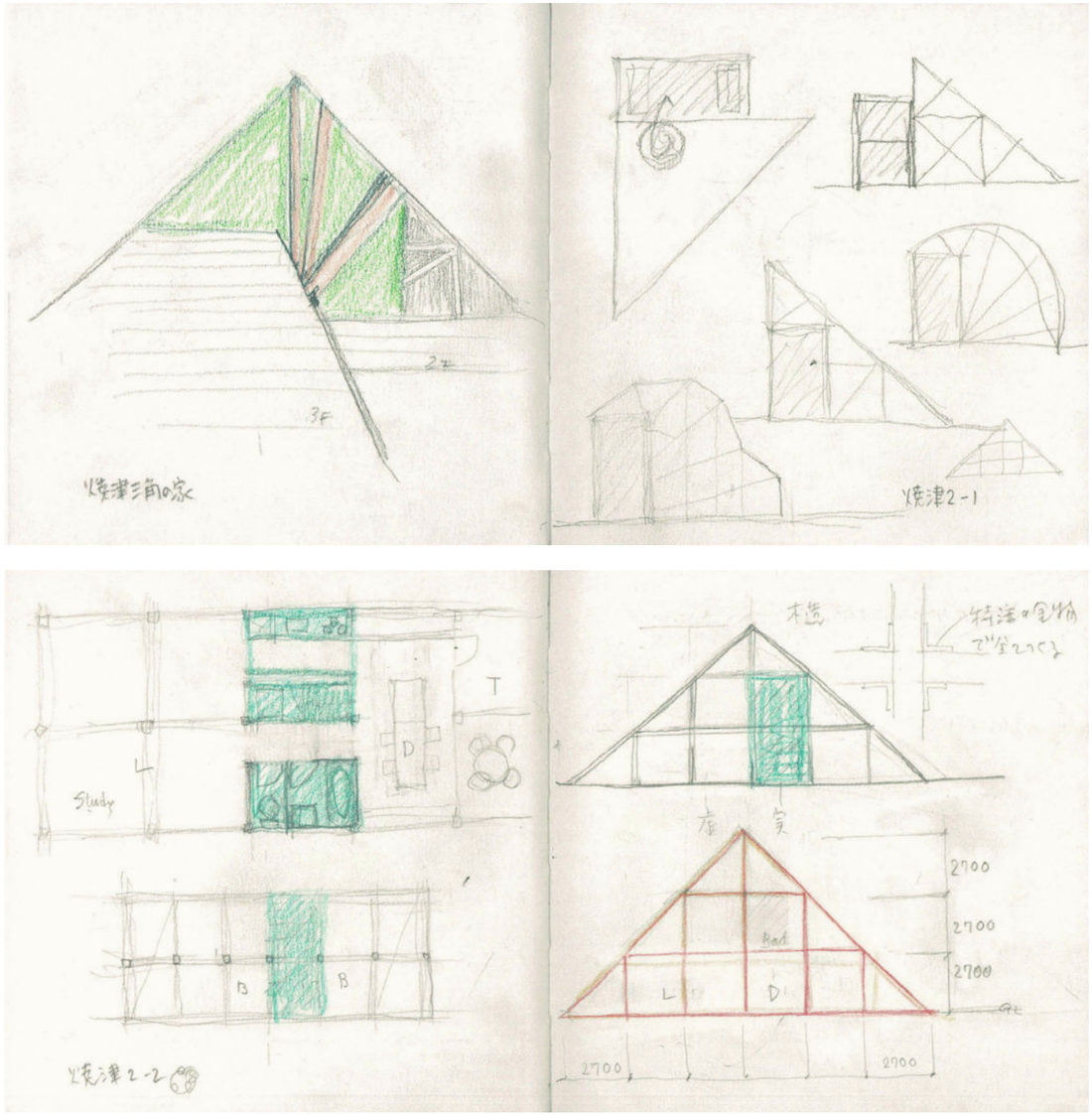


Fig.10 Itsuko Hasegawa, Sketches for *House at Yaizu 2* (3/3), 1977, published in Itsuko Hasegawa, *Of Seas and Nature and Architecture*, (Tokyo: Shokokusha, 2012). Work/image created by Itsuko Hasegawa; reproduced courtesy of the architect.

Fig.11 Itsuko Hasegawa, Sketches for *Tokumaru Children's Clinic*, 1979, published in Itsuko Hasegawa, *Of Seas and Nature and Architecture*, (Tokyo: Shokokusha, 2012). Work/image created by Itsuko Hasegawa; reproduced courtesy of the architect.

