

# Chapter 8

## THE DESIGN PROCESS



Fagan design sketches: House Beyers (1998), House Swanepoel, Cape St. Francis (1980), House Paradys (2003), House Die Es (1965).

### This section describes Gabriël Fagan's design process:

Design terminology will be explained and the design methodology will be described.

Fagan's design process will be contextualised and explained within the 'discipline of design'.

Reference will be made to sketches made by Fagan as well as interviews with him and former and present staff members.

The analysis and description of the design process will be guided by Fagan's lecture notes and interviews with the author.

House Swanepoel in Cape St. Francis (1980) will be used as case study as it offers the most comprehensive set of design process documentation.

## 8.1. RATIONALITY AND INTUITIVITY

For me creativity is, you know, finding solutions for all these things that are contrary, and the wrong type of creativity is that you just forget about the fact that sometimes it rains, you forget that sometimes there are many people, and you just make beautiful stairs from the one idea you have in your head. This is not creativity, it is fake creativity (Herzberger quoted in Lawson, 2005:153).

The description of creativity by Herzberger finds parallels in the work of Fagan through its recognition of the everyday in design. Fagan's pragmatic design approach results in contextually appropriate and functionally suitable houses, but the resultant forms are a unique synthesis of past influences and present conditions – and are the result of a distinctive design talent. Fagan's ability to reinterpret the Cape vernacular as a series of principles has allowed him to understand the value of tradition for the present condition. He has re-evaluated the functionalist canon of the Modern Movement in a similar way, and through these processes Fagan very much emulates how author and journalist Arthur Koestler identifies the psychology of the creative act (1964:119-120). He sees it as

... the displacement of attention to something not previously noted which was irrelevant in the old and is relevant in the new context; the discovery of hidden analogies as a result of the former; the bringing into consciousness of tacit axioms and habits of thought which were implied in the code and taken for granted; the uncovering of what always has been there. ... The creative act is not an act of creation in the sense of the Old Testament. It does not create something out of nothing; it uncovers, selects, re-shuffles, combines, synthesizes already existing facts, ideas, faculties, skills. The more familiar the parts, the more striking the new whole.

It is virtually impossible to completely distil any creative person's design process as it is usually a deeply personal endeavour that they are unwilling or unable to describe. Stages of the design process such as assimilation, general study, development and communication have been defined by authors such as Lawson (2005:34) in *How Designers Think: The Design Process Demystified*, but the processes that create linkages between them are difficult to assess or describe. Simply put, the creative process has, as its bookends, problems (or opportunities) and solutions. If the same problem was given to a number of architects, there is no doubt that each solution would be very different. Commonalities will certainly be present as briefs and sites present direct clues, but the differences in natural design ability, imagination and life experience of the architect will imbue the results with diverse nuances. And it is the mediation between these 'external' and 'internal' influences that create a different end result. 'External' influences are the architectural brief, site conditions, budget, available technologies and the role and involvement of the client, while 'internal' influences are generated from the designer through his education and life experiences. Papadaki's description (1950:27) of the work of Oscar Niemeyer highlights the power of imagination in the design process:

This [mediation] is not based on a simple, mechanical activity nor on an act of will; it is certainly not the result of the impulse of a talent. The slow, gradual subordination of given realities (the seemingly irreconcilable arbitrary realities of program, materials and budget) to a stronger reality of form and content, to that particular reality which is the "work" with a face and identity all its own, is not accomplished by analytical and rational operations, nor by the mediation of a system under the guidance of a given methodology. Active imagination in action with its power to associate images with a freedom, order and logic which are of its nature, continuously nourished by an inexhaustible unconscious can alone precipitate this act of transformation ("of" a reality "to" the reality) which has the appearance of the miraculous. Then, buildings acquire their own destiny; the shape they prescribe comes to life; and conflicts between container and content fade away. The event of such a new reality is always a surprising one, a welcome surprise: an image that in its turn stimulates the imagining faculties and becomes the source of a still newer series of images within man's emotional being.

## 8.2. DESIGN

The origin of the word design is from the Latin *designare* meaning 'to designate'. Design is both a verb and a noun. As a noun it describes the outcome of a creative process and as a verb it means the action required to arrive at a solution to a problem or to respond to opportunities. Two types of design process have been posited. The Rational Model was developed simultaneously by Simon (1916-2001)<sup>225</sup>, Pahl and Beitz (Pahl *et al*, 1996)<sup>226</sup>. It is a process-driven model that is based on rationalist philosophy and relies on the identification of constraints and the development of objectives. It consists of a number of related stages. The Action-Centric model is the counter to the rational process and can be described as an intuitive activity where designers use emotion, imagination and improvisation to design (Lawson, 2005:143). There are no identifiable stages and no perceivable sequence.

## 8.3. THE DESIGN PROCESS

The rational design process involves a series of stages. Designers sit at the centre of this action and act as mediators between problem and solution. The designers' tools are their influences, design talent and imagination. Lawson (2005:49) suggests that the negotiation between problem and solution is achieved through the three activities of analysis, synthesis and evaluation. These activities are generic to most rational design processes and can be expanded on as follows:

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– <sup>225</sup> Simon and Newell's seminal work *Human problem solving* of 1972 describes the rational approach.

– <sup>226</sup> Paul and Beitz's rational model is based on engineering processes.

### **8.3.1. Initiation**

A design scheme will commence, most often, with the requirements set by a client. This will not necessarily identify the problem but will establish a practical (or perhaps even a theoretical) context. The problem will be identified by the designer through an exploration of 'external' effects and 'internal' influences.

### **8.3.2. Preparation**

Once the initial problem has been identified, or as it unfolds, a series of investigations are undertaken. This involves gathering and analyzing site and programme information, and assessing formal possibilities and technological constraints.

### **8.3.3. Incubation**

A period of introspection often follows. Although some designers prefer to design immediately, others regard time away from the problem as an important process. This period of unconscious thought mediates conscious 'external' effects and 'internal' influences, while creating connections between often disparate design requirements. Koestler (1964:111) notes that this period is characterised by the "intervention of the unconscious".

### **8.3.4. Synthesis**

After identification of the design problem the architect will produce options that draw together commonalities identified during preparation. These will be synergized with the designer's 'internal' influences. The extent of the power of 'internal' influences will often determine the final form, as some architects are more canonically inclined than others. In any event, previous design influences will have an impact. Drawings and models are used to mediate between idea as thought and building as reality and give expression to imaginative and creative ability. This period is also characterised by convergent and divergent thinking. Lawson (2005:143) states that

typically the convergent task requires deductive and interpolative skills to arrive at one identifiably correct answer. Convergent ability is measured by many of the conventional IQ test problems and has been associated with ability in science. The divergent task demands an open-ended approach seeking alternatives where there is no clearly correct answer.

### 8.3.5. Evaluation

Design solutions will be tested against the requirements of the brief and the exigencies of the site and initial design intentions. The process is a reiterative one with continuous testing and refinement of proposals. Conceptual ideas are tested through sketches and models and later developed into sketch plans.

### 8.3.6. Action

A final solution is chosen and documentation is drawn up to give effect to design intentions.

## 8.4. FAGAN'S DESIGN PROCESS

Fagan indicates (2008b) that he is 30% rational and 70% intuitive in his design process, explaining that (2012a)

... after almost 70 years in the game one builds on experience, which translates into intuitive design decisions. So to that extent I believe that the 70% intuitive is inherently rationally founded.

Fagan's design process is a complex synthesis of 'internal' and 'external' influences that is biased towards the pragmatic and the experiential and not based on any particular theoretical standpoint. This is reinforced by Fagan in his Eaton Memorial Lecture entitled "An Enabling Architecture" in which he comments on the published work of some young practitioners:

Imagine the frustration in designing even a small house for yourself if you are 'controlled by all that is being resisted, where the simple logic of binary opposites transfixes the mind with a casebook denial of suburban culture, in the best modern tradition. Once again the familiar position of heroic resistance, of unwitting conformity with the elitist subcultural leanings of my acquired education and taste culture'. Phew! The muse has obviously become incestuous, and architecture more interested in defining itself than in extending its functional dimension, than in life itself (Fagan, 1996:1).

Fagan's design process is no different to that of most architects. However, he mediates problem and solution through a thorough investigative process and often long periods of incubation. He receives a commission, elicits a brief, visits the site, cerebrates, explores and produces. Meintjies (2012), who worked with Fagan at Volkskas and in his office in Cape Town in the 1960s, describes Fagan's design approach:

I'm not sure if I understood the process. He always started with a strong concept, often a tiny freehand sketch done sometimes while he was flying alone. He seemed able to

visualise the whole (even though his sketches were not very elegant or polished) and during later development he would often do odd developed projections, also around corners, to visualise different elements as a whole, like rather unconventional perspective sketches.

The design process is often lengthy. Many clients (Simpson (2009), Raynham (2009) and Mitchell (2009)) comment that they had to wait sometimes up to eighteen months for a proposal. Serritslev (2009) notes that "clients had to be patient" and the solution is "in his head for a very long time". It is not that Fagan struggles to design, although he (Fagan, 2010a) did admit that he was finding it difficult to come up with a solution for House Visser in Langebaan, due to problematic site conditions and extensive accommodation needs. Fagan requires detailed information before he makes any decisions and this process can take a while. Lourens (2008) explains that Fagan was once designing a handrail to the edge of a public car park and painstakingly investigated the sizes of various vehicles, the relationship of the human to the handrail and various configurations of handrail size and shape before finally making his decision.

Fagan's design process is also not a continuous one as it is interrupted by other work and prolonged periods of incubation. He confirms this (2008b) when he comments that the problem with architecture is that it is an ongoing process, laughingly commenting (2008b) that he only completed the design and construction of the front door to his parents' house Keurbos (1951) in 2008, almost sixty years after it was built. He also relates that his daughter who started studying architecture gave it up after three years, preferring the immediacy of music and audience feedback. Fagan indicates (2002a:1) that "the many joys of practicing architecture certainly do not include instant gratification". But once information is at hand and Fagan has been primed (2008b), ideas come quite quickly. Design work also often happens at home (Lourens, 2008; Serritslev, 2009; Wilson-Harris, 2009), most probably as there are fewer distractions and as design is a very private process (Fagan, 2008b). Little discussion happens with anyone else except his wife. Fagan remarks (2000b and 2008e) that design is

... usually private, but lately [I] tend to discuss with Gwen as she understands what I am trying to achieve.

Only when the idea is thoroughly conceived to quite a detailed level (Serritslev, 2008) will Fagan ask a staff member to draw it up so that further development can occur. Fagan's wife also notes (2008b) that because Fagan is becoming lazy (who wouldn't at 86?) she will often initiate a project which then jolts him into making responses and criticisms. This was confirmed by Wilson-Harris (2009).

In any project 'external' design generators are many and varied, but for Fagan the most important informants of site and program go hand-in-hand. Fagan explains (2008b) that he likes to firstly familiarise himself with the program and once this is concretised, the site and its qualities can be investigated through the drawing of proportional diagrams or "cutting pieces of paper to the right size and shuffling them around" (Wilson-Harris, 2009). Fagan (2012a) explains:

I would like to believe that my designs evolve from both an understanding of the environs, climate and site as well as specific client requirements (which they cannot always verbalise or express themselves) while also belonging to the Cape or Karoo as the case may be. This cannot be consciously applied, but must spring from an intimate knowledge of the vernacular.

This correlates with the design thinking of one of Fagan's teachers, Norman Eaton, who commented (Harrop-Allin, 1975:59):

You have a problem and you solve the problem according to its particular aspects: the requirements of your client, of building and everything else to do with that particular problem.

Quite often, important aspects gleaned from the requirements of the client guide the entire design process. House Swanepoel in Cape St. Francis (1980) is a case in point. The necessity for five bedrooms and living space all facing the sea view prompted a linear layout. The client for House Lückhoff (1981) stipulated "a timeless white uncluttered space" and was presented with a series of white painted brickwork barrel vaulted elements.

Fagan's design process is a mediation of an investigative 'first principles' approach (developed during his Pretoria education) merged with a stock of well-honed previously defined solutions for particular parts of the design problem (Serritslev, 2009). This process delivers unique solutions that are fresh in their approach but 'historical' in their expression. They are never stylistically driven and echo the approach of Eaton who stated that:

You cannot start off with preconceived ideas about what things should look like. They should shape themselves under your hands as you are solving the problems of construction, servicing, climatic conditions and so on. The idea that you start off with a preconceived idea of style, or facade, or anything else, is the death of architecture. These things have nothing to do with architecture at all (Harrop-Allin, 1975:59)

Fagan questions the requirements of each space or element, rethinking approaches and "putting away preconceived ideas" (Wilson-Harris, 2009). Ideas are important for Fagan and usually framed in spatial terms and informed in most cases by aspects of the natural environment. They are developed from a detailed understanding of the site and programme. House Raynham (1967) is orientated around the nearby mountain, while Die Es (1965) is formed by the architectural promenade that guides the visitor from distant to framed sea views, and links mountain and ocean. House Swanepoel in Cape St. Francis (1980) straddles the dunes and connects to the ocean through views, while Paradys (2003) merges with the ground and focuses linearly on the ocean. Here direct linkages to earth and water cement Fagan's lifelong contextual influences. The entrance and main circulation route in House Blommaert (1982) orientate the visitor towards Table Mountain, while House Bertie-Roberts (1966) connects to Lion's Head (Fagan, c. 1985:12).

'Internal' influences are brought to bear on all Fagan's house designs. The principles of the Cape vernacular, such as 'plastic expression' and the 'architectural promenade', are the main drivers of new design. He notes (1985:4) that

... possibly, influences were absorbed rather than consciously expressed and analyzing them now could miss the mark (Fagan, 1985:4).

Fagan's design approach is regionally inclined but there are no pedantic climatic responses such as northerly orientations for living spaces, Fagan preferring to connect to nature through view and mediate climatic concerns by other means. At Die Es (1965), solar gain problems due to a west-facing sea orientation were mitigated by sliding shutters and thermal mass in the thick concrete floors and western wall.

Fagan's design process roughly aligns with the generic creative process defined by Simon, Pahl and Beitz (1996) and Lawson (2005).

#### **8.4.1. Initiation**

Consider now the Swanepoel house in Hermanus. As with all clients, Gawie Fagan insisted that the Swanepoels record their preference in writing. He further insisted that they do not subsequently modify their demand because of the sympathy they feel for the difficulties an architect would face in meeting them. This is a rare example of professional probity, as we all know that today most architects feel that their clients often demand the impossible (Pretorius & Raman, 2006:14).

In the early part of his career Fagan meticulously reframed or minuted briefs on office notepaper. Later they were hand-written, often by his wife. His main clients over the years, the Swanepoels, have always presented Fagan with a beautifully hand-written brief with an accommodation schedule and a description of "aesthetic preferences" and "feeling and atmosphere". This clarity has, on the one hand, provided Fagan with powerful ideas but, on the other, the restrictive nature of client requirements has not deterred him from bringing his own influences to bear on the design process. As will be described next, Fagan prefers to be well briefed before any design work can commence.

#### **8.4.2. Preparation**

After thoroughly familiarising myself with the program, I spend as much time as possible on the site under different conditions (Fagan, 2008e).

Fagan attempts to "get the basics right" as the rest will fall into place (Lourens, 2008). His



preparatory work is crucial in establishing the ground rules for the design and his quote reiterates the standpoints of his lecturers such as Cole Bowen and Stauch (Nation, 2001).

