



SETTING IN MOTION A BUYING
PROJECT OWN IS
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DiD

DÉCOR INTERIOR DESIGNER

**DESIGN
DEVELOPMENT**

A SELECTION OF OBJECTS ON
DISPLAY SHOULD SEE
THE WAREHOUSE AS AN EVENT
PLACE IN A GIVE-AND-TAKE



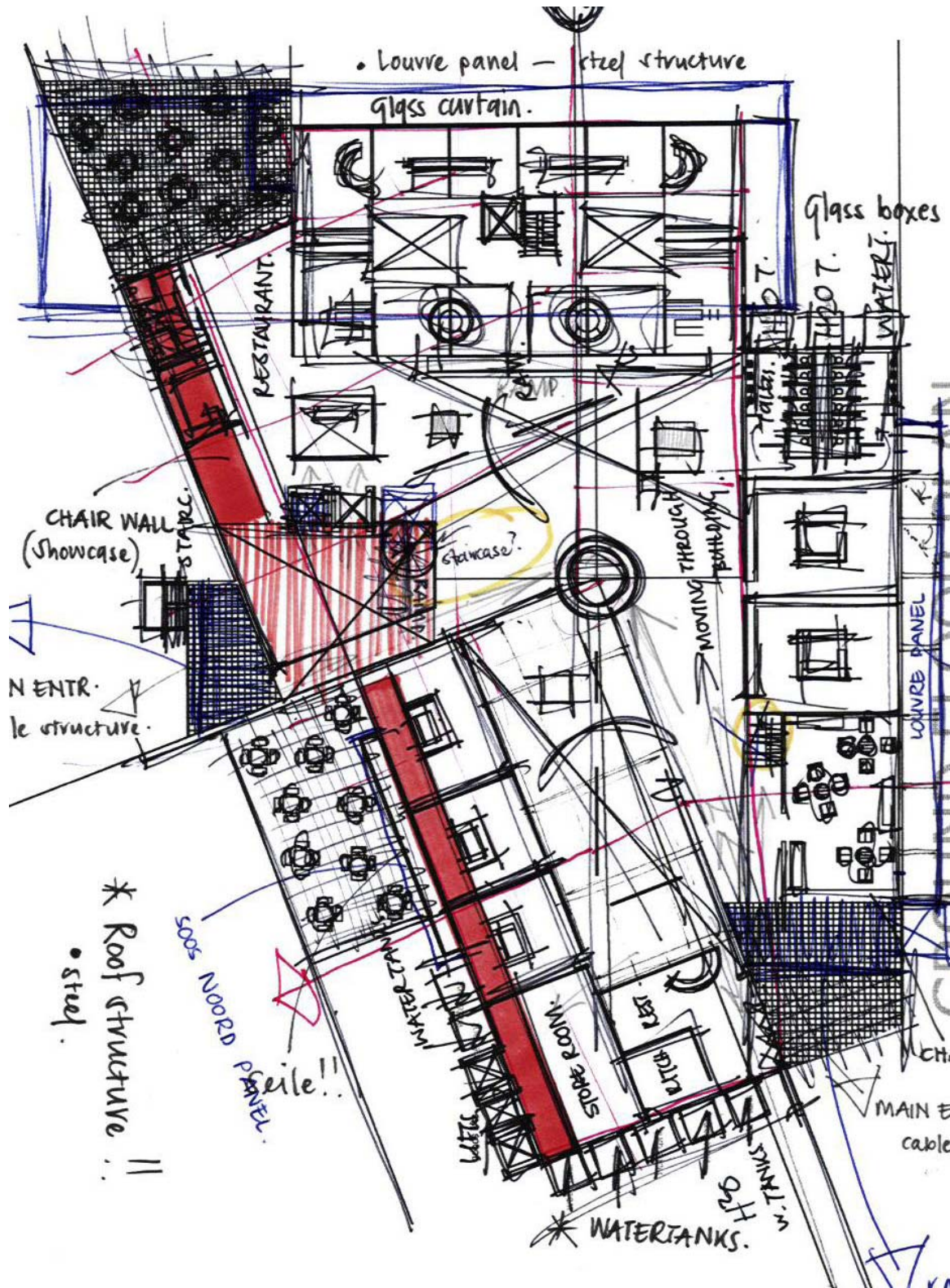


Fig. 95 - Conceptual design and space planning for DiD Warehouse.