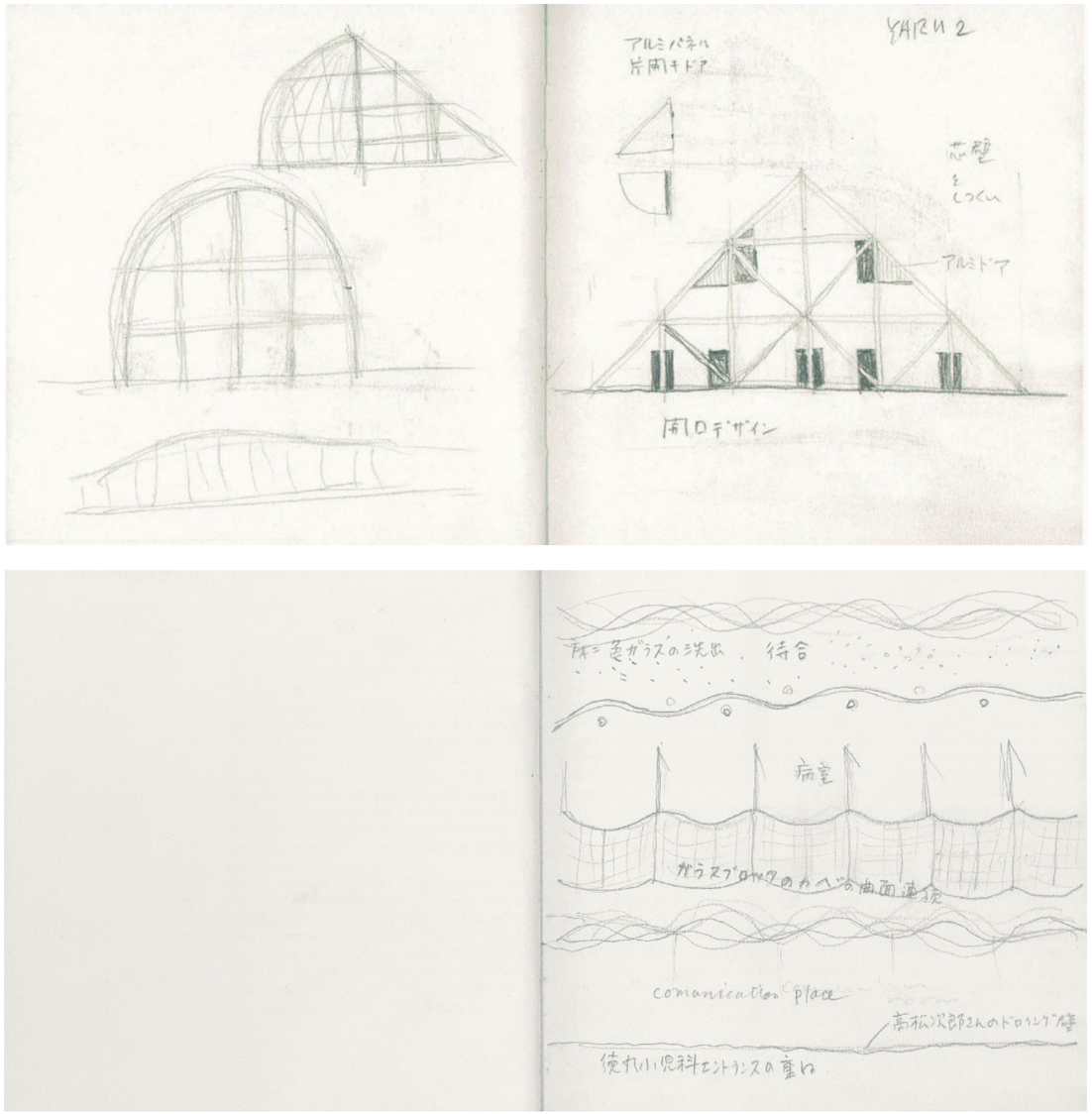
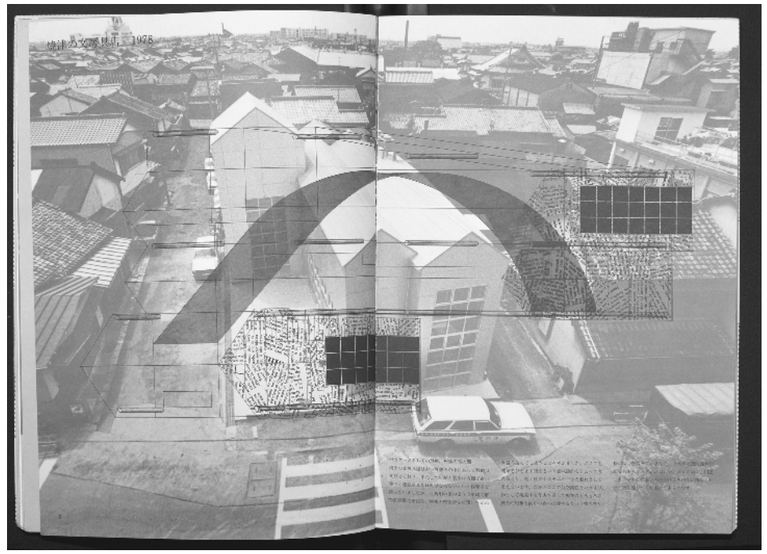


Fig.12 Itsuko Hasegawa, Cover design for *Space & Concept: Contemporary Architecture in Drawings #18*, published in *Space & Concept: Contemporary Architecture in Drawings #18*, ed. Takao Doi, Yuzuru Tominaga and Hajime Yatsuka (Kyoto: Dohosha, 1986). Work/image created by Itsuko Hasegawa; reproduced courtesy of the architect.

Fig.13 Itsuko Hasegawa, Drawing overlayed on photograph for *Stationery Shop at Yaizu*, published in *Space & Concept: Contemporary Architecture in Drawings #18*, ed. Takao Doi, Yuzuru Tominaga and Hajime Yatsuka (Kyoto: Dohosha, 1986). Work/image created by Itsuko Hasegawa; reproduced courtesy of the architect. Photo by the author.

Fig.14 Itsuko Hasegawa, Drawing overlayed on photograph for *House at Kuwabara Matsuyama*, published in *Space & Concept: Contemporary Architecture in Drawings #18*, ed. Takao Doi, Yuzuru Tominaga and Hajime Yatsuka (Kyoto: Dohosha, 1986). Work/image created by Itsuko Hasegawa; reproduced courtesy of the architect. Photo by the author.



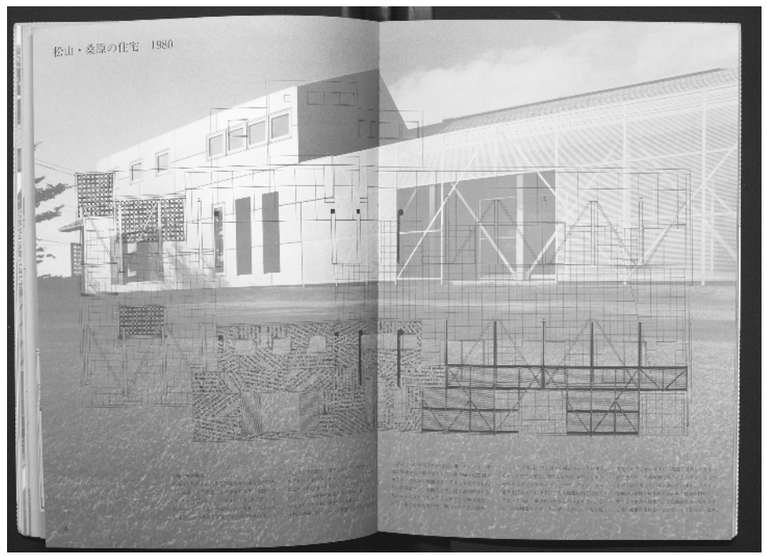
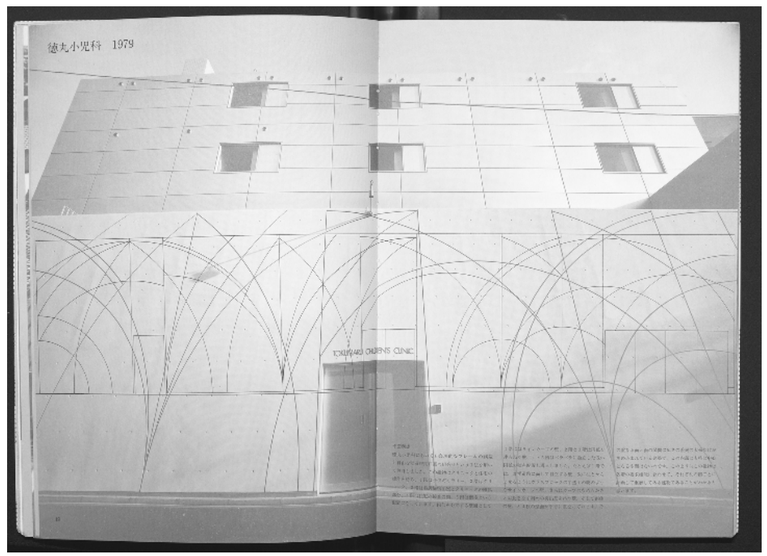