#### 8.4.2.1. The program

The briefs for the two houses designed for the Swanepoel family (1980 and 1990) are very clear in content and intention. Fagan's wife remembers (2008d) that Montu Swanepoel was an artist who knew what she wanted and also required clear explanations as to what was being designed. Fagan is, however, selective about what to use and what to reject from a client brief. In House Swanepoel in Hermanus (1980) the client states that "bedrooms can possibly open to inner atrium space" but also that "a feeling of spaciousness be achieved with light structures and floating planes". The clients got their atrium space but the stereotomic solidity of the Cape tradition took precedence over a light approach to form making. Meintjies (2012) writes that Fagan always

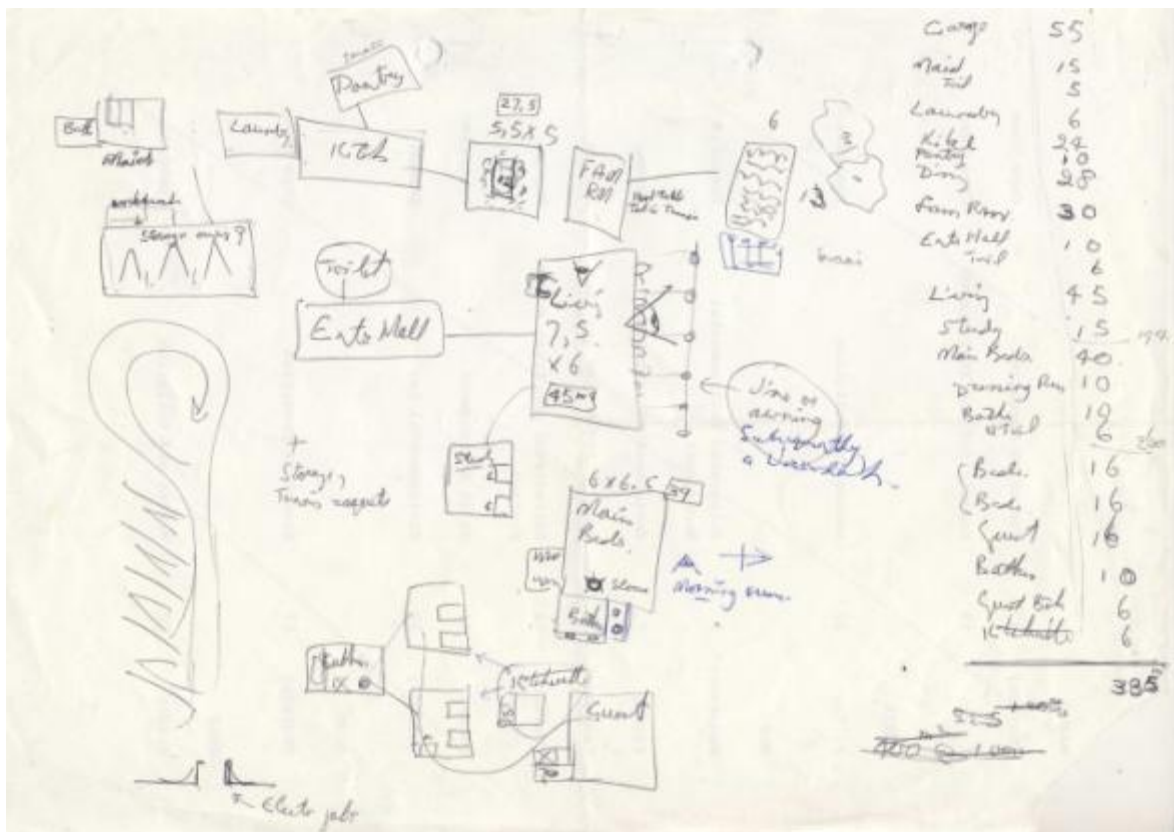
... knew what he wanted and there was never any compromise. Absolutely admirable but which sometimes caused client unhappiness (Meintjies, 2012).

Although Fagan knows what he wants he is not dogmatic in his approach and a close reading of archived briefs reveals a close subscription to client requirements. It is through technological and aesthetic treatment that Fagan brings his own internal influences to bear. But he also layers his interpretation of his 'mentor', as seen in his quote from Le Corbusier's *New architecture of 1927*:

Let us state the problem: A house: A shelter against heat, cold, rain, thieves and the inquisitive. A receptacle for light and sun. A certain number of cells appropriated to cooking, work, and personal life. A room: A surface over which one can walk with ease, a bed on which to stretch yourself, a chair in which to rest or a work-table, receptacles in which each thing can be put at once in its right place. Such are the Standards of the Dwelling (Fagan, 1969:2).

For House Swanepoel in Cape St. Francis, the client requests "integration with the environment if possible" and "shutters for security and air ventilation". Montu also remarks that a separate main bedroom away from the children would be an advantage. The brief was less prescriptive than that for the Hermanus house and a small note to Fagan indicates that it is "now over to you". Fagan does, however, manage to bring his 'internal' influences to bear on the strict program and limitations of aesthetic guidelines.

Fagan articulates his understanding of the program through sketches of room sizes and relationships in an ordered manner. The resultant 'bubble' diagrams such as for House Auldearn (1992) (see Fig. 8.1) are drawn in proportion, displaying functional relationships with other spaces, with solar orientation requirements in mind and with detailed room sizes. These sketches also provide a total floor area.



**Figure 8.1.** Fagan's organizational layout for accommodation for House Auldearn (1992) (Fagan archive, job no.9302, undated).

The influences of functional planning can be traced back to the organizations of Le Corbusier and later through the organized planning of lecturers such as Stauch and Cole Bowen. Fagan cites Le Corbusier's philosophy in his 1969 lecture entitled "Architecture and your home":

When a thing responds to a need, it is not (necessarily) beautiful; it satisfies only one part of our mind, the primary part, without which there is no possibility of rich satisfactions; let us recover the right order of events. Architecture has another meaning and other ends to pursue than showing construction and responding to needs (and by needs I mean utility, comfort and practical arrangement) (Fagan, 1969:5).

#### 8.4.2.2. The site

Sketches by Fagan demonstrate a clear approach to the collection of site information. They merge a rational site investigation, through measurement, with a more intuitive analysis of context through observation. John Wilson-Harris (2012) notes that

[t]he north point – As far as Fagan is concerned, this is one of the most important symbols on a drawing and it encapsulates his awareness of designing with the elements. The other essential device, which I had not seen until I joined the practice, is a drawing made up of concentric circles with each circle being a degree of elevation and the plotted points around the circles being the direction of certain important

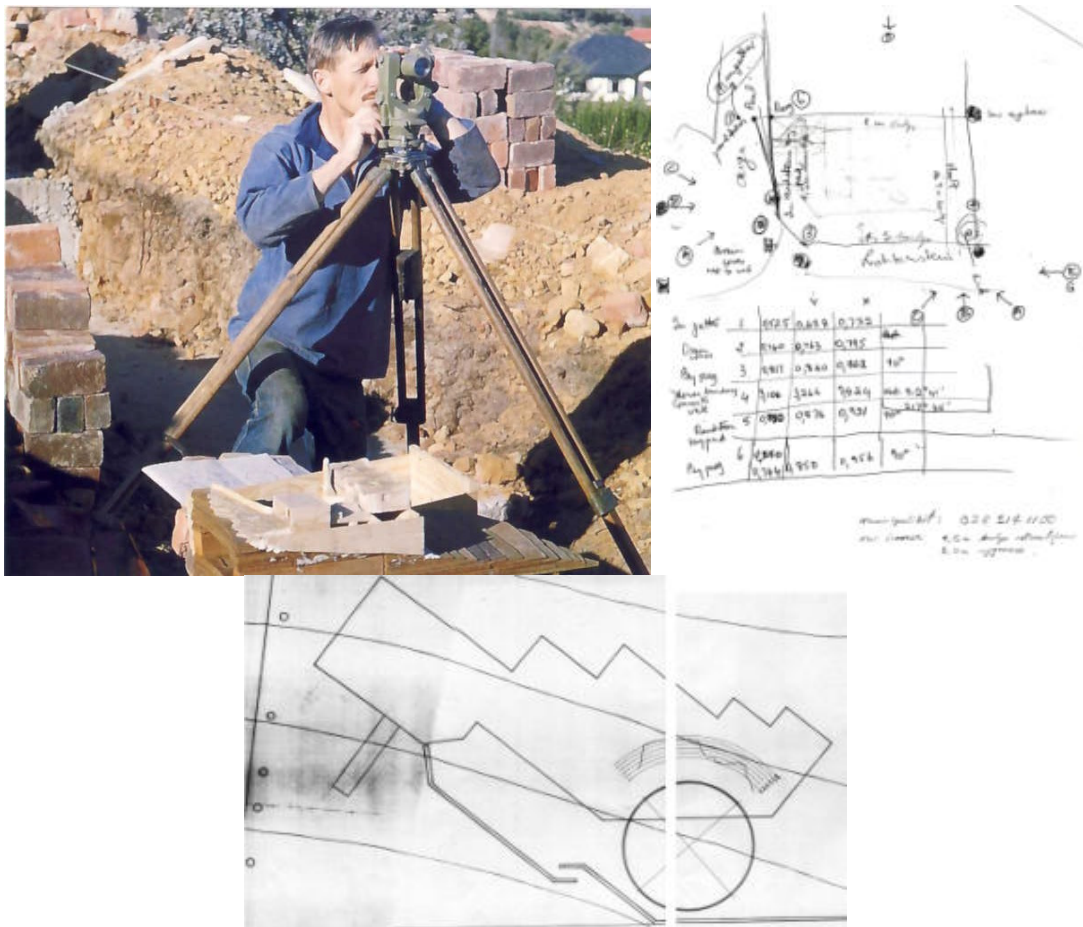
landscape points. This gives an accurate indication of where important views are and how high or low their elevation is on the same drawing, again reinforcing the importance of context in design.

Fagan's engineering training proves useful as he takes levels both horizontally and vertically and plots outlines of landscape features which are later superimposed on plans (see Fig. 8.2).

But even with the site determined, the building must relate to its environment, and a good aid is to determine all angles, horizontal and vertical, of prominent features as seen from the site, or conversely, as the finished building will one day be seen from these same places (Fagan, 1979:7).

Lately the surveys seem to include site levels only as Fagan has probably developed an intuitive sense concerning the effects of the vertical dimension. Sketches for House Van Zyl (unbuilt, 2007) (see Fig. 8.2) demonstrate Fagan's detailed site surveys and associated comments. Fagan (1969:4) stresses the importance of a contextual response:

... a modern house taking account of site, views, sun, access and specific requirements of the owners, [is] bound to be a personal statement.



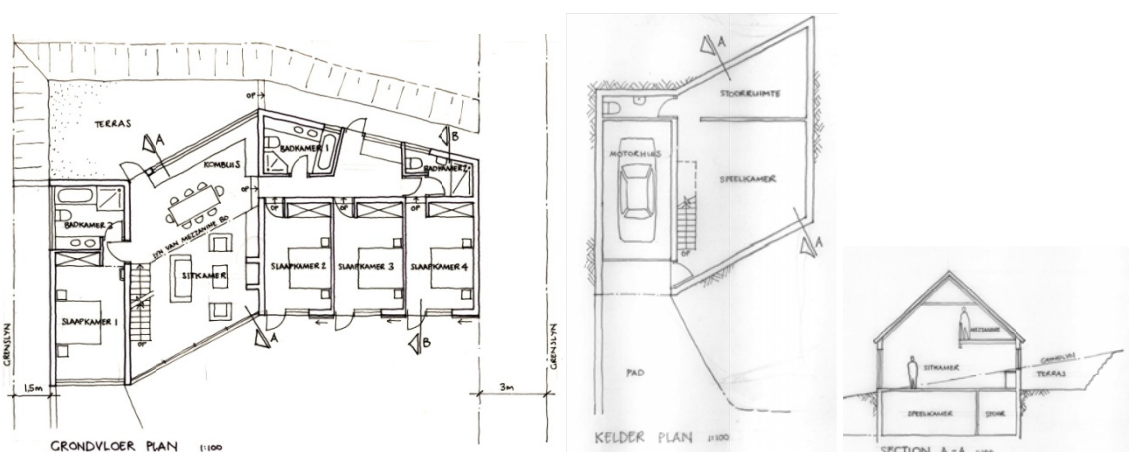
**Figure 8.2. Top left:** Fagan taking levels with his theodolite at Die Es. Note the model in the foreground (Fagan 2005a:28). **Top right:** Fagan's site notes and levels for the unbuilt House Van Zyl (2007) (Fagan archive - Job No. 0701, undated). **Bottom:** Site layout of House Raynham (1967) with mountain profile superimposed (Fagan archive - Job No. 695, undated).

House Raynham (1967) was designed with this information at hand so that Fagan could accurately locate the central entry on an axis with Table Mountain (see Fig. 8.2). Fagan also makes a more intuitive study by sketching contextual influences from and onto the site. The clients for House Auldearn explain (2009) that Fagan spent many hours visiting their site in Elgin at different times to assess the climate and topography. Fortunately Fagan's daughter, Jessie, owns the adjoining farm and he could visit often at his leisure.

#### 8.4.3. Incubation

Wilson-Harris (2009) explains that Fagan's design process is characterised by periods of 'lying in the bath' when unconscious thought provokes possibilities which are then tested. Lourens (2008) indicates that Fagan's design process is "slow to start" but that a "thorough and considered approach" is taken to the gathering of information. Fagan (2008b) notes that he will often "doze on a problem before going to sleep just as his father had over sonnets he wrote".

But the time taken to conceptualise a project varies from client to client and site to site. Although some clients like Mitchell (2009), Simpson (2009) and Raynham (2009) have indicated that the design process took a long time, others make no mention of the time frame. An initial client letter for House Auldearn is dated 12 February 1991 and a non-acceptance tender letter is dated 19 August 1993. A client letter indicates a preference for construction to begin in April 1992 and finish by February 1993, but construction drawings are dated March 1993, so on all accounts the process, from inception to start of construction, took about two and a half years. House Fagan in McGregor (2005) (see Fig. 8.3) was initiated with a client meeting in February 2005, with a sketch plan produced within seven months. Unfortunately few sketches are dated so it is difficult to gauge exactly how long the incubation process took for each building.



**Figure 8.3.** House Fagan in McGregor (2005). **Left:** Ground floor plan. **Middle:** Lower ground floor plan. **Right:** Section (all Fagan archive - Job No. 0507, 23/09/2005).

#### 8.4.4. Synthesis: The making of the proposal (Programme and context / Form and technology)

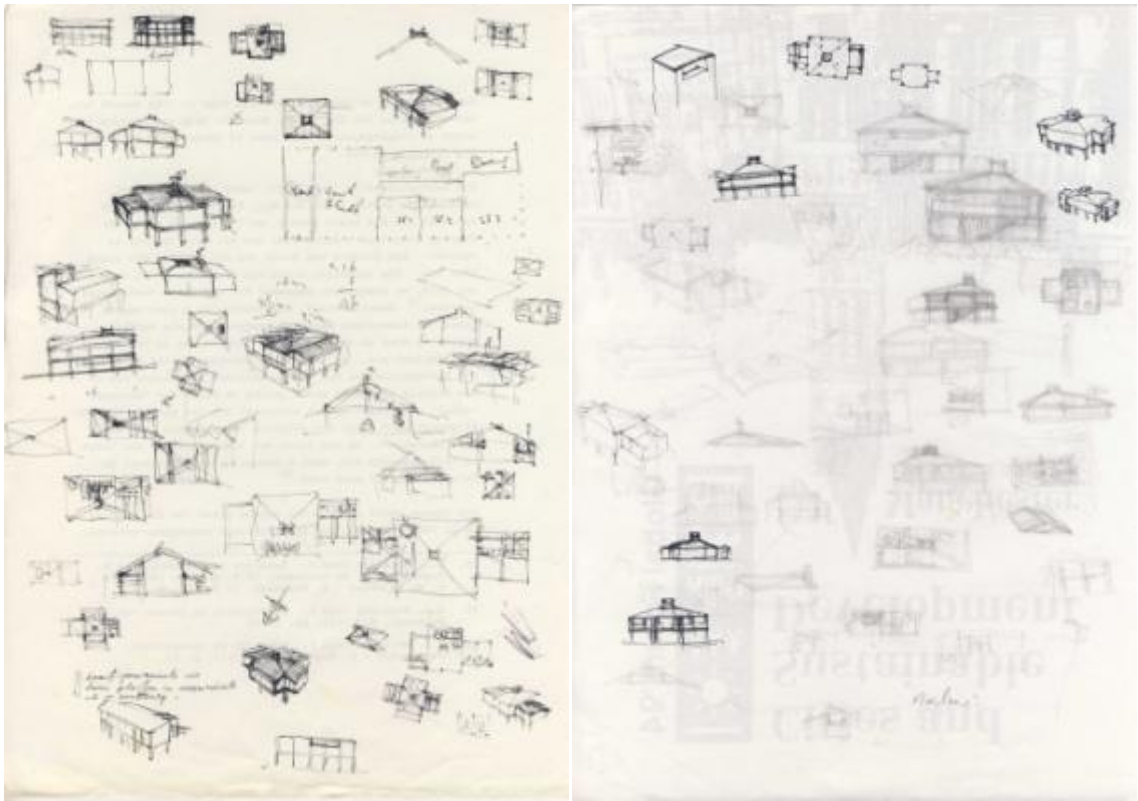
[I] do thumbnail sketches on small pieces of paper that I always carry in my shirt-pocket. I lay great store by the small sketches, and will even scale them, because they show the essence without being distracted by detail (Fagan, 2008e).