DiD Warehouse – A décor, interior and designer furniture warehouse:

DiD Warehouse will meet the needs of every designer and décor/design lover. Architecture and design are two terms that cannot be separated from each other, and that are directly dependent on each other. For man to activate his brain creatively, an immediate attunement with design must be an element of the creative process. Décor, interior design and furniture design are the end products of the creative function of the human brain. Each individual designer item can thus be regarded as a unique and personal product that has been created by a human being.

When the term "design" is intensively analyzed, one realizes that a very definite similarity exists between architecture and design. Today, millions of designs by millions of designers are in existence, some more famous than others, but each unique in its own right. DiD Warehouse provide a container for décor, interior design, and designer furniture from across the world – internationally and locally known and unknown. It is seen as a building that displays and sells this diversity of designs. A very important similarity and contrast exists between the architecture and that which is on display. Functionality in terms of space planning and the design of the façade (i.e. including the architecture) has led to the final product. The main role of every space is to facilitate a maximum view of that which is being displayed or sold. An environment is created where the full potential of the design, rather than the finer details of the building, can be observed.

The impact that DiD Warehouse will have on designers (as well as on home-makers) will be immense, and it will provide opportunities for young up-and-coming designers to be exposed to international as well as local standards and trends. The competitive factor that will exist between décor houses and designers in DiD Warehouse can be utilized to the advantage of all those involved.

DiD Warehouse consists of two important components: that which is for sale, and that which is being displayed. Shops of different sizes will be occupied by interior and designer outlets like Twice International, Knoll, IKEA, MG Design Box, Sevens, P. Maldini, World of Interiors, Designers on the square, Comfort Creations, Tonic, and many more. These outlets, of international and local origin, will be managed from within DiD Warehouse. South African designers are indubitably competitive on an international level and will benefit from the exposure that DiD Warehouse will provide for them.

The various outlets will make a huge contribution to the profitability of the building, through monthly leases and the renting of exhibition spaces and showrooms.

DiD Warehouse will provide the following services: a help-line, where trained staff can advise on everything from individual workstations to the planning of a complete space; a décor research and information center that will provide a computer laboratory and material in the form of a research library inside the warehouse; home delivery and restaurants; home furnishing advisors, who can receive clients by appointment; and, an info-line and shop-by-phone facility, a DiD credit card, as well as overnight facilities for customers in a luxury hotel/guesthouse just outside Linbro Business Park.

A favourable choice of site would be next to a freeway in the Johannesburg area. Linbro Business Park is located in Sandton adjoining the N3 highway, with excellent access to the freeway system and to the fast-growing Sandton CBD. More than 200 000 sqm of buildings have been built in Linbro Business Park and the popularity of the Park continues to increase as a result of the access and security controls. DiD Warehouse will be visible from the N3 highway, and a striking and enticing glimpse of it will be provided. Huge billboards on the west façade of the building will promote the building and its function.

As Linbro Park is mainly composed of warehouses and headquarters buildings, a need exists for restaurants and cafeterias where business people can go to have breakfast, lunch or a quick cup of coffee. DiD Warehouse will be an attraction due to facilities like its restaurant and juice bar. The copy shop, library and computer facilities will meet the needs of many businesses in Linbro Park. Together with the fact that DiD Warehouse will be the host of an international designer market, it will importantly focus on South African talent and local design trends and styles. This will boost and exhibit our own furniture- and décor designers and provide a platform for their talents and ideas.

During the formulation of a concept design for DiD Warehouse, several precedents were studied. Norman Foster's idea of a "serviced shed" influenced many design ideas during the concept phase of DiD Warehouse. He stated that: " a bicycle shed is a building, Lincoln Cathedral is a work of architecture". The systems approach is based on the integration of structure and services and the swift assembly of components. Their significance lies as much in their flexibility in use as in the beauty of their materials or the speed and economy of the construction. For him, aesthetic considerations emerge as a delightfully unexpected bonus.

Therefore, one of the most important terms used by Norman Foster in his formulation of a theory is flexibility – flexibility in terms of special change, aesthetic adaptability, and the size and functionality of spaces. It can be assumed that