Fig.15 Itsuko Hasegawa, Drawing overlayed on photograph for *Tokumaru Children's Clinic*, published in *Space & Concept: Contemporary Architecture in Drawings #18*, ed. Takao Doi, Yuzuru Tominaga and Hajime Yatsuka (Kyoto: Dohosha, 1986). Work/image created by Itsuko Hasegawa; reproduced courtesy of the architect. Photo by the author.



As in *Yaizu 2*, the structural framework becomes the main generator of the spatial logic. The aim isn't any more to organise the space around a unique way of circulating but rather to consider a plurality of 'long, continuous distances'. In the *House at Kuwabara Matsuyama*, this logic is emphasised by a series of partitions made of perforated metal sheets and glass. The interior space is continuous, but perception is filtered by these layers. The only signs of specificity within the field are in the few words indicating programmes or special features.

The first sketch for *Tokumaru Children's Clinic* has a wall at its bottom, spanning between the left and right edges of the page, with the legend 'drawing wall by Jiro Takamatsu' (高松次郎さんのドロイング壁) (Fig.11). Takamatsu (1936–1998) was a prominent artist, whom Hasegawa invited to conceive the pattern of the joints of the blind concrete wall of the street façade's base. Only through this indication do we understand that the drawing is a plan of the ground level, and that the bottom line is the limit of the building. By inviting Takamatsu – a painter and sculptor with an established interest in architecture and its elements – to 'draw' that wall (or rather its geometric joints), Hasegawa seems to want to echo the contrast between straight and curved elements existing on the inside:

> The joints for preventing cracks on the concrete are curves like arcs drawn with a giant compass forming a clear contrast with the straight lines of the aluminum paneling on the upper portion of the building.[19]

So, as in some of Takamatsu's prints, the drawing of the wall renders the architectural element uncertain and fragile. Gravity doesn't act as its main defining force – the fact that it is a drawing, and that it alludes to the community of elements it hides, is certainly more important. In Hasegawa's first houses, structural elements were as often as possible hidden within the abstract surface of the walls, emphasizing the logic of interior circulations and spatial definition of the spaces. Here, they are brought to the foreground, but their role is more ambiguous. They are structure but they also populate the field, organising it in permeable or transparent layers.

This logic of layering finds some echoes in Hasegawa's approach to publication as well. For projects of that time, she conceived frontal axonometric drawings that emphasised the layering of interior elements. In 1986, Hasegawa was invited to publish in an issue of a magazine titled *Space & Concept* (Fig.12). Its uniqueness among the vast array of Japanese publications on contemporary architecture of the time was that each issue was dedicated to a single practice and that each architect was responsible for the curation of the content and its graphic layout. Hasegawa's issue contains seven projects, the presentation of each starting with a full-spread photograph overlaid with a drawing. For the *Stationery Shop at Yaizu* (1978) and *House at Kuwabara Matsuyama* (1980), she sets frontal axonometrics of the interiors over the photographs, as if to insist on the contrast between the rather mute exteriors and the composite quality of the interiors (Figs 13, 14). For the *Tokumaru Children's Clinic*, rather than one of the axonometrics, she places the elevation of the street wall (with the Takamatsu-designed joints) on a photo of itself. The built and drawn lines become indistinguishable from each other – a cheerful chaos alluding once again to the complexity of the interior system (Fig.15).

Thus, in a similar manner to the inhabitant of her projects, the reader is placed in front of a construction of layers that forces a lengthier perception – one could even say, a task of translation. The understanding of architecture as the purposeful layering of its elements grew from the conception of *Yaizu 2* – or more precisely from the moment the plan gave way to an array of sections. It led to a different way of thinking about the projects, and consequently influenced the way Hasegawa worked out how to communicate them.

It is reasonable to imagine that the '*négatifs*' also stemmed from this mode of thinking. These computer images facilitated a quick choice of which layers to show or omit, and allowed an emphasis on the structural systems. Their first publication is in a 1985 issue of *Space Design* magazine, which was completely dedicated to Hasegawa's work. In this, she uses the computer to explain five projects (out of the 18 present in the magazine). Three of them are unfinished at the time or not meant to be built (*BY House, House at Oyama* and *Work M*), and two are constructed (*House at Yaizu 2*, finished in 1977, and *Bizan Hall*, finished in 1984). The computer images of unbuilt projects are shown in relation to detailed physical models, as if to find comparable viewpoints, always from a distance, with an almost scientific gaze. They are shown in groups, providing sequences. For *BY House*, the first computer image shows the structural double-system, recalling some early sketches for *Yaizu 2* – a concrete tower in the back (blue), then a metal structure creating split-levels and a slanted profile (red) (Fig.16). In a second image, the third layer appears – metal panels as façade, drawing an arrow-shaped opening. The third and fourth images place us in front of this façade, and then in the same viewpoint as the model photograph. For *House at Oyama*, the interior partitions of the building are omitted – only the shell is shown, with colours distinguishing its different elements (Fig.17). A variety of viewpoints is used, as if one were holding a physical model and looking at it from different angles. With *Work M*, the sequential approach is taken more rigidly (Fig.18). The different parts of the structure are added step by step. At the bottom of the page, two other images provide frontal views, as if to underline the unusual silhouette that the system generates.