Fagan explains (2008e) that the thumbnail sketch was an important part of his University of Pretoria training. It has certainly had a huge impact on his design process. He indicates (2008b) that he puts a lot of confidence in the sketch, which in the case of Die Es (1965) was scaled directly to get the proportions correct, as these aspects are often lost when making more accurate drawings. "Ideas can become attenuated and emasculated if this is not done. The initial 'kick' is lost" (Fagan, 2008b).

The Raynhams (2009) relate that Fagan presented them with a small sketch for the house that he had done while attending a symphony concert quite soon after their first meeting. Fagan explains (2008b) that he designed his own house on the proverbial back of a cigarette box while flying back to Cape Town. The project file for House Beyers (1998) contains six A4 sized pages (see Fig. 8.4) with minute sketches<sup>227</sup> no bigger than a centimetre square. Houses Swanepoel in Cape St. Francis (1980) and Hermanus (1991) were conceived in a similar way, with an exploration of form in three dimensions from a bird's eye perspective. As Fagan explains, "one has to think three dimensionally" (Fagan, 2008b). These sketches are interspersed with fine plan drawings but very little two dimensional exploration seems to happen at this stage. It is only once the overall idea, through developed thumbnail sketches, has been fixed that plans are drawn to scale and then worked up in detail.

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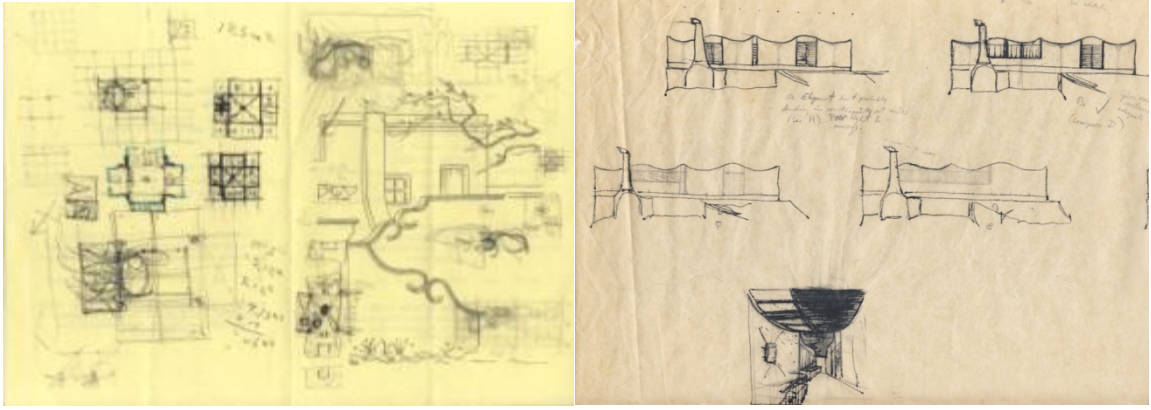
– <sup>227</sup>. Not all job files have initial sketches and Fagan has remarked that a secretary once cleaned out the office and threw away a lot of 'rubbish' as she termed it. A thorough search of the office has, however, revealed many interesting sketches, including a mirrored plan of Die Es.



**Figure 8.4.** Fagan's ink thumbnail sketches on 2 A4 pages for House Beyers (1998) (Fagan archive - Job. No. 9813, undated).

Fagan draws on anything that he can lay his hands on. The back of an invitation to an art exhibition encapsulates the gridded layout of House Beyers (1998) (see Fig. 8.5). White paper, pencil and black ball point pen were used for House Mitchell (2005), while bumf was the medium for House Swanepoel in Cape St. Francis (1980). Fagan used the back of discarded printed paper for both House Swanepoel in Hermanus (1991) and the unbuilt Visser house in Swellendam (2007). Fagan rarely overlays drawings. Bumf was used for die Es (1965) (see Fig. 8.5). Sketches are repeated on the same page and in close proximity until the desired result is achieved and its status marked with a tick. The drawing is seen as a tool of exploration and not expression. Fagan (2008b) disagrees with the statement by Pancho Guedes that buildings are not as important as drawings as they, and not built form, express intent. Meintjies (2012) concurs:

I feel Gawie never thought a drawing, as such, very important or a work of art. It was simply a vehicle for the finished building (Meintjies, 2012).



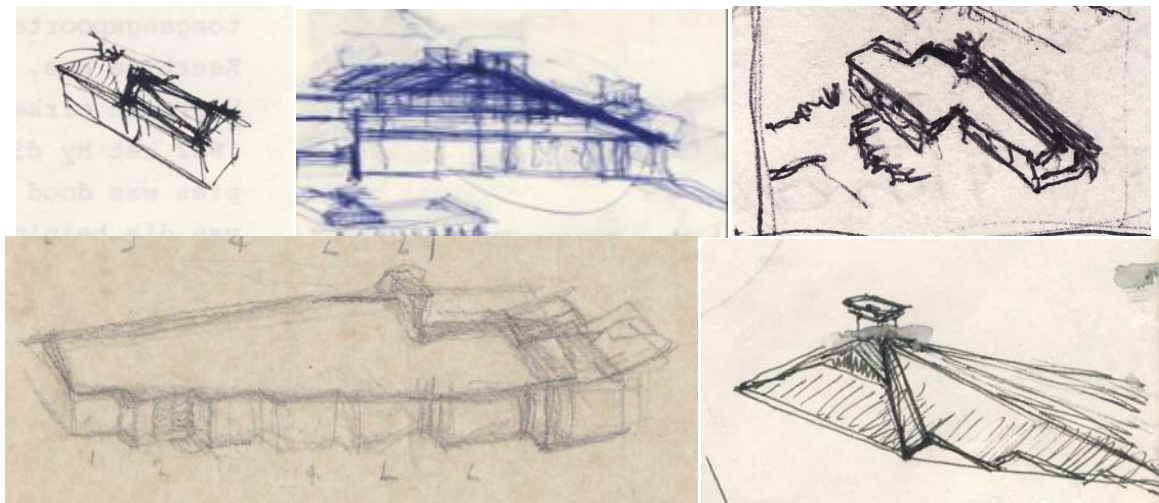
**Figure 8.5. Left:** Fagan's ink sketches for House Beyers (1998) on the back of an invitation to an art exhibition (Fagan archive job no. 9813, undated). **Right:** Fagan's fountain pen sketches on bumf for Die Es (1965) (Fagan archive - Job No. 565, undated).

Fagan (2008b) also relies on very rough models. A few have been discovered in the office basement, gathering dust, but these do not demonstrate a working quality. Elevations are firmly drawn and used as a template for the model. These are perhaps for presentation to the client and unfortunately no evidence of previous versions has been found save for a few photographs of a Balsawood and plasticine model for Die Es and clay for House Swanepoel in Cape. St. Francis (see Fig. 8.6).



**Figure 8.6. Top left:** Balsawood and plasticine model of Die Es (1965) (Fagan archive - Job No. 656, undated). **Top right:** Clay model of House Swanepoel at Cape St. Francis (1980) (Fagan archive - Job No. 8011, undated). **Bottom left:** Cardboard model of House Auldearn (1992) in possession of client (Fagan archive - Job No. 9302, undated). **Bottom right:** Cardboard model of House Mitchell (2005) (Fagan archive - Job No. 0503, undated).

The design process is largely divergent at this stage. Explorative work is extensive and formally driven and there is little evidence of site context shown in the thumbnail sketches. Only those of House Swanepoel in Cape St. Francis (1990) show the overall relationship of the house to the dunes. There are other plan drawings outlining the effects of view and climate but Fagan has indicated these were drawn to show the process to the client. It can be assumed that the site is engrained in Fagan's head and that he does not find it necessary to show this to himself. A slight convergence in process has been noted in the initial design phase. The roofscape pattern set by House Raynham (1967) often occurs in the initial phases of other designs. Explorations for houses Beyers (1998), Auldearn (1992), Neethling (1983), Fagan in McGregor (2005) and both Swanepoel houses (1980, 1991) show an offset chimney with roof planes drawn towards it (see Fig. 8.7). This was dispensed with in Beyers, Auldearn and Fagan in McGregor after further investigations.



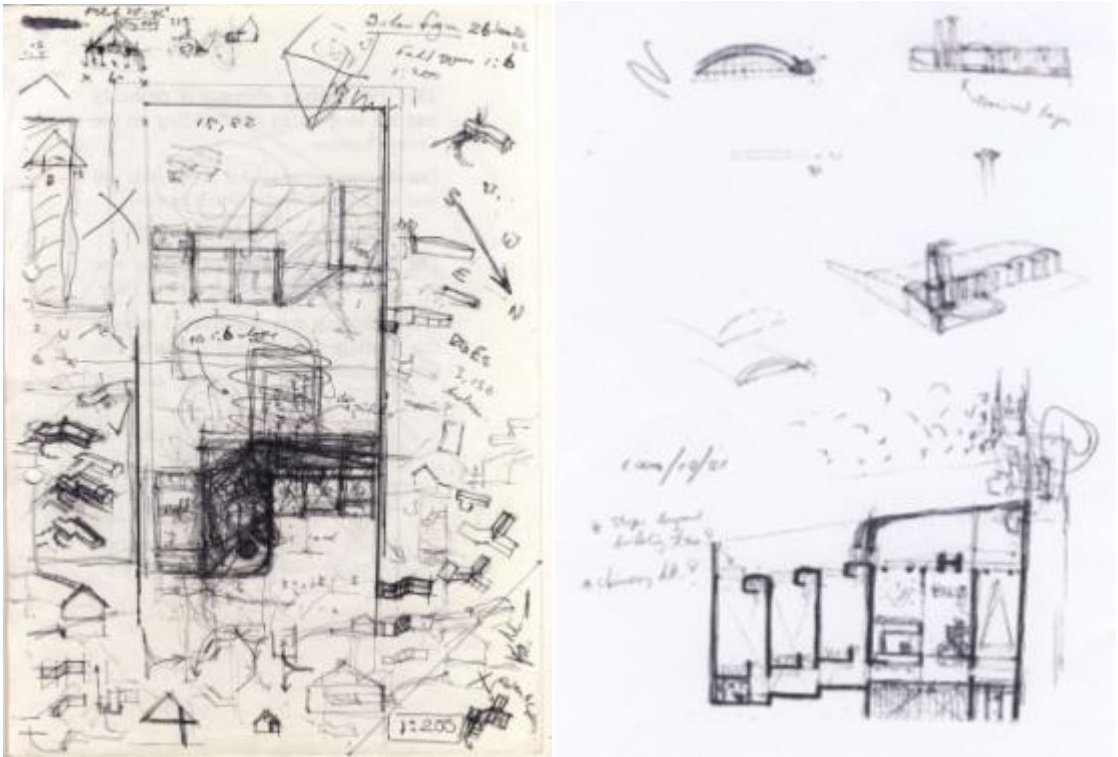
**Figure 8.7. Top left:** One of Fagan's initial sketch for House Beyers(1998) (Fagan archive - Job No. 9813, undated). **Top middle:** Sketch for House Auldearn (1993) (Fagan archive - Job No.9303 , undated). **Top right:** Sketch for House Fagan at McGregor (2005) (Fagan archive - Job No. 0507, undated). **Bottom left:** Sketch for House Swanepoel at Cape St. Francis (1980) (Fagan archive - Job No.8011 , undated). **Bottom right:** Fagan's sketch for House Swanepoel at Hermanus (1990) (Fagan archive - Job. No. 9021, undated).

The initial limited two-dimensional explorations illustrate an intense explorative process. Lines are drawn over and over as various programmatic options are explored and formal relationships investigated (see Fig. 8.8). Fagan's development of three-dimensional form is clearly founded in his knowledge of the Cape vernacular as the singular object is always sketched. His programmatic explorations are founded in his mediated Modern Movement education through the articulation of attenuated plans and combined service areas.

Both typology and functionalism ... despite their common root ... lead to opposite results: typology favours continuity, functionalism is more likely to lead to innovation (Brawne, 2003:22).

Technological exploration often accompanies the conceptual work, such as the barrel vaults at Paradys (2003) (see Fig. 8.8) and eaves details at House Fagan in McGregor (2005).





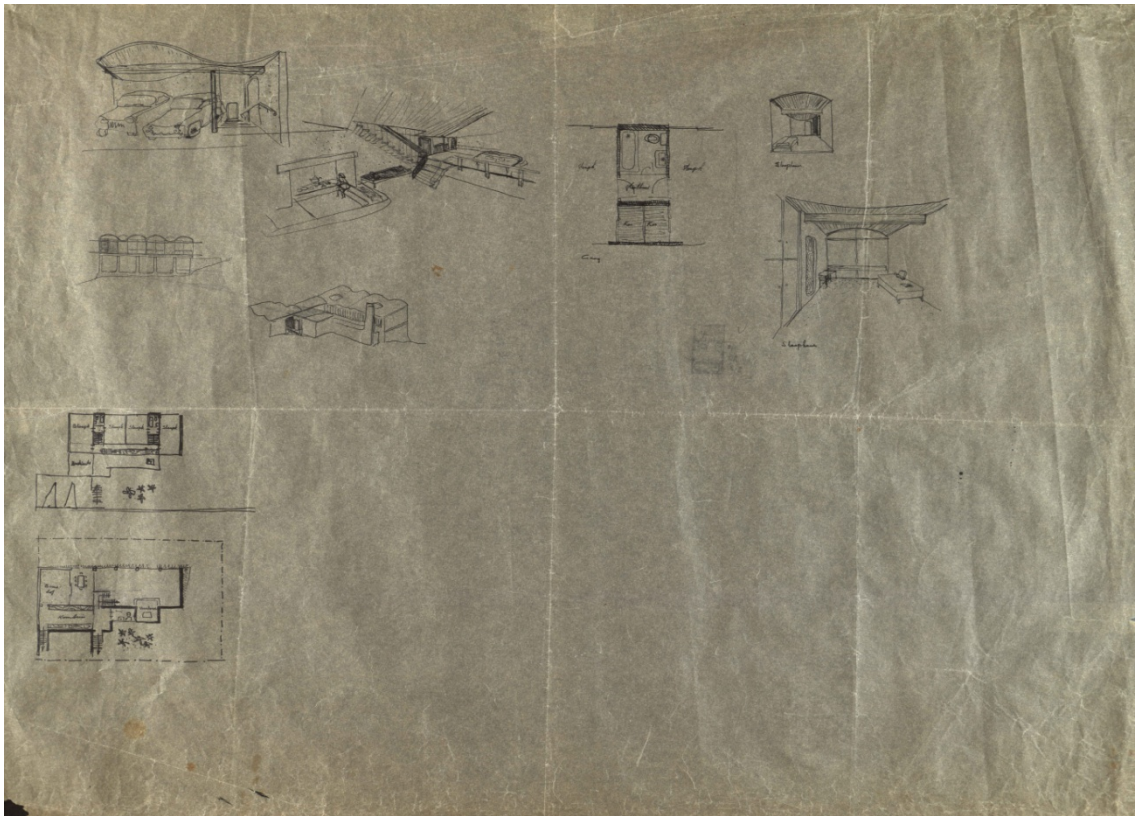
**Figure 8.8.** Left: Sketches for House Fagan at McGregor (2005) (Fagan archive - Job No. 0507, undated). Right: Sketches for House Paradys (2005) (Fagan archive - Job no. 0205, dated 15/10/2007<sup>228</sup>).

#### 8.4.5. Evaluation

The limited sketches that remain of Die Es demonstrate Fagan's testing of design options. There are two plan options shown, one a complete mirror of the final design (see Fig. 8.9), while elevations are rigorously investigated and chosen options marked with a tick (see Fig. 8.5). It is only in this scheme that drawn evidence can be seen of the proportional systems that Fagan has learnt from Hambidge and Jooste's approaches. Details like door handles (see Fig. 7.13) and post-box covers are shown with ordering diagonal lines and although the system was supposedly applied to the entire building, the plan and elevation drawings do not show these investigations. A quick calculation of plan size, however, indicates that the first floor is made up of two adjacent rectangles with golden section proportions. Fagan notes (2008a) that he used this system in the early years of his work but that "you can't do it in the office as it is not practical".