Taken together, these computer images of unbuilt projects seem to have a didactic purpose. The reader is meant to understand the construction system as something finite but fragile, made of parts that could be configured in a variety of manners. For the two built projects, the ambition is slightly different, and the physical limits of the projects are questioned. The last image for *Yaizu 2* takes the same viewpoint as the photograph by Mitsumasa Fujitsuka next to it (Fig.19), but the structure is multiplied to produce an effect of perspectival recession away from the viewer into the horizon, suggesting an endless repetition of the construction system. This image follows the potential expansion of the project that the hand sketches hinted at in the mid-1970s. It might also be the first image Hasegawa produced with a computer:

> My younger brother owned a very primitive, 60-bit computer in the early 80s, which he used to play the game *Go*. In this spirit, I drew the section of the 'House at Yaizu 2' and took pictures of the screen – because printers at the time had really low resolution – and I superimposed pictures of the same drawing with different colours.[20]

Between *Yaizu 2* and that first interaction with the computer, Hasegawa had designed at least a dozen projects. If it was indeed the subject of her first digital drawing, this suggests it seemed to her a prefiguration of her work of the 1980s. *Yaizu 2* also happens to be the project that was omitted from the yellow-paper drawing bringing together the houses of the 1970s. As that hand-drawing is dated late April 1985 in some publications, one is tempted to conclude that the yellow-paper drawing might be a consequence of the experience of the '*négatifs*'. It is as if computer modelling allowed her to finally *get Yaizu 2* – both in the sense of understanding it and of capturing it, capturing a meaningful image of it. In parallel, it also allowed sense to be made of the group of remaining 1970s houses as a coherent entity, to archive it by placing the yellow paper in the old sketchbook.

What is of interest here is the fact that the images emanating from the computer screen led to this new organisation, and not because the new projects were designed with it. The shift clearly comes from the computer's possibilities for representation – if we follow Kundera's suggestion, the computer only facilitated the presentation to Hasegawa's eyes of an image which was always, albeit latent, in her brain. Perhaps it is that the 'potentially infinite field' is properly pictured for the first time, and in a perspectival rather than two-dimensional projection.

So, it is quite logical that in the first spread of the 1986 issue of *Space & Concept*, Hasegawa puts the lines of a '*négatif*' from that same initial viewpoint over that same shot by Fujitsuka (Fig.20). The photograph's contrast is toned down, emphasising the opacity and enigmatic aspect of the building's expression. In addition to sharing the same viewpoint as the photograph, the computer image also has a similar scale in print. However, their vertical positions are different. The overall result recalls double-exposure photography, as if a glitch of the camera had brought together the portrait and the X-ray image. The finite and material are overlaid by the infinite and transparent. However – and this is crucial – they do not merge, and one is not the consequence of the other.

In addition to these two elements, a text is printed at the top right. Its layout is triangular to avoid the edge of the building in the image, and its title is 'Free Film on the Rational Frame'. The ensemble recalls the conceptual artwork by Joseph Kosuth, *One and Three Chairs* (1965), (Fig.21) which incorporates a chair, a photograph of it, and a textual definition. In the publication, *Yaizu 2* is presented as the totality of these elements (text+photograph+computer image), but each element taken independently is *Yaizu 2* as well. This is a traditional paradox of the architectural project, but if we take into account the chronology of the different layers, it assumes an additional dimension. The computer drawing is not a mere description of the house or its system. It is an image of an aspiration that is the consequence of the project. It portrays an architecture that refuses hard limits and opacities – an architecture in which all 'distances' are relative, and hardly measurable, and of which the frontal photograph could only show an opaque fragment.

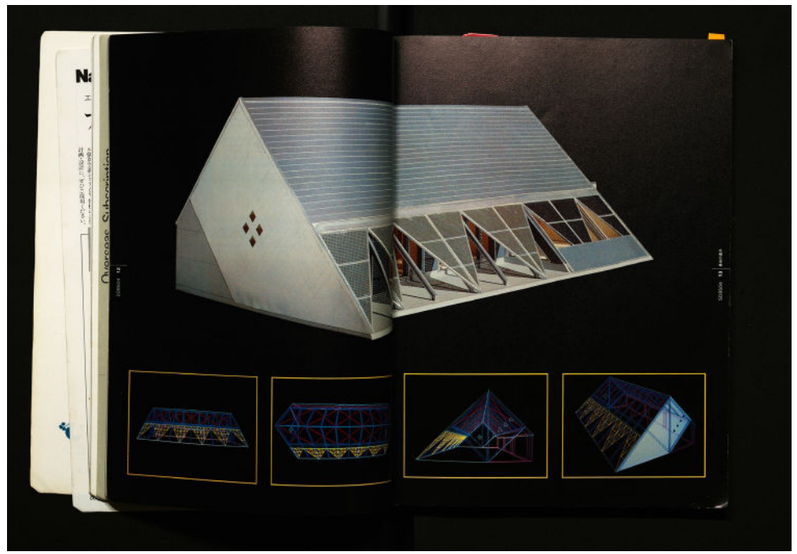
Vertigo

Going back to the first publication of the '*négatifs*', one more project was represented with them – *Bizan Hall*, a multipurpose annex of a high school (Fig.22). Its computer images are shown together with night photographs that play down the size of the project in its context. As with *Yaizu 2*, the last images show elements of the project repeated in the black void of the screen, but this time in a much less ordered manner. The last one ends the sequence with a chaos such that no vanishing point is discernible any more. The screen is filled with a rainbow of transparent pyramidal roofs. In addition to being a practical way to break down the perceptible scale of the building and to allow for light and ventilation in a dense urban setting, this accumulation of roofs seems to have other meanings for Hasegawa:

> These overlapping roofs constitute a set of analogical signs suggesting to visitors natural images such as a sea of trees or a range of mountains. I have long believed that a building that is used by many people should not be like a single structure but a group of structures suggestive of a city. One day, in looking down on this work from the roof of the five-storied school

Fig.16 Itsuko Hasegawa, Computer drawings and model photograph for *BY House*, published in *Space Design*, no. 247 (April 1985), ed. Kobun Ito (Tokyo: Kajima Institute, 1985). Work/image created by Itsuko Hasegawa; reproduced courtesy of the architect. Photo by the author.

Fig.17 Itsuko Hasegawa, Computer drawings and model photograph for *House at Oyama*, published in *Space Design*, no. 247 (April 1985), ed. Kobun Ito. (Tokyo: Kajima Institute, 1985). Work/image created by Itsuko Hasegawa; reproduced courtesy of the architect. Photo by the author.