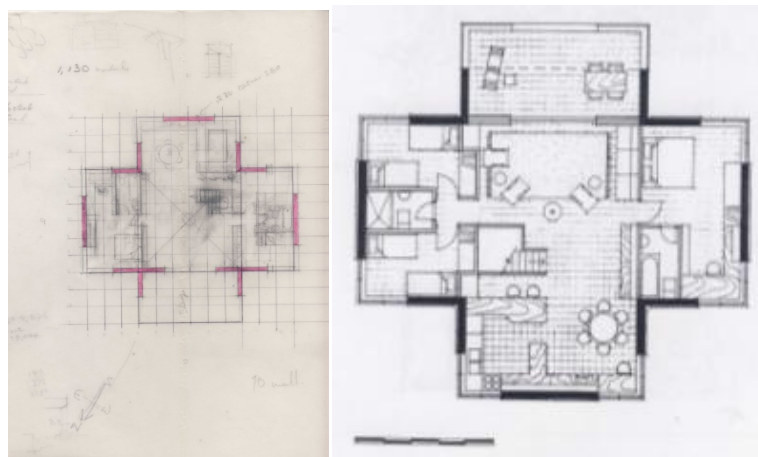
A system of proportions was always applied in the final stages using his own set of dimensions based on the Modulor and applying Hambidge's Dynamic Symmetry (Meintjies, 2012).

— <sup>228</sup> This seems incorrect as the house had already been constructed.



**Figure 8.9.** Fagan's sketches in ink on bmf for Die Es (1965). The drawings show a completely mirrored layout of that which was built (Fagan archive - Job no. 656, undated).

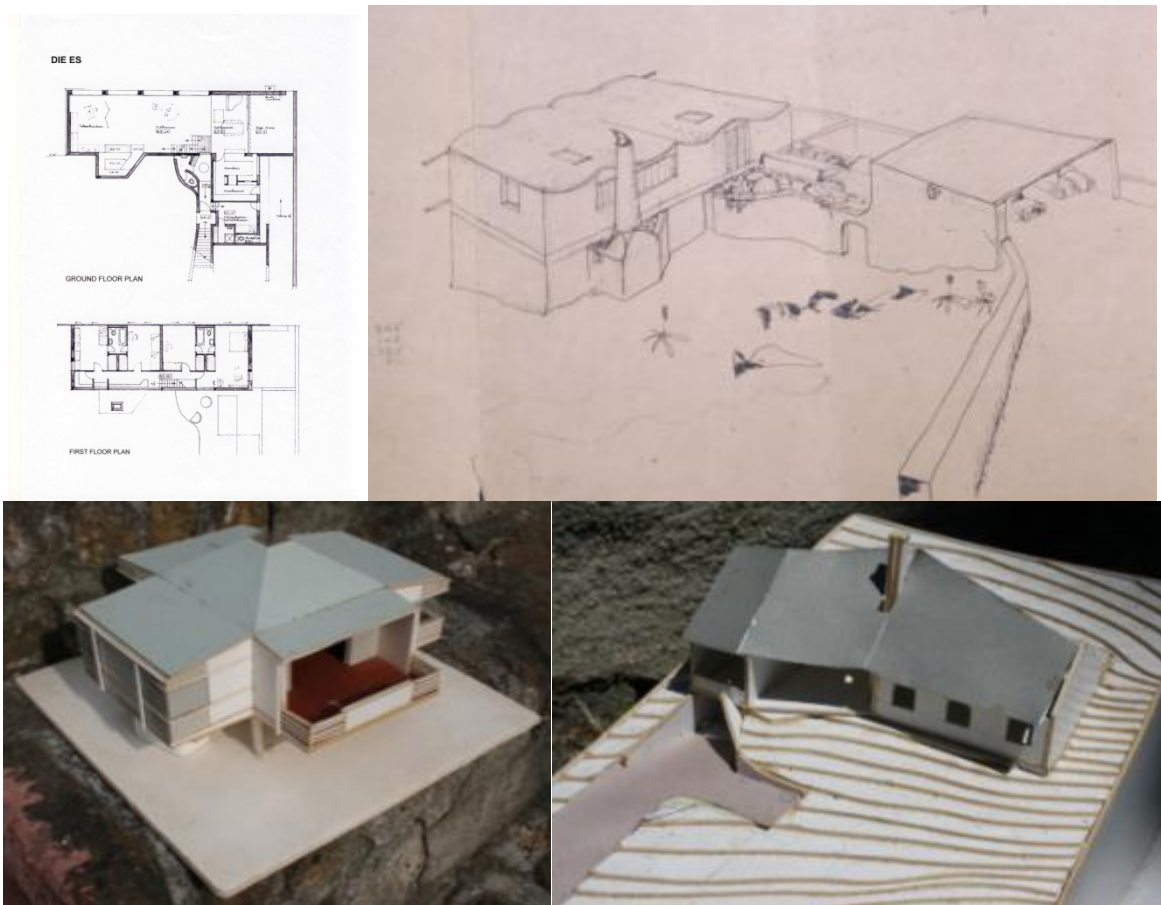
House Beyers (1998) is proportioned on a 1130mm bi-gridded system. An initial 3'10" (1168mm) grid was reduced to 3'8½" (1130mm) (See Fig. 8.10). Fagan was questioned on the commonality with Le Corbusier's Modulor of 2260mm but he could not recall using the 'master' as precedent. Sketch drawings are then drawn to 1:200 or 1:100 scale and then reworked until Fagan is happy. He says (2008b) that he constantly refers back to the initial ideas during this phase. At this stage of the design process a tendency towards convergence appears. Elements and approaches used in other houses are sketched and evaluated.



**Figure 8.10.** House Beyers (1998): Initial sketch showing grid layout on the left and final sketch plan on the right (Fagan archive - Job No. 9813, undated).

#### 8.4.6. Action

Presentation drawings are very simple as Fagan does not put much emphasis on the drawing itself as he asserts that "the final test is in the building" (Fagan, 2009b). Earlier schemes were drawn by Fagan himself and often contain a three-dimensional perspective drawing showing the approach to the house (See Fig. 8.11). Later, when more staff was available, Fagan handed over sketch plan production, with presentations containing only simply drawn outline plans, sections and elevations. A 'working' model was often included. That of House Beyers (1998) was constructed to 1:50 scale and is quite detailed (See Fig. 8.11). Others like House Fagan in McGregor (2005) are at 1:200 scale with elevations cut from paper and applied to cardboard (See Fig. 8.11).



**Figure 8.11.** **Top left:** Fagan's sketch plan for Die Es (1965) (Fagan archive - Job No. 656, undated). **Top right:** Bird's eye view of Die Es (1965) (Fagan archive - Job No. 656, undated). **Bottom left:** 1:50 cardboard model of House Beyers (1998) (Fagan archive - Job No. 9813, undated). **Bottom right:** 1:200 cardboard model of House Fagan at McGregor (2005) (Fagan archive - Job No. 0507, undated).

#### 8.5. HOUSE SWANEPOEL, CAPE ST. FRANCIS (1980)

Fagan's design for a holiday home (See Fig. 8.12) for Montu and Ian (Swanie) Swanepoel and their family in Cape St. Francis in 1980 received a South African Institute of Architects Merit Award in

1983. The citation (Anon, 1983: 38-39) reads as follows:

House Swanepoel at Cape St Francis, designed by Gabriël Fagan, has been selected for the 1983 Institute of Architects' Award of Merit.

This is a highly original example of regional architecture and is a sophisticated synthesis of the traditional and the contemporary.

The building is superbly related to its site and every nuance of sea and dune and beach is used to advantage. The floor levels, roof profile and planning system all take up cues from their surroundings in a most subtle way. Thus the building form appears to be moulded-by the same rules as the land form.

With its great roof, dominance of wall over opening and a low slung profile reminiscent of fishermans' (sic) cottages. The house refers directly to its Cape historical context. This underlay is given a range of new dimensions by shifting wall planes, opening the roof and cascading the floor level, all resulting in a fluid twentieth century spatial system which imbues an old format with a new rhythm. The shaping of its building elements into a complex three dimensional whole, is achieved with flair and finesse.

In planning terms, the establishment of the building's heart at the lowest part of the site, is finely judged. It gives, in combination with the chimney, a spatial dominance to the living rooms which is perceptible both internally and externally. From this core three "wings" of accommodation lead off, making it both the meeting place of the house and the creator of privacies between its three parts.

The elements and details of the building reinforce the central concept. The swept up shapes of the thatch convey strong impressions of wave and bird and wind shaped organic forms. Windows and doors (again reminiscent of the Cape tradition) sensitively integrated into wall areas and roof planes, set up spatial continuities. The materials of floors, walls, roof and ceilings, are handled with elegance and simplicity. Despite the strong colours used, a subtly related overall harmony is achieved and the colours produce an effect of joyousness appropriate to a leisurely seaside home.

There is a consistency throughout its detailing of care and craftsmanship with each part carrying the sense of its making and each apparently pleasurable to use.

In all, the building possesses a sense of rightness and effortless which marks it as a work of the highest calibre.



**Figure 8.12.** Sea facing elevation of House Swanepoel at Cape St. Francis (1980) (Author, 2005).

This author interviewed Fagan and his wife on 30 April 2008 with the express goal of ascertaining how the Swanepoel house was designed. The author had discovered the most complete set of design sketches<sup>229</sup> for any of Fagan's houses and these were shown to the couple and questions posed. At the time of the interview almost thirty years had elapsed since the house was commissioned and it was difficult for Fagan to remember how the design had come about. It did become evident through the discussion that the design had slowly evolved through a rigorous investigation of both site and program and that the client brief had driven the overall organization of the plan. The form was derived from an attenuated plan and the aesthetic guideline restrictions imposed by the steeply pitched roof. The design generators closely mirror the description by Frank Lloyd Wright, quoted by Fagan (1969:5):

"This building is an example of the inspiration of a site, the co-operation of an intelligent, appreciative client and the use of entirely masonry materials."

### **8.5.1. Initiation**

#### **8.5.1.1. The clients and their requirements**

The Swanepoels are related to Fagan through marriage. Montu<sup>230</sup> was Fagan's younger brother Hannes's sister-in-law. Mr. Jan Swanepoel (Swanie) was originally a hotel owner in Bloemfontein and Fagan had designed the first drive-in bottle store in South Africa as well as the Cecil Hotel in Newlands for him, this being one of Fagan's first jobs when he arrived in Cape Town after the death of his father in the early 1960s. Fagan later designed a holiday house for the same couple in

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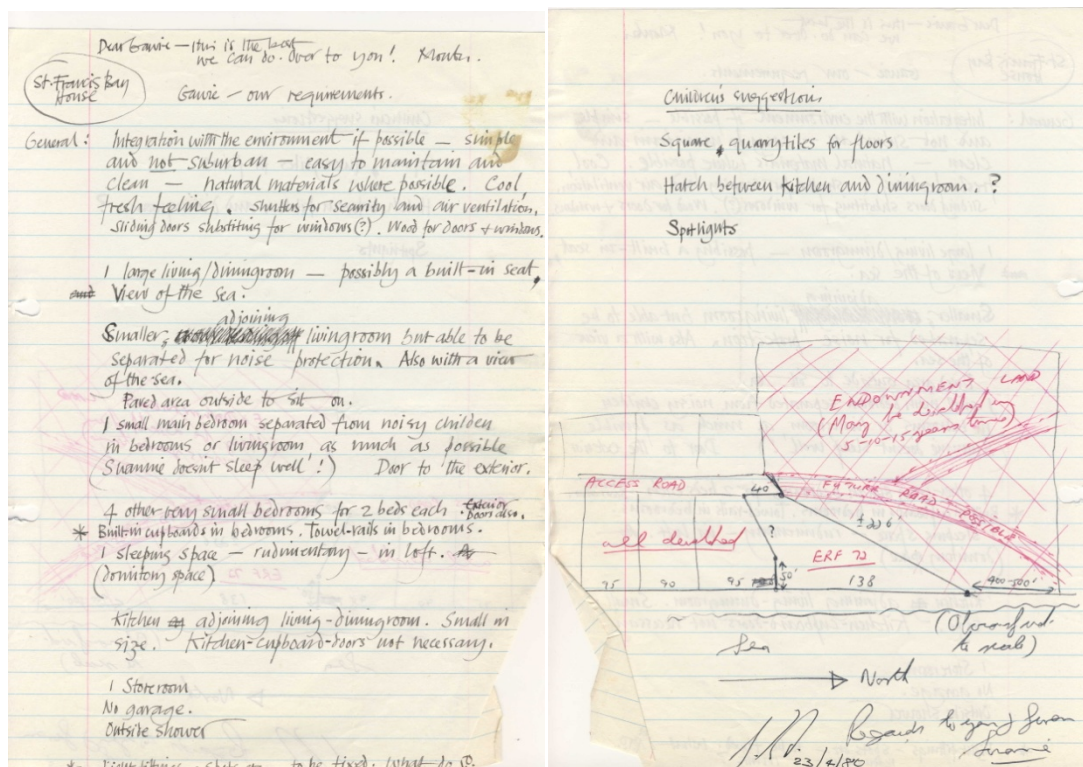
– <sup>229</sup> Although many of the sketches are numbered, few are dated and there are leaps between some sketches, so it can be assumed that Fagan selected important ones to keep and then numbered these.

– <sup>230</sup> She died in 2007. Her husband is currently suffering from Alzheimer's disease and lives in a seminal Naudé Santos house in Rowan Lane, Kenilworth, Cape Town. Clearly an appreciation of good architecture runs deep and has resulted in a son, Pierre, training as an architect.

Hermanus in 1990 and an extension to an old Observatory house<sup>231</sup> for their daughter Lisa in 1989. Montu was an artist described by Gwen Fagan as a very appreciative person who needed to be convinced of every design decision. But she was also sensitive and creative and could thus be easily communicated with in design terms (Fagan, 2008d). The project was initiated in 1980 through a telephone conversation and follow-up letter from Montu, dated 23 April 1980.

### 8.5.1.2. The brief

A hand-written letter gives a clear outline of the functional requirements, a limited description of the contextual responses they required and the ambience the clients were looking for (See Fig. 8.13). The house had to be integrated with its environment and had to be simple and not suburban, while a cool, fresh feeling had to be created. All living and bedroom areas had to have a view of the sea. Specific mention is made of connection to the outside from the five bedrooms and the necessity for clear separation between parents' and children's bedrooms due to Swanie's sleeping problems. A private living area for the parents was also required. Fagan's follow up letter demonstrates his organized approach to design: first a meeting with the client and then a preference for their written requirements, followed by a site visit.



**Figure 8.13.** Client requirements on two A4 pages as drafted by Montu for House Swanepoel at Cape St. Francis (1980) (Fagan archive - Job No. 8011, undated).

— <sup>231</sup> Interestingly enough, the clients had met Hans Hallen while resident in Durban and had asked him to also do a proposal for this alteration.

### 8.5.1.3. Context

The site sits directly on the beachfront at the northernmost end of the initial St. Francis Bay development in Cape St. Francis (See Fig. 8.14). To the south, existing suburban houses dominate the dunes while a green open space to the north provides relief. The most prominent features of the site are its almost triangular shape, a sloping dune and the sea view to the east. A Sunday Times article of 30 October 1983 (Malherbe, 1983) reports that the design of the house had to subscribe to the very stringent aesthetic guidelines laid down by the developers of St. Francis Bay. These included thatched or black-tiled pitched roofs sloping between forty-five and sixty degrees, limitations on the size of dormer windows, and a limited black and white colour palette.



**Figure 8.14.** Left: Google earth image of House Swanepoel at Cape St. Francis (1980) (www.google earth [Accessed 1/09/2011 20:46]). Right: View of house Swanepoel from the sea (Fagan archive - Job No. 8011, undated).

### 8.5.2. Preparation

According to a letter forwarded to the client and dated 24 April 1990, Fagan indicates that he will make a site visit on Sunday the 3rd of May and a visit to the Divisional Council on the 4th. A set of four pages of undated notes were made by Fagan (See Fig. 8.15), seemingly following the Divisional Council visit, and these outline salient points regarding setback lines and wall and roof materials. Fagan wrote that brick, stone or concrete walls and thatch or tiled roofs are permissible. His summation about outbuildings such as garages not being permissible no doubt led to the lack of garages or carports in the final scheme. Fagan also wrote that dormers are permissible but that their extent must be limited.

A clear written climatic analysis follows and Fagan indicates that the south-west wind is particularly irritating. Fagan also lists the names, addresses and some pertinent comments about local builders.

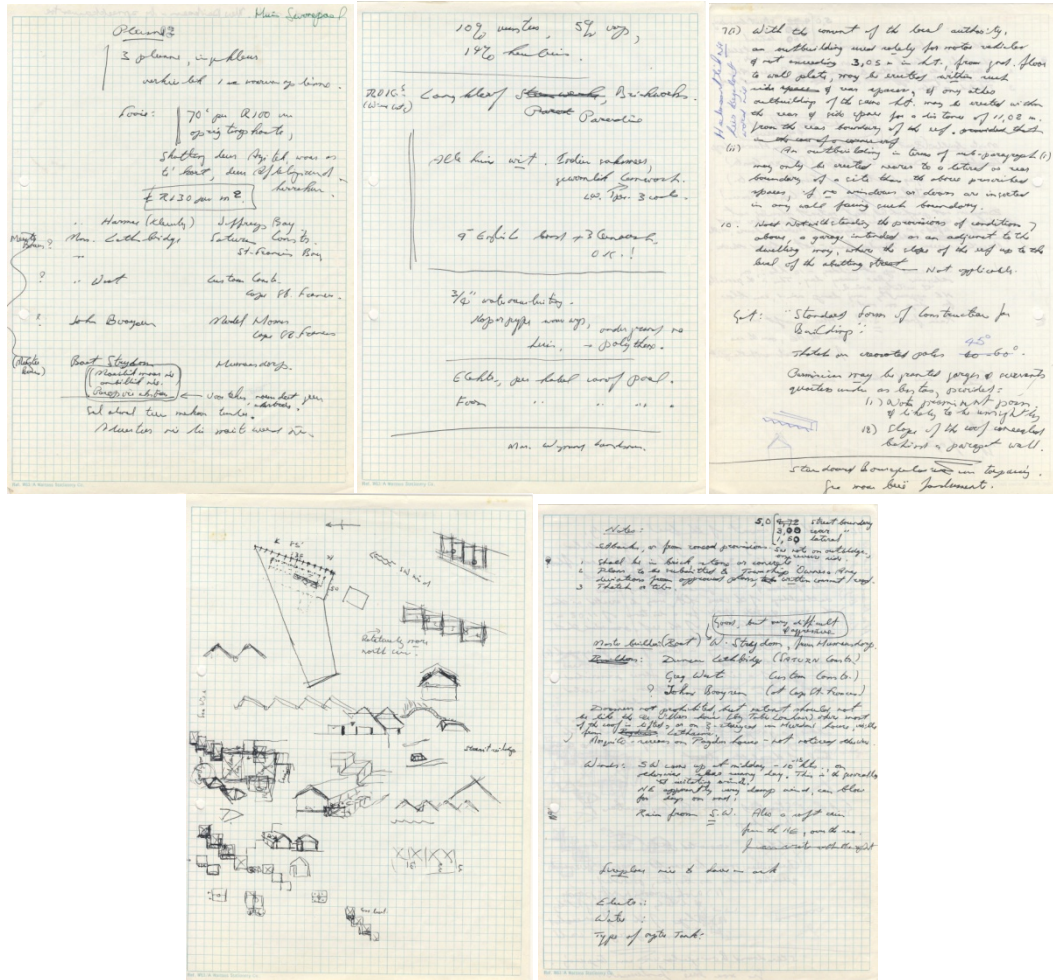


Figure 8.15. Fagan's notes on grid line A4 paper (Fagan archive - Job No. 8011, undated).

It is interesting to note that at this point no sketches are made together with the text. The fourth page of the set contains sketches only and although undated the supposition can be made that they were completed shortly after the visit to the site and perhaps even while still in Cape St. Francis. They demonstrate convergence in design thinking through the exploration of a linear form<sup>232</sup> and stepped bedrooms, as had been done in House Raynham (1967). This was, however, the first single house that Fagan had designed in ten years, following House Levin in Langebaan in 1970, although Fagan had designed a series of stepped and barrel vaulted housing units for farm workers in Stellenbosch in 1975.

The initial sketches show stepped bedrooms to the northern end of the property and the outline of a wing to the south-west corner where more site space was available. These sketches demonstrate the synergy of planning bulk and site space but are organizational rather than architectural or spatial. A small hint at roof exploration can be seen in the sketch showing imitative 'wolfneus'<sup>233</sup> dormers.

– <sup>232</sup> An aerial photograph reveals the extent of the attenuation of the plan when compared to other houses in the area.

– <sup>233</sup> This was a feature of traditional Cape vernacular houses, the dormer usually being placed over the front door. The English translation means wolf's nose.

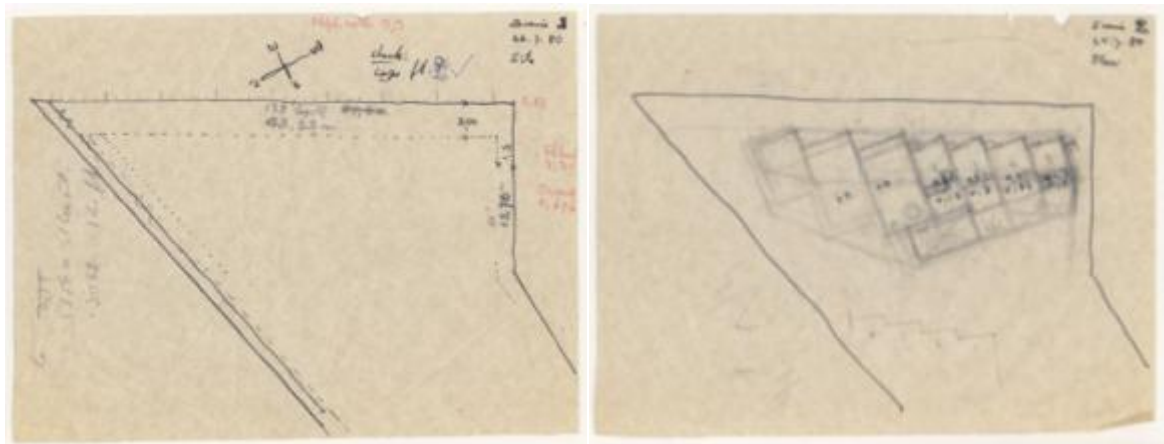


### 8.5.3. Incubation

The first dated sketch that outlines accurate plan dimensions and the beginnings of a scheme made on 25 July 1980, three months after the initiation of the project. A list of office projects in 1980 indicates that a total of seventeen other projects were on the go and about ten continuing from the previous year. Work at The Castle was still ongoing and so a lag time of three months was, in the prevailing context, not a prolonged period.

### 8.5.4. Synthesis

The first sparsely drawn site plan of 25 July 1980 (See Fig. 8.16) indicates the direction of north, the high water mark, site boundaries, setbacks and a grid drawn on the sea facing edge of the property. No climatic features are indicated and no contours are drawn. The prominent dune is also not indicated. This demonstrates Fagan's absorption of site and program knowledge during the preparation stage. This drawing was made on burnf and probably served as a base for the explorations that followed – possibly rare evidence of a layered approach not seen in other projects. The next few sketches (marked 1 to 5) are explorative plans with no three-dimensional exploration.

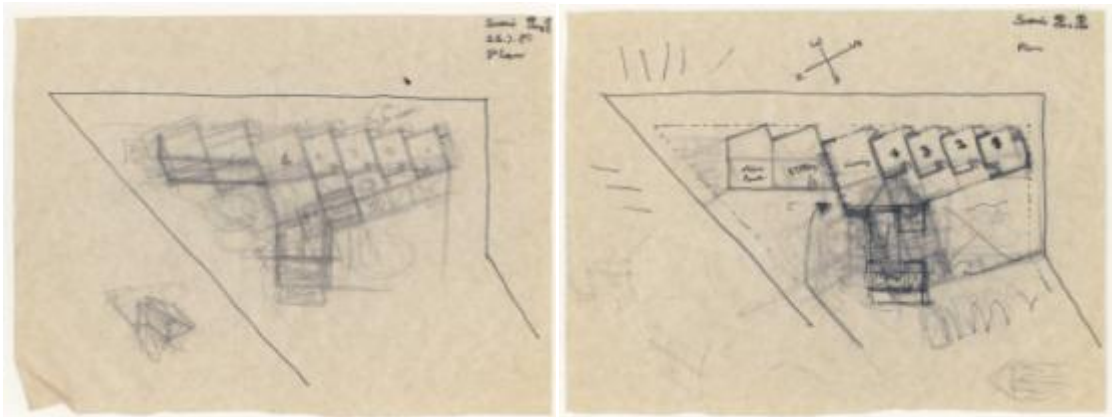


**Figure 8.16.** Left: Fagan's site study (Fagan archive - Job No. 8011, 25/07/1980). Right: First plan exploration (Fagan archive - Job No. 8011, 25/07/1980).

Sketch 1 (See Fig. 8.16) lays the foundation for subsequent design decisions. The attenuated organization of the first proposal is maintained so that the view requirement is satisfied. But two further decisions are made. Firstly, the relocation of the bedrooms to the southern edge of the property and secondly, a proposal to keep the ridge line level, implying that rooms will need to step inwards and also rise in floor level. Fagan explains (2008d) that the pitched roof was the main determinant of many of the design decisions. He further notes that the steepness of the required roof pitch creates a large roof profile as the roof ends up half as high as the plan is wide. Fagan

prefers to use a lesser pitch than forty-five degrees which to him "looks awkward"<sup>234</sup> (Fagan, 2008d). The bi-nuclear plan, which resolves the requirement for quiet spaces for the parents away from the children, is now also evident. The awkward angle of the stepped bedrooms seems to be generated from a due east orientation. Fagan explains (2008d) that these steps were purposefully created to provide partly concealed spaces. A tenuously linked carport attempts to define entry.

The next two pencil sketches (also dated 25 July 1980) slowly develop the possibilities of the stepped plan, indicating levels required to achieve the desired ridge line. The carport has now been removed. The second of the two sketches (numbered 2.1) (See Fig. 8.17) illustrates another major design leap with the addition of a central wing perpendicular to the sea-facing boundary. It defines two spaces: making the site more useful, guiding entry to the front door from the awkward dog-legged site, and providing a space protected from the south-west wind. Fagan remarks (2008d) that one form would have been very bland with an indeterminate space beyond it. He explains that the wing makes the site much more useful by creating separate private and approach areas. The difference between these two spaces is not clearly defined on the sketch and it seems as if entry was originally to be from the northern court. The addition of the wing also anchors the house more directly to its long edge. The rigidity of the stepped plan is tempered by the contrasting geometries, with some subtle manipulations occurring at the northernmost end. A small sketch shows an exploration of roof connections and Fagan purposefully reduces the width of the wing to allow its roof to be less dominant than that of the sea facing wing.

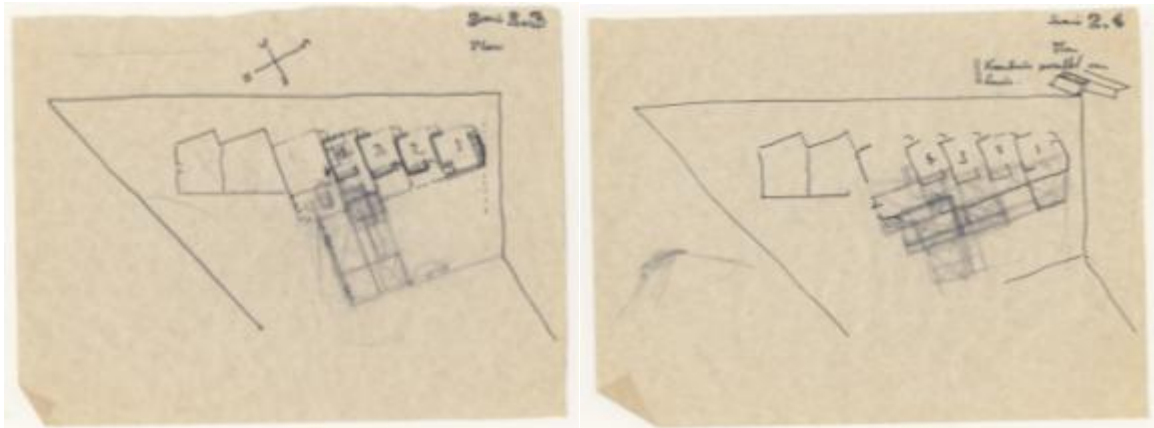


**Figure 8.17.** Left: Fagan's site study (Fagan archive - Job No. 8011, 25/07/1980). Right: Exploration of wing orientation (Fagan archive - Job No. 8011, undated).

Sketches numbered 2.2 (See Fig. 8.17) and 2.3 (see Fig. 8.18) depict a firming up of underlying pencil explorations. Sketch 2.2 shows a northern entry more clearly defined, while a southern courtyard is created with a wall against which cars can park. The 'irritating' south-westerly wind is also drawn and indicates the necessity for the northern courtyard definition. Sketch 2.3 (See Fig. 8.18) changes the geometry of the entry wing to align with those of the stepped bedrooms. Sketch 2.4 (See Fig. 8.18) indicates a change in orientation of the kitchen, making it parallel with the bedrooms and

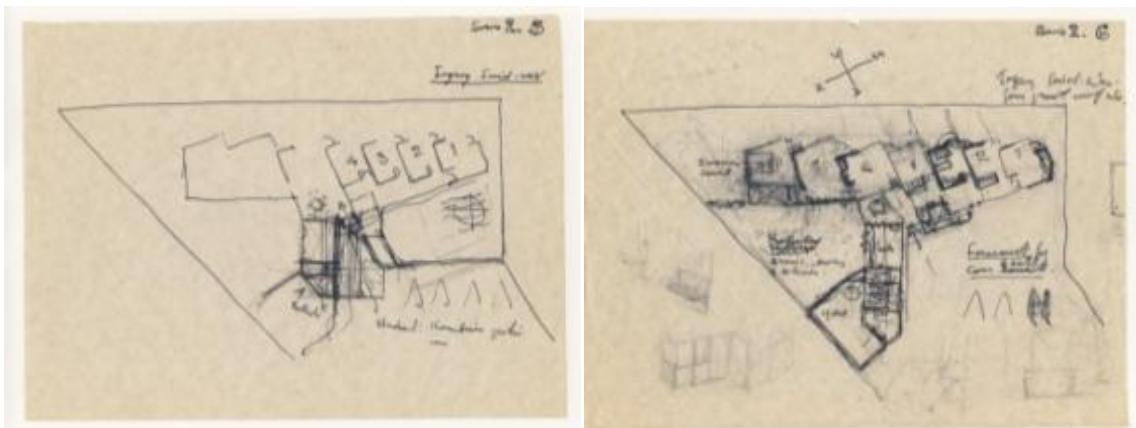
— <sup>234</sup> The drawings, however, show the pitch at 45 degrees as the aesthetic guidelines for the area stipulated.

consequently shortening the length of the wing.