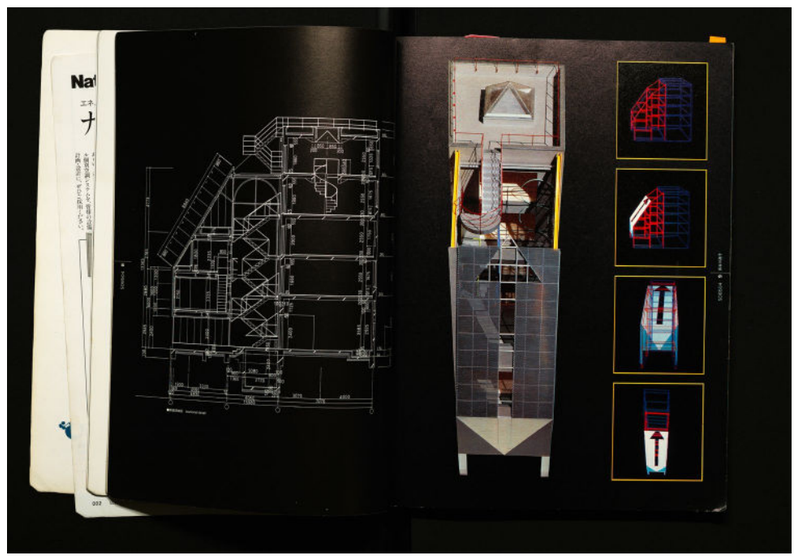


Fig.18 Itsuko Hasegawa, Computer drawings and model photograph for *Work M*, published in *Space Design*, no. 247 (April 1985), ed. Kobun Ito (Tokyo: Kajima Institute, 1985). Work/image created by Itsuko Hasegawa; reproduced courtesy of the architect. Photo by the author.

Fig.19 Itsuko Hasegawa, Computer drawings and photograph for *House at Yaizu 2*, published in *Space Design*, no. 247 (April 1985), ed. Kobun Ito (Tokyo: Kajima Institute, 1985). Photo by the author.

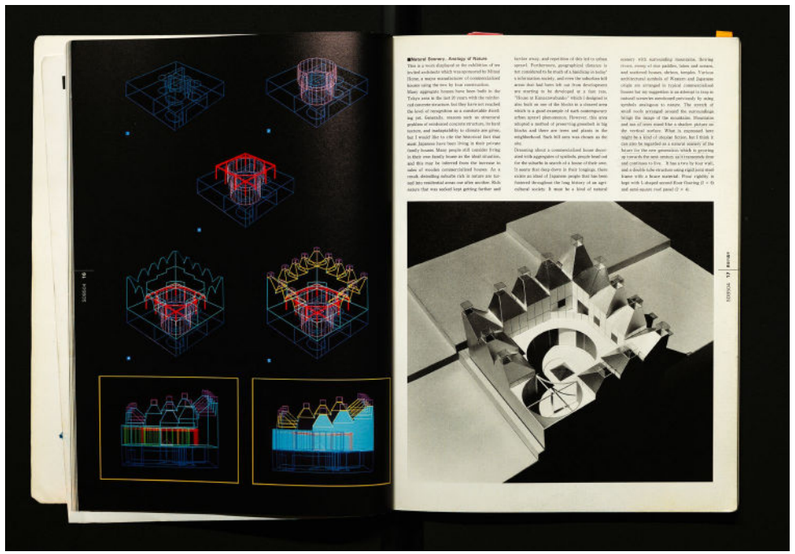
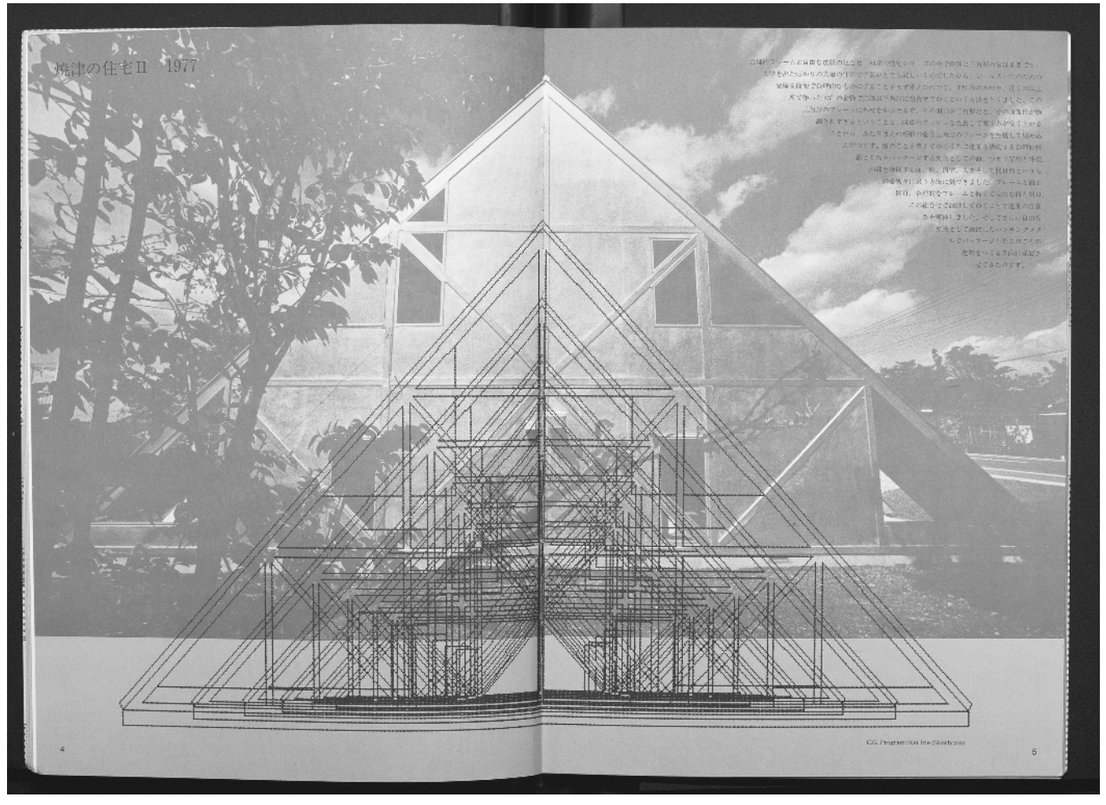


Fig.20 Itsuko Hasegawa, Drawing and text overlayed on photograph for *House at Yaizu 2*, 1986, published in *Space & Concept: Contemporary Architecture in Drawings #18*, ed. Takao Doi, Yuzuru Tominaga and Hajime Yatsuka (Kyoto: Dohosha, 1986). Work/image created by Itsuko Hasegawa; reproduced courtesy of the architect. Photo by the author.



> building across the street, I began to have difficulty distinguishing where the structure ended, because it appeared so integrated with the city.[21]

Perhaps is it this 'suggestion' that the computer images are trying to mediate. In a short essay focusing on later works by Hasegawa and on her discourse on nature, Ole Bouman and Roemer van Toorn described this approach in an otherwise bluntly critical text:

> The architect has found her calling: architecture is supplying suggestion. That is why Hasegawa's work fits so perfectly into the virtual universe that has become such an integral part of Japanese culture. Imagination shows its power in compensating the physical constraints of an over-successful island surrounded by ocean.[22]

While the Dutch article overlooked the fact that the Japanese understanding of the city does not traditionally place it in opposition to nature,[23] it is true that the '*négatifs*' may seem like a perfect illustration of the attraction of the 'virtual universe'.

For what interests us, however, it is important that the computer images were made after – or rather from – the design. Each line represented can be tied back to a very physical architectural element that takes a role within the complex system that is the building. In other words, Hasegawa does not fit functions into sculpted volumes alluding to nature or the city. The 'suggestions' are not a starting point but a consequence of a formal logic involving a plurality of elements. So, if *Bizan Hall* manages to 'appear so integrated with the city', it is not due to an excess of virtuality or to a metaphorical approach of form, but rather to the opposite, a deliberate handling of the fragmentary (and material) aspects of architecture. Furthermore, suggesting something does not mean pretending to be it, and Hasegawa underlines the diversity of readings that visitors have of *Bizan Hall*:

> Visitors have told me 'This courtyard reminds me of a European monastery', 'The space is light and airy, as if it's a place where one can undergo training in a natural environment', and 'The large room under the courtyard is like a place created below the floor of a valley, and the voices of children there seem elvish.'... Visitors have many interesting, fresh and poetic comments to make on the building, and my wish is that this work will continue to be a 'poetic machine'.[24]

The old 'rationalist machines' are taken over and diverted, to discover something that the initial principles of reason couldn't foresee. Hasegawa's works probably should be understood as overt challenges to architectural rationality – they celebrate it as something which can escape pre-determination, or at least as something which could ultimately allow for a plurality of readings.

This intent is even clearer in another kind of chaotic computer image that appears in the pages of the magazine (Figs 23, 24, 25). Unlike the others, these are published as full-spread close-ups, as if one were looking through them with a magnifying glass. They are zoomed-in images, heavily pixelated and almost psychedelic in effect, with a whirlwind of vibrant blues, yellows, pinks, and reds spiralling from the blackness of the page. More importantly, they do not 'belong' to any single project, because each of them includes elements of several. For instance, the first one includes myriads of copies of both tri-dimensional and flat elements: the structural frames of *Yaizu 2* and *Oyama*, and façades of *Bizan Hall* and *Yaizu 2*. In the three images, the elements are mingling freely, unleashed from 'their' project and spreading throughout the virtual void. The objects are placed with no reference ground, their scale and distance impossible to measure. Once again, interpretation is open. Groups of vaults sometimes evoke flocks of birds, other moments give impressions of aquatic worlds. In all cases, gravity doesn't belong in these landscapes.

But still the main 'suggestion' is surely the context in which the buildings are engulfed. The images are titled 'City 1985'. Hasegawa seems to point at the idea that the urban chaos results from an accumulation of orders, and that each of these orders is fragile, holding a multiplicity. By focusing simultaneously on constructive elements and the ocean of the city, Hasegawa is looking for another image of distance, a certain vertigo. The author Michel Houellebecq once wrote that 'there is no vertigo without a certain *disproportion of scale*, without a certain juxtaposition of the minute and the unlimited, the punctual and the infinite'.[25] It is this tension between the column and the metropolis that the computer has allowed to be portrayed, and that the 'machines' aim to hold in a state of irresolution. So, if they are 'poetic', it is through a strong contrast (or 'disproportion') with the already known.

The same year, although in another publication, Hasegawa writes in a telegrammic manner:

> Something that is in opposition to the reason that is architecture. An ad hoc character that is in contrast to the logical nature of reason. Reason that is revelatory and stimulating in character. A bop reason.... A transparent building full of fresh air and light. Freely arranged walls. A building packaged in perforated aluminum panels. Quarreling machines. Poetic machines. Technological landscape. Neutralizing machines. Indeterminate domain. Computer. Acquiring unknown meanings. Architecture that has become distant.[26]

Fig.21 Joseph Kosuth, *One and Three Chairs*, 1965, wood and photographic prints, 118 x 271 x 44 cm. Installation in 'Musée en oeuvre(s) : présentation des collections contemporaines', Centre Pompidou, Musée niveau 4, juillet 2017. © Adagp, Paris. Photo credits : Philippe Migeat - Centre Pompidou, MNAM-CCI /Dist. RMN-GP. Image reference : 4N87530

Through the '*négatifs*', the computer provides an image of that 'indeterminate domain' in which 'new meanings could be acquired'. But in this, the reader becomes an important and active (but necessarily distant) figure – an interpreter of the works. In a text on the advent of dance as a paradigmatic art form through the 20th century, Jacques Rancière described a similar regime of representation through distances and translations:

> [One is reminded] of the gap between the dancer's performance and the spectator's 'translation' of it. Dance is not the movement that generates another movement in the spectator. It is a singular synthesis of sensitive states that calls for another synthesis in the spectator.... Dance acts as a paradigm through the double gap that keeps its gestures doubly at a distance: at a distance from gestures assigned to useful functions but also from any fusional choreography of the community.[27]

Following the parallel, the shots of computer screens are not transmitting buildings to the audience, but synthetic images of spatial configurations. They aim to be as close as possible to that translation operated by the readers of architecture publications and it is in that sense that they propose an 'architecture that has become distant' – distant (but not unrelated) to its physical reality. Of Lucinda Childs' *Dance* and the fact that its representation included screen projections (imagined by Sol LeWitt) of the representation itself, Rancière adds:

> The dance was thus performed in a double space: on the real space of the stage and in the imaginary space defined by their enlarged images on the tulle screen. It was performed as its own translation – a translation that only amplified its movement in order to subtract from its reality, bringing it closer to the immaterial translation of the spectators.[28]

If the computer images subtract from the reality of architecture to publish it 'as its own translation', it is important also to consider another unexpected experiment that Hasegawa conducts around them. On the cover of the same magazine, she places some of the '*négatifs*' – not the images 'contained' in them, but a photograph of the films themselves, complete with the markings of the brand, stock, and technical specifications.