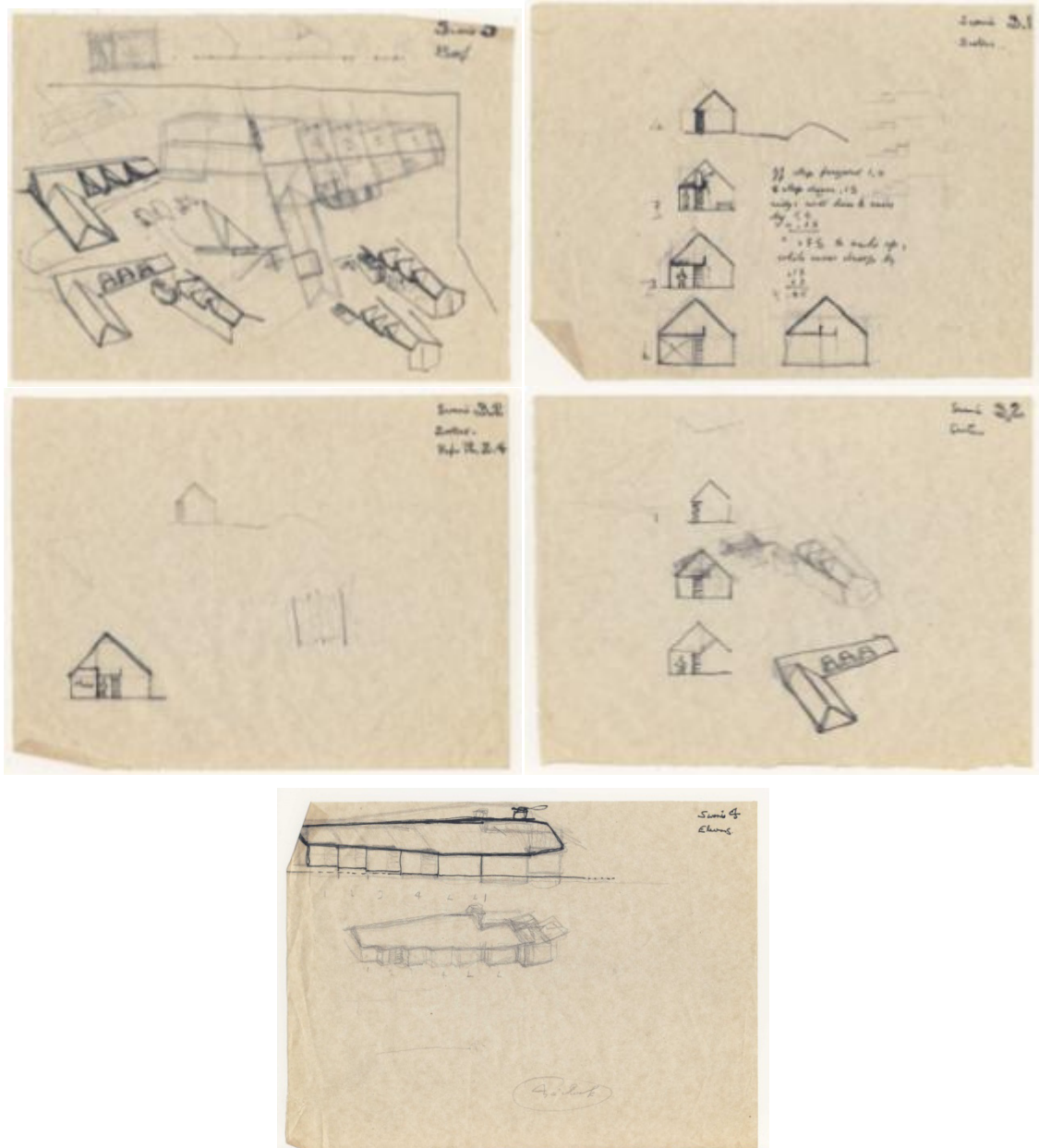
**Figure 8.18.** Left: Shift in orientation of kitchen wing (Fagan archive - Job No. 8011, undated). Right: Exploration of services to more closely align with bedroom wing (Fagan archive - Job No. 8011, 25/07/1980).

Sketch 2.5 (See Fig. 8.19) finalises the entry by shifting it to the south-west corner of the site. The extension of the yard wall assists with the definition of the entry space. Sketch 2.6 (See Fig. 8.19) firms up decisions regarding entry and private courtyards, with the addition of a kitchen yard wall and the removal of the southern area's walls, creating a forecourt for cars. There is also a preliminary exploration of the open corner treatment to the bedrooms.



**Figure 8.19.** Left: Entry shifted to south-west corner (Fagan archive - Job No. 8011, undated). Right: Courtyard definition (Fagan archive - Job No. 8011, undated).

Sketch 3 (See Fig. 8.20) initiates an exploration of dormer windows and the decision seems to have been made quite quickly that the roof should be peeled back rather than having insertions placed into it. Sketches 3.1, 3.2 (twice) (See Fig. 8.20) depict a series of sections that outline the consequences of changing the room width in relation to the ridge height and show Fagan's accurate calculations of the implications of each decision. Sketch 4 (See Fig. 8.20) shows a proposal for a sea facing elevation and a bird's eye view. Ridge and fascia lines are explored as continuous elements. The last sketch in this series provides a detail exploration of the service wing layout.



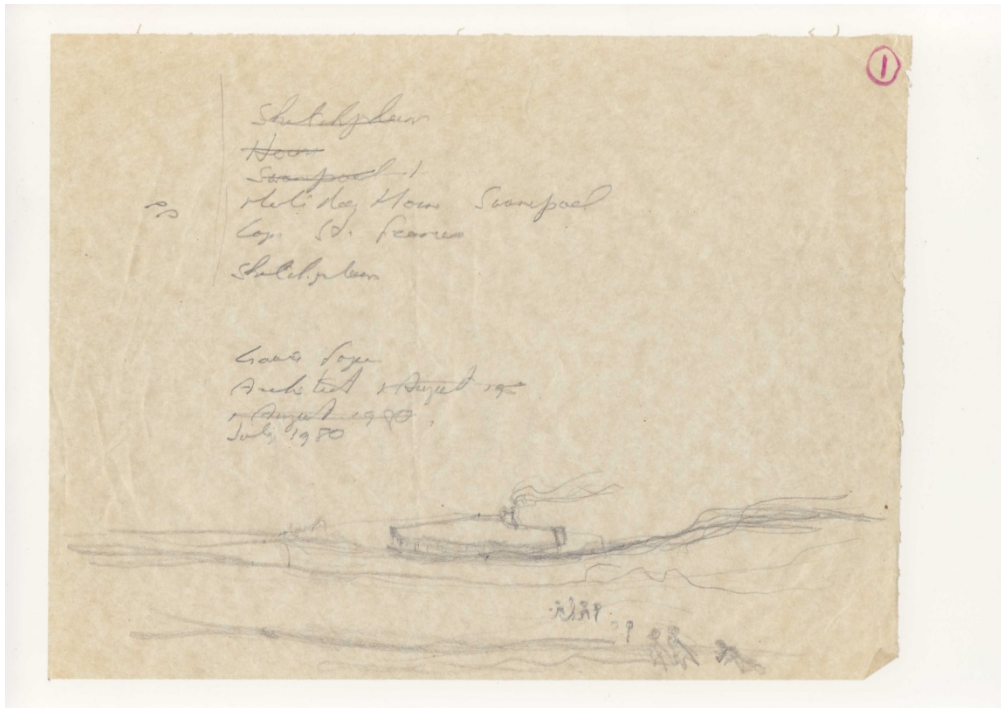
**Figure 8.20.** **Top left:** Exploration of dormers (Fagan archive - Job No. 8011, undated). **Top right:** Sections that explore relationship between changing building width and roof height (Fagan archive - Job No. 8011, undated). **Middle left:** Similar section exploration (Fagan archive - Job No. 8011, undated). **Middle right:** Sections and dormer exploration (Fagan archive - Job No. 8011, undated). **Bottom middle:** Roof sketches (Fagan archive - Job No. 8011, undated).

### 8.5.5. Evaluation

The next set of sketches, also executed on bumf, is numbered from 1 to 10 and Fagan says that these were drawn to explain the design to the client. These are wonderfully evocative drawings as they not only explain the design but also the thinking of the architect. They are a rare example of the concretisation of the design process which is, for Fagan, a largely cerebral one.

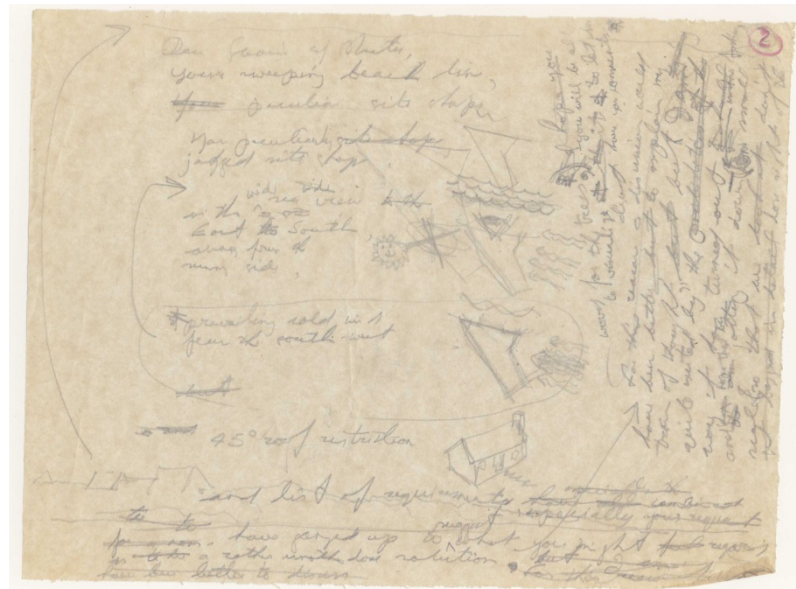
Sketch 1 (See Fig. 8.21) depicts the approach to the house from the sea, Fagan using the analogy of a hammock. The beach at Cape St. Francis is very deep at low tide and the view of the house from the sea is still today as it was in 1980. The roof edge closely follows the slope of the dune, and no doubt the ground slope behind the dune determined the raised levels of the bedrooms and the tapering form to achieve a relatively level ridge line.

My design for a holiday house at St Francis Bay was required by regulation to conform to its neighbours in terms of wall finish, roof pitch, and roof materials. But I hope that I achieved something Intangible even beyond that, in moulding the roof contours and floor levels so that the house would look as though slung comfortably like a hammock following the shape of the dunes (Fagan, 1983c: 50).



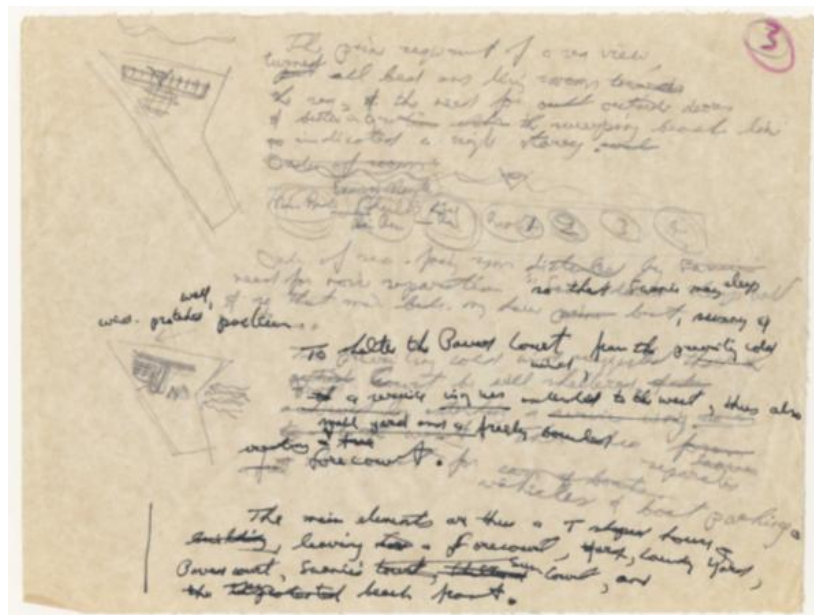
**Figure 8.21.** Depiction of conceptual idea of house strung as a hammock between the dune as viewed from the sea (Fagan archive - Job No. 8011, July 1980).

Sketch 2 (See Fig. 8.22) outlines the main design generators. Fagan describes the strangely shaped site as jagged. His contextual sketch indicates the sweeping sea views to the south and east (which explain the stepped bedroom orientations). He draws the climatic effects of a 'happy sun' to the north and the cold south-westerly wind and then details the restrictions of the pitched roof. The order of these sketches is important as it illustrates the dominance of context in design decision making. Copious notes are rewritten and re-evaluated just as design decisions are. Fagan apologises for keeping the sketches at a small scale, explaining that this prevents one "getting bogged down by detail" or not being able to "see the wood for the trees". This approach reinforces the thumbnail sketch technique that Fagan was taught as a student.



**Figure 8.22.** Sketch explaining main design generators (Fagan archive - Job No. 8011, undated).

Sketch 3 (See Fig. 8.23) explains that the requirements for bedrooms and living spaces to face the sea have resulted in a low-scale and attenuated building. Fagan describes that the request for private quarters for the parents and a sunny protected space resulted in its northerly location. Fagan designates the main elements of the house as the T-shape and the series of external spaces such as the sunny court for Swanie, the beach front area, the paved court, the laundry yard and the freely bounded forecourt.



**Figure 8.23.** Sketches and descriptions of functional layout and definition of external spaces (Fagan archive - Job No. 8011, undated).

Sketch 4 (See Fig. 8.24) concentrates on the articulation of the bedroom spaces. Fagan justifies its staggered nature by drawing its "bleak" straight counterpart and then extols the advantages of

privacy and extended sea views achieved by the stepped arrangement. He further explains the use of the roof volume over part of the bedrooms and the adjoining passage where a low ceiling is not required. North and west facing dormers (that are generated by "twisting the eaves line") allow sunlight to penetrate at a high level to reach those spaces that cannot receive direct northern sun.

The simple distant statement becomes more complex on closer acquaintance, and the ultimate bedroom spaces although small, offer many possibilities of opening or partly shutting the sea view, and each have small storage cum extra sleeping lofts that are lit by small triangular roof windows (Fagan, 1983c:9).



**Figure 8.24.** Articulation of bedroom spaces (Fagan archive - Job No. 8011, undated).

Sketch 5 (See Fig. 8.25) explains the "hammock" analogy and the organization of spaces in width and height to accommodate the roof profile that acts like a "whale's back" in its slightly arching nature. Here the first mention is made of the double banked chimney which did not appear in any of the initial sketches. Fagan uses the same principles as those of the roof build-up in House Raynham (1967) to create a focus of attention at entry and over the central living space. The hearth of the home is accentuated in a Frank Lloyd Wrightian manner. An important sketch shows the definition of bedroom spaces as partly enclosed and independent cells. Fagan has noted (2008d) that his concern for the sandy ground conditions led to a decision to separate walls to allow them to move independently of each other.

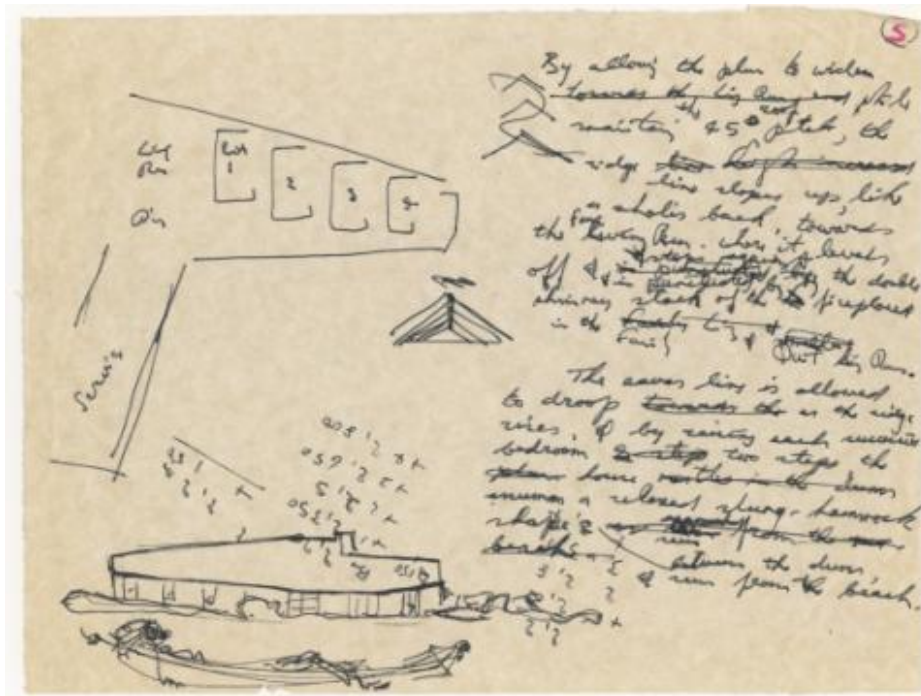


Figure 8.25. Explanation of hammock analogy and relationship of building width to roof height (Fagan archive - Job No. 8011, undated).