One could say that by doing that she goes in the opposite direction, and adds to the reality of the images, distancing them from the 'immaterial translation' as it normally unfolds. The readers are not facing the images any more, but an image of these images, making them aware of their incapacity to experience them *in vivo*, with light passing through them, further mediating the visual effect of the computer screen. The question of the 'negativity' of these images is also left open: are we seeing (dia) positives with black background? Or negatives of drawings on white-as-paper backgrounds? One can perhaps see why Baudrillard talked of the negative film as 'a deferment and a distance, a blank between the object and the image'.[29] That distance and the logic of translation it implies were rendered perceptible by Hasegawa, highlighted in preparation for the more immersive approaches in the pages of the magazine.

A reminder – in her own words, the 'long distances' within her early houses were attempting to 'separate human beings as subjects from the physicality and muteness of architecture, thus keeping them both autonomous' and 'to let the two entities that have no dialogue come close and react to each other'. Here we are discussing a different kind of distance (via mediation), but the aim might have been the same: to build and maintain the necessary distance allowing translations between entities. Rancière's text about dance ends on a note on the conditions of intellectual emancipation, after Joseph Jacotot:

> An emancipated man or woman is a person capable of speaking about the activity he or she performs, capable of conceiving this activity as a form of language. But it is necessary to understand what 'language' means: not a system of signs but a power of address that aims to weave a certain form of community: a community of beings who share the same sensitive world insofar as they remain distant from each other, that they create figures to communicate through distance and by maintaining this distance. An emancipated community, Jacotot said, is a community of narrators and translators.[30]

Perhaps is it in this manner that Hasegawa approached the project both in relationship to its inhabitants and to its audience via publications. That approach went through three stages: first, the distance in the physical experience of the houses that the hand drawings of plans allowed to configure; then, from *Yaizu 2*, a distance related to physical perception, through layers of elements, for which transparent axonometric drawings became crucial; finally, distance as the condition that separates a building from its translation in the mind – and this the computer images tried to emulate. But of course, each of these moments might have been present in a latent form in the previous ones. Beatriz Colomina's description of the discovery of X-ray images might be a good parallel here: 'The X-ray is not something done to an object. The object is already transparent, and the X-rays allow us to see it as such.'[31] Similarly, and recalling Kundera's statement as well, the

Fig.22 Itsuko Hasegawa, Computer drawings and photographs for *Bizan Hall* published in *Space Design*, no. 247 (April 1985), ed. Kobun Ito (Tokyo: Kajima Institute, 1985). Work/image created by Itsuko Hasegawa; reproduced courtesy of the architect. Photo by the author.

Fig.23 Itsuko Hasegawa, *City 1985-1*, published in *Space Design*, no. 247 (April 1985), ed. Kobun Ito (Tokyo: Kajima Institute, 1985). Work/image created by Itsuko Hasegawa; reproduced courtesy of the architect. Photo by the author.

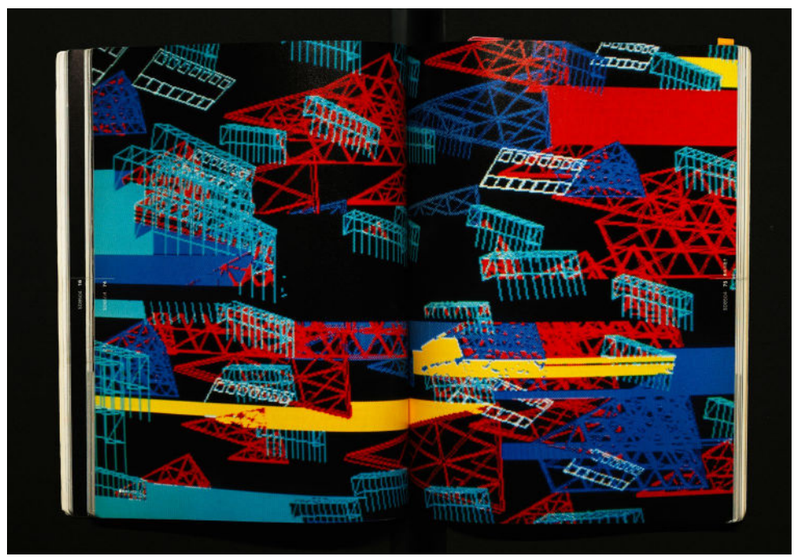
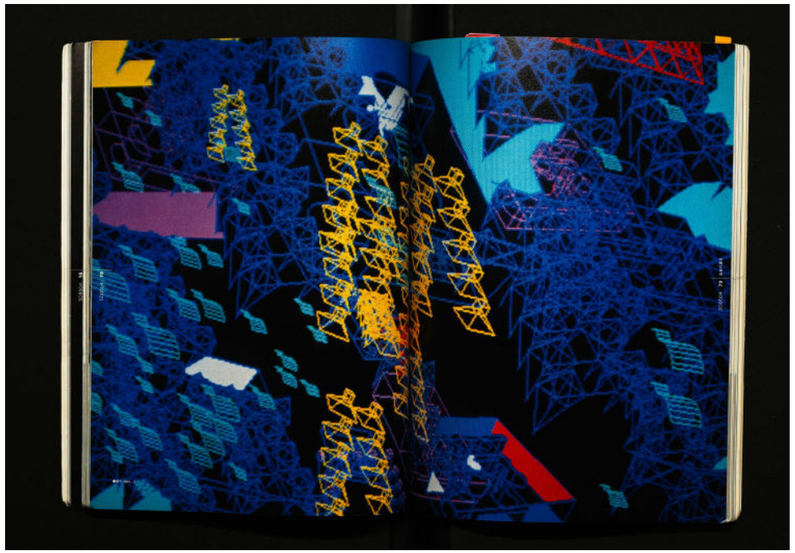
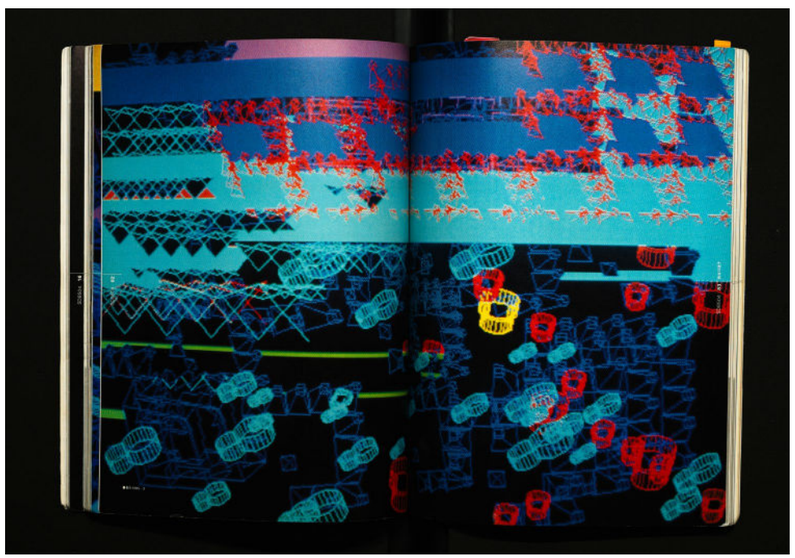


Fig.24 Itsuko Hasegawa, *City 1985-2*, published in *Space Design*, no. 247 (April 1985), ed. Kobun Ito (Tokyo: Kajima Institute, 1985). Work/image created by Itsuko Hasegawa; reproduced courtesy of the architect. Photo by the author.

Fig.25 Itsuko Hasegawa, *City 1985-3*, published in *Space Design*, no. 247 (April 1985), ed. Kobun Ito (Tokyo: Kajima Institute, 1985). Work/image created by Itsuko Hasegawa; reproduced courtesy of the architect. Photo by the author.





'*négatifs*' only provided images of logics which might have pre-existed them – but these logics could now become starting points rather than contingencies of the process. The corollary is that even in Hasegawa's works of the 1980s, the question of the physically experienced distance is still present. The particularly long entrance sequence of *Bizan Hall*, with its exaggerated perspective, is a case in point. One of the computer images gives an intense view of it.

Hasegawa's trajectory through the 1970s and 1980s is apparently the result of an incremental process, with each project bringing new light to a continuing study of the apprehension of architecture. As she said: 'My aim was to let the two entities that have no dialogue (human beings and architecture) come close and react to each other.' This is what ties together the early pencil drawing and the 'negative' photographs of computer screens – a search for dialogue, and for the often vertiginous distances it requires.

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1 Centre Pompidou. Ensemble de 12 négatifs couleur (4 pour le projet Bizan, 6 pour le projet Yaizu 2 et 2 pour le Mix). https://www.centrepompidou.fr/fr/ressources/oeuvre/cj5X8ag [accessed 22 August 2022].
2 Itsuko Hasegawa, *Of Seas and Nature and Architecture* (Tokyo: Shokokusha, 2012), 3.
3 Koji Taki, 'Oppositions: The Intrinsic Structure of Kazuo Shinohara's Work', *Perspecta: The Yale Architectural Journal*, 20 (Cambridge/London: The MIT Press, 1983), 46–60.
4 Hasegawa, *op. cit*., 3.
5 Milan Kundera, *L'art du roman* (Paris: Gallimard, 1995), 85.
6 Hasegawa, *op. cit*., 3.
7 Itsuko Hasegawa, 'An exercise of formally structuring a house', *E-Flux* (2020), trans. Kayoko Ota: https://www.e-flux.com/architecture/confinement/352547/an-exercise-of-formally-structuring-a-house [accessed 20 August 2022]. Originally published in *Toshi-Jutaku Quarterly (Urban housing)*, no. 12 (winter 1976), ed. Makoto Ueda. (Tokyo: Kajima Institute, 1976), 121–7.
8 Thomas Daniell, *An Anatomy of Influence* (London: Architectural Association, 2018), 127.
9 The top three plans correspond to (l-r) *House at Kakio* (1977), *House at Kamoi* (1974), and *House at Midorigaoka* (1975); the right-hand-side one of the second line loosely relates to the first *House at Yaizu* (1972).
10 Actually, she seems to have first realised and published a small housing block in 1971, but it was then omitted in all other publications on her work.
11 Itsuko Hasegawa, 'My Work of the Seventies', *Space Design*, no. 247 (April 1985), ed. Kobun Ito. (Tokyo: Kajima Institute, 1985), 108–9.
12 Marc Guillaume et al., 'Méandre', *Epreuves d'écriture*, eds Jean-François Lyotard and Thierry Chaput (Paris: Centre Georges Pompidou, 1985), 134–7.
13 Hasegawa, *Of Seas and Nature and Architecture*, *op. cit*., 89.
14 Karl Popper, 'Of Clouds and Clocks', in *Objective Knowledge: An Evolutionary Approach* (Oxford: Oxford University Press, 1972), 206–55.
15 Hasegawa, 'House at Kakio (Work T)', *Toshi Jutaku Quarterly*, *op. cit*., 126.
16 *Ibid*.
17 Hasegawa, *Of Seas and Nature and Architecture*, *op. cit*., 89.
18 *Ibid*., 103.
19 Hasegawa, 'Tokumaru Children's Clinic', *Space Design*, *op. cit*., 115.
20 Marcela Aragüez and Itsuko Hasegawa, 'A Gentle Revolution', in *Lobby*. no. 6 (Autumn/Winter). (London: The Bartlett School of Architecture, 2017), 40–55.
21 Itsuko Hasegawa, 'Poetic Machine', *The Japan Architect*, no. 339 (July 1985). (Tokyo: Shinkenchiku-sha, 1985), 17–24.
22 Roemer van Toorn and Ole Bouman, 'On the Work of Itsuko Hasegawa: Man Without Qualities … is a Woman!', in *The Invisible in Architecture*, eds Roemer van Toorn and Ole Bouman (London: Academy Editions/Berlin: Ernst and Sohn, 1994), 476–80.
23 Cf. Yann Nussaume, *Anthologie critique de la théorie architecturale japonaise: Le regard du milieu* (Brussels: Ousia, 2004), 361.
24 Itsuko Hasegawa, 'Poetic Machine', *op. cit*., 24.
25 Michel Houellebecq, *H.P. Lovecraft : Contre le monde, contre la vie* (Paris: J'ai lu, 1999), 97.
26 Itsuko Hasegawa, 'Mandala', *Sixtieth-Anniversary Issue of Shinkenchiku: A Style for the Year 2001*, Special issue of *Shinkenchiku*, ed. Shozo Baba, Takeshi Ishido, Toshio Nakamura, Fumihiko Maki, Koji Taki, Hiroshi Hara and Osamu Ishiyama, July 1985 (Tokyo: Shinkenchiku-sha), 98–99.
27 Jacques Rancière, *Les Temps modernes: art, temps, politique* (Paris: La Fabrique, 2018), 105–108.
28 *Ibid*., 110.
29 Jean Baudrillard, *Pourquoi tout n'a-t-il pas déjà disparu* (Paris: L'Herne, 2007), 24–25.
30 Rancière, *op. cit*., 113–14.
31 Beatriz Colomina, *X-Ray Architecture* (Zürich: Lars Müller, 2019), 120.