Sketch 6 (See Fig. 8.26) describes the 'service wing' and a layered approach to functional organization. The kitchen opens to both the dining room and northern courtyard, while being separated from the maid's room by a store room and passageway that contains a stair to the loft above.

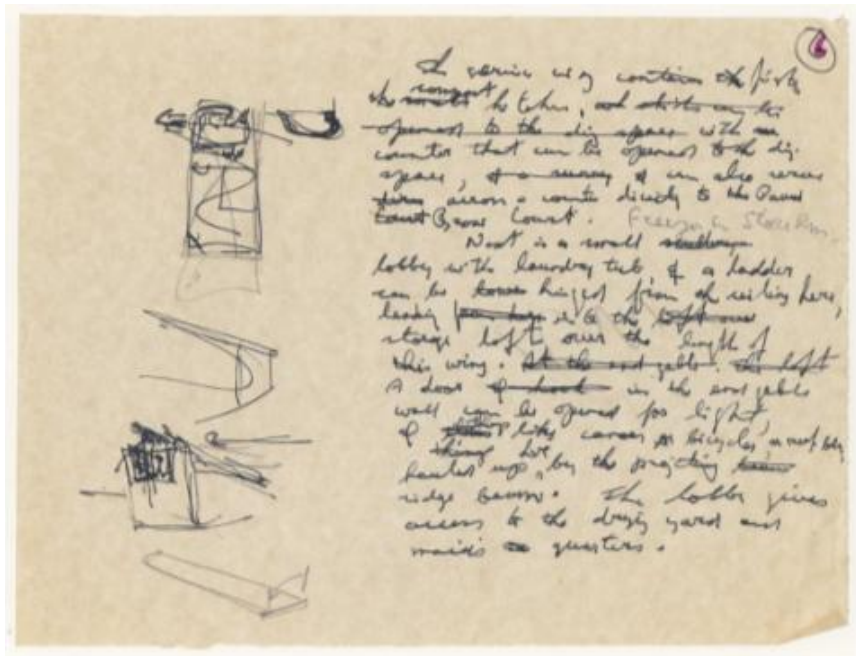
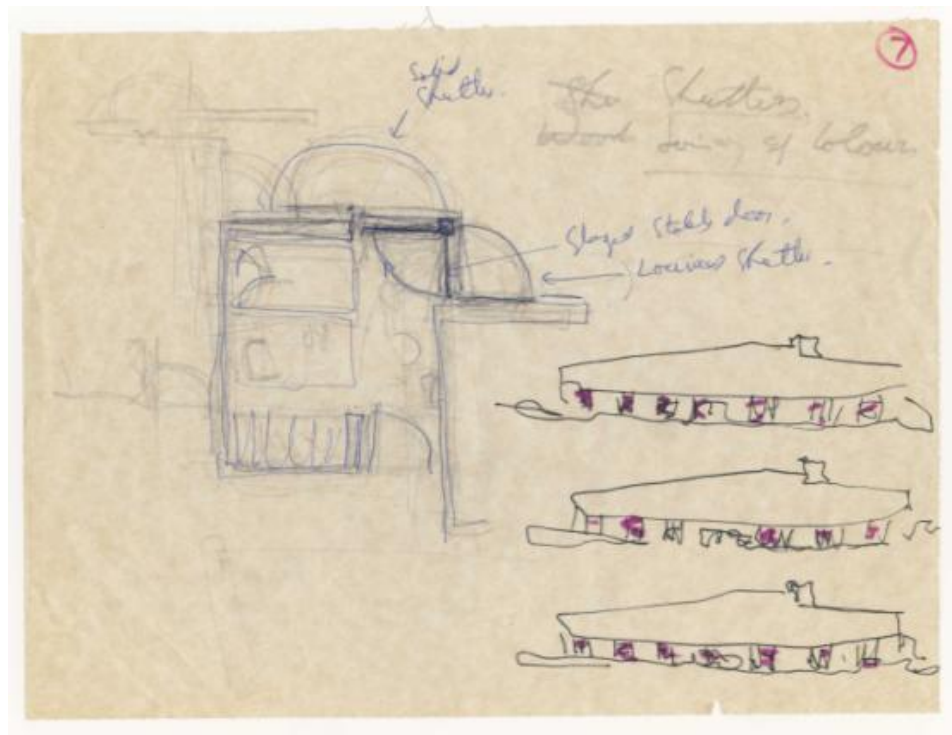


Figure 8.26. Description of 'service wing' (Fagan archive - Job No. 8011, undated).



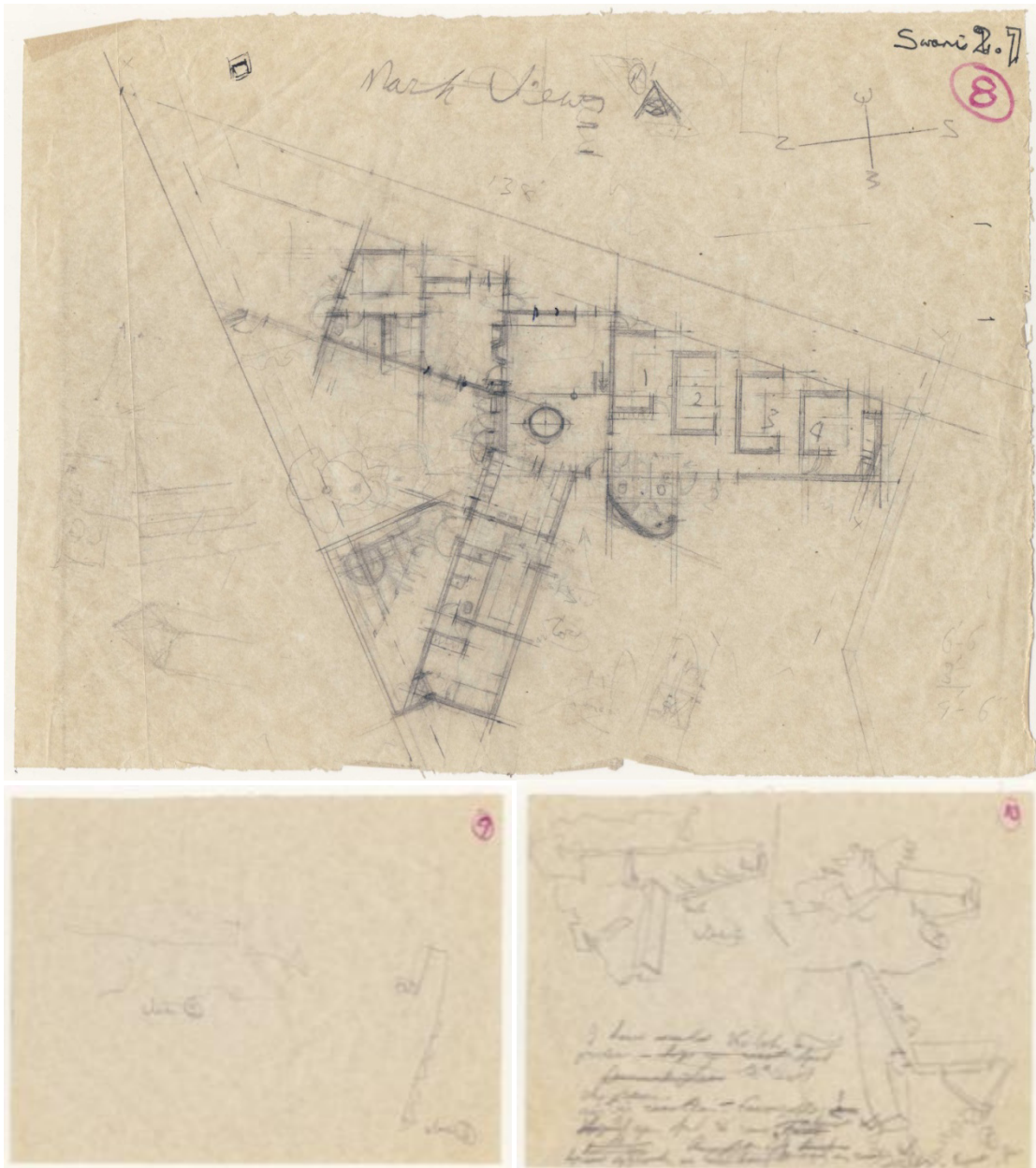
Sketch 7 (See Fig. 8.27) shows the development of the bedroom plan with its clear circulation route and sleeping spaces. Fagan also investigates the location, orientation and possible colour distinction in doors and shutters that the clients requested for security.



**Figure 8.27.** Bedroom plan exploration and colour study (Fagan archive - Job No. 8011, undated).

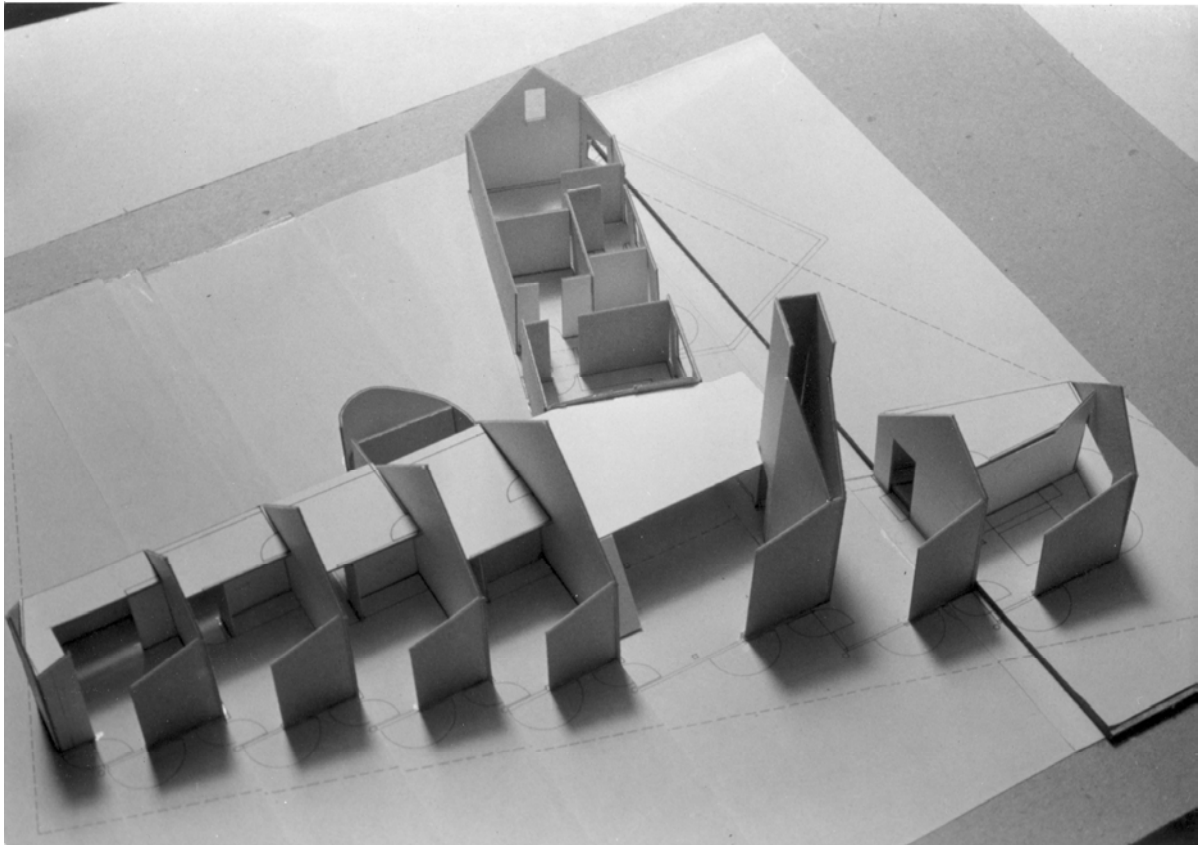
### 8.5.6. Action

Sketch 8 (See Fig. 8.28) represents the final plan development. A pencil drawing on bumf to 1:200 scale illustrates an alteration to the orientation of the service wing which opens up the entry route. The definition of the southern entry is also improved by the addition of a courtyard to the main bathroom areas. Sketches 9 and 10 (See Fig. 8.28) depict the beginnings of a three-dimensional exploration of building form from a bird's eye perspective. The sketches seem to be based on a photograph of a model as there is great consistency between the drawings. Fagan explains to the clients that he has already leaked a preview of the design to his younger brother's wife Sheilagh, and that if they (the clients) are happy with the current approach, he will go ahead with resolving the detail.



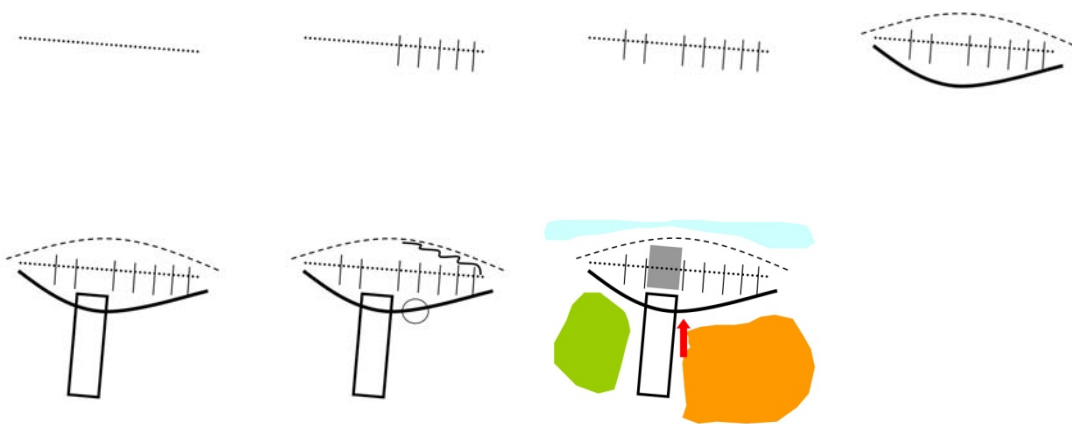
**Figure 8.28. Top left:** Final plan development (Fagan archive - Job No. 8011, undated). **Bottom left and right:** Three dimensional exploration of building form (Fagan archive - Job No. 8011, undated).

Fagan made two models during the design process. One is in clay and displays the plastic quality of the design. The other is a more tectonic exploration that articulates the wall structure (See Fig. 8.29). These models are undated and it is unclear at exactly what stage of the process they were made, but the tectonic model was presumably completed late in the process as it reflects the final undated sketch plan.



**Figure 8.29. Left:** Cardboard model depicting main walls as **structural and space defining elements**(Fagan archive - Job No. 8011, undated).

The final solution expresses many of the design principles that Fagan would use in future houses. Plasticity of expression, attenuated plan, staggered bedrooms, chimney as focus, roof drawn towards the hearth of the home and a limited architectural promenade beginning at the site boundary. The following diagrams (Fig. 8.30) attempt to synthesise the genesis and development of the design.



**Figure 8.30.** Diagrams illustrating the development of the design for House Swanepoel in Cape St. Francis (1980) starting with the attenuated form as a response to site and subsequent articulation to define spaces and edges (Author, 2009).

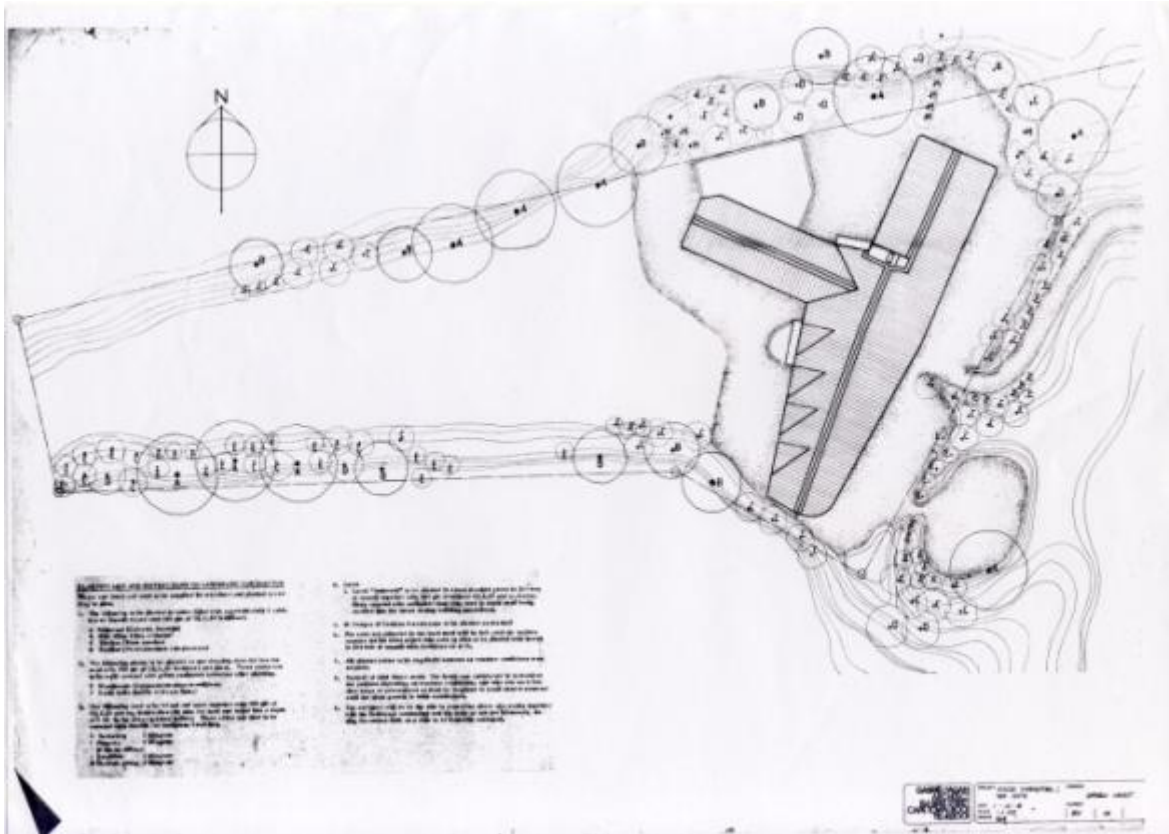


Figure 8.31. Site plan (Fagan archive - Job No. 8011, 1/12/1981).

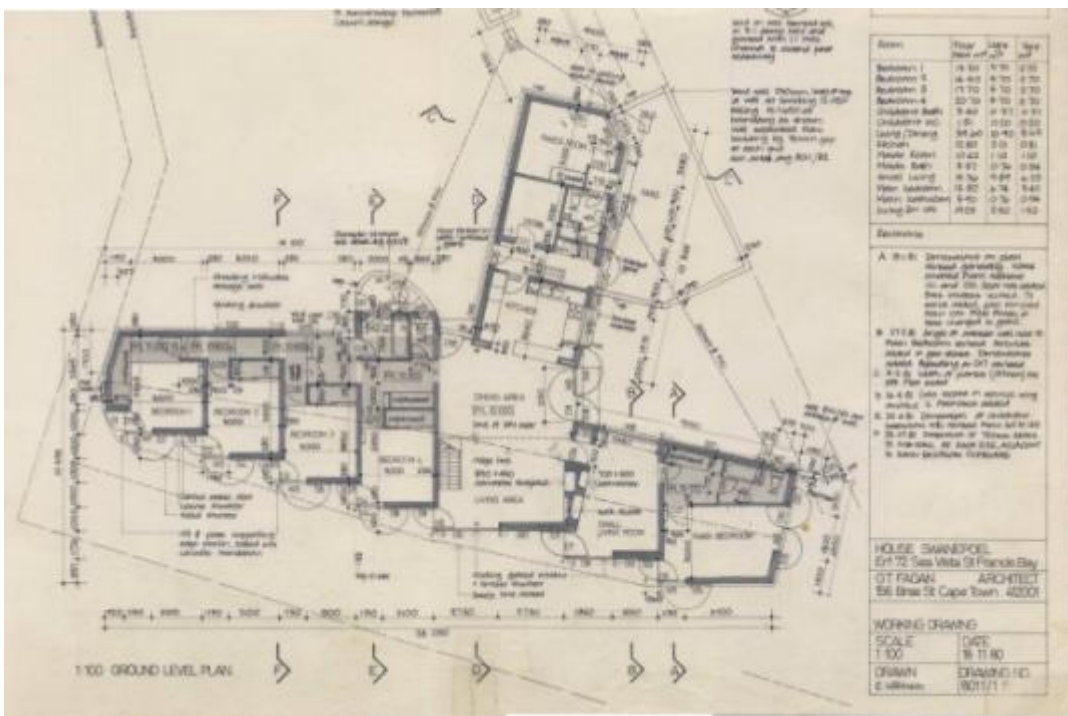


Figure 8.32. Part working drawing showing plan (Fagan archive - Job No. 8011, 18/11/1980).



Figure 8.33. Part working drawing showing elevations (Fagan archive - Job No. 8011, 18/11/1980).

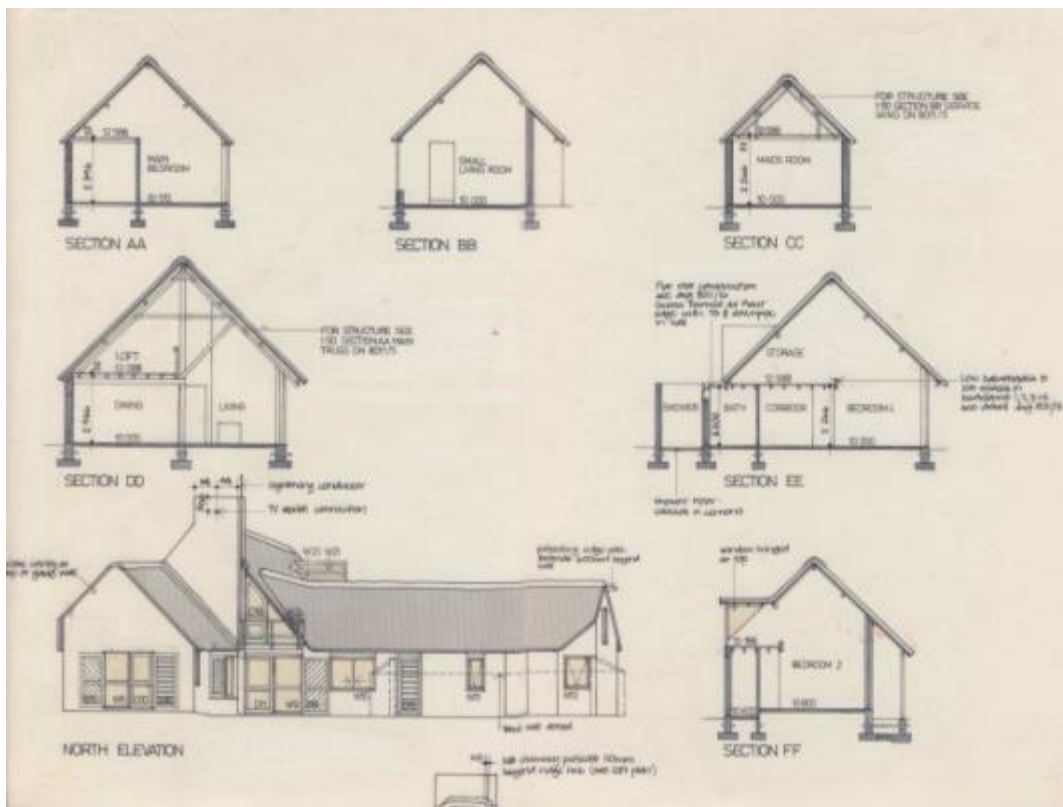


Figure 8.34. Part working drawing showing sections and north elevation (Fagan archive - Job No. 8011, 18/11/1980).

Working drawings were completed from around mid November 1980 to February 1981 (See Fig. 8.31-34 & 36-37). The roof structure and associated spatial quality is explored at great length (See Fig. 8.34) as are timber doors, windows and shutters which were all purpose made (See Fig. 8.37). Fagan remarks (2008d) that the twisted boarding to the doors is a tradition in the Cape which you can see at Groot Constantia. The tectonic quality of the plan is clearly articulated into structural and non-structural elements (See Fig. 8.35).



**Figure 8.35.** **Top left:** The Fagans picnicking alongside the partly constructed building. **Top right:** Walls constructed to roof height. **Bottom left:** Roof under construction viewed from site entry point. **Bottom right:** Roof under construction as viewed from sea edge (All Fagan archive job no. 8011, slide collection IC).

There is a clear separation between the main block and associated wing as well as the compartments of the bedroom areas. The voids are filled with lighter timber framed elements and the mediation between the stereotomic qualities of the traditional Cape wall and the tectonic qualities of the Modern Movement provide a unique architectural synergy. It is also the only Fagan example where timber columns are used externally to support a roof structure. The usual internal timber column is visible in the dining and bedroom spaces but the external gum pole support is a unique solution to the problem of ground support and aesthetic mediations.

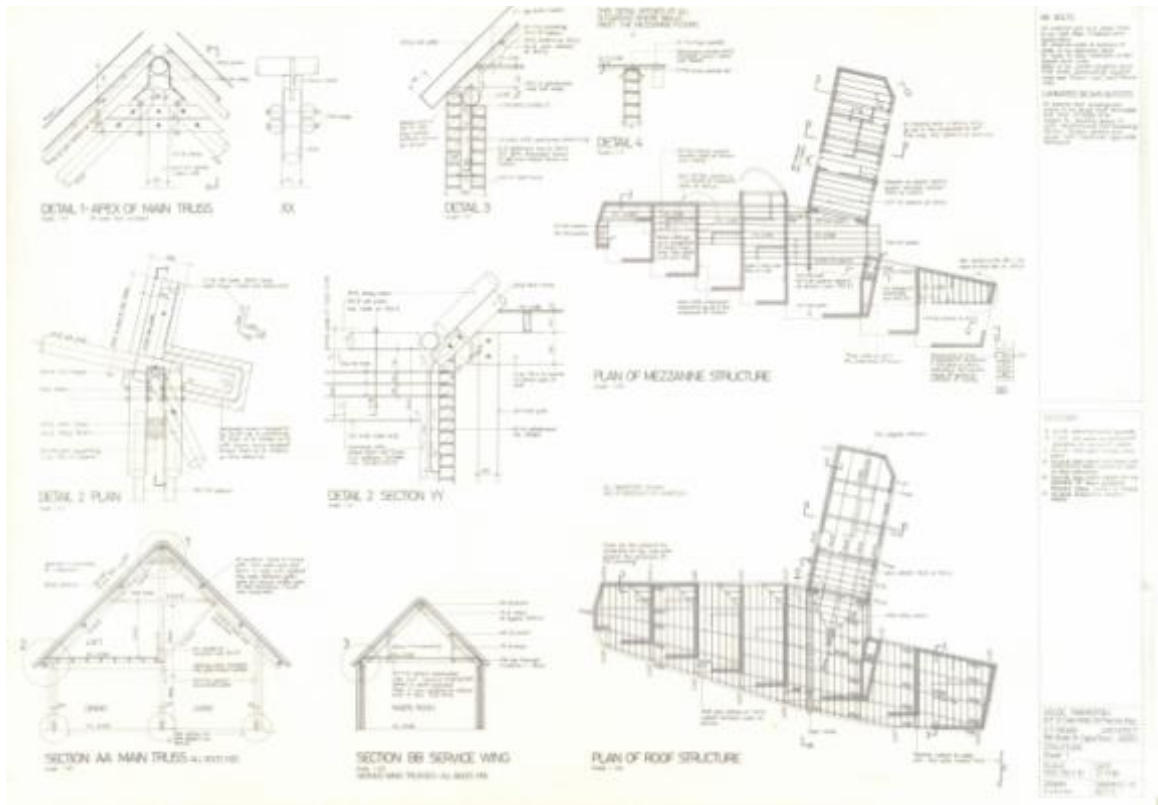


Figure 8.36. Part working drawing showing structure (Fagan archive - Job No. 8011, 27/11/1980).

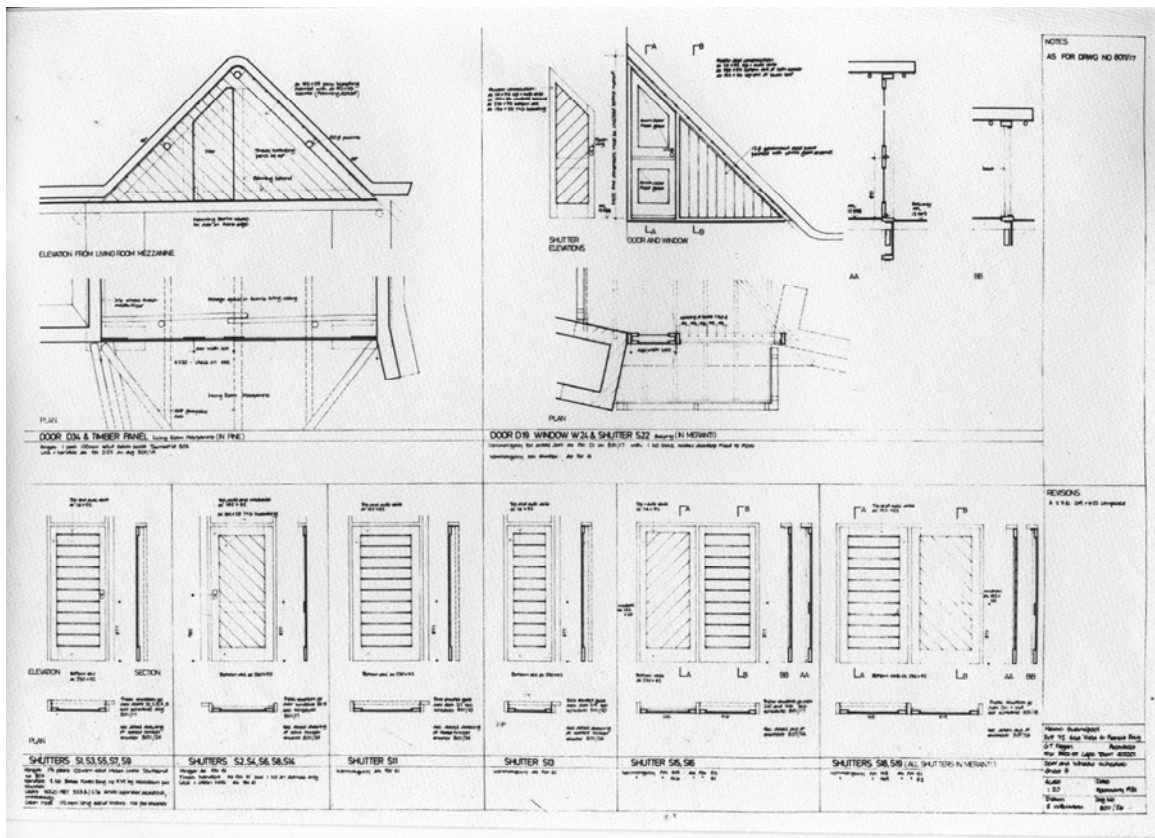


Figure 8.37. Door and dormer schedule (Fagan archive - Job No. 8011, February 1981).



**Figure 8.38.** Views of the house as built. **Top left:** View from sea. **Top middle:** View from north west to living areas. **Top right:** View to sea from under roof at bedrooms. **Second from top left:** View to the north. **Second from top right:** Facing south. **Second from bottom left:** View from dune. **Bottom:** Entrance court (All photographs courtesy of Pierre Swanepoel architect, 2012).





**Figure 8.39.** Views of the house as built. **Top left and middle and bottom left:** Main living area and kitchen with mezzanine loft over. **Top right:** Living area to main bedroom. **Bottom right:** Main bedroom (All photographs courtesy of Pierre Swanepoel architect, 2012).

## 8.6. Summary

Fagan's design process is a rational pursuit that is initially divergent with nuances of convergent thinking. Later design development processes become convergent through Fagan's use of tried and tested typological solutions. This method of working does not dilute the uniqueness of solution that is aptly suited to each site and program.

Fagan mediates 'external' and 'internal' design influences to deal with the exigencies of site and program, his education and life experiences. These include the influences of the Cape vernacular tradition, the mediated Modern Movement education at the University of Pretoria, the design of the Volkskas banks and years of conservation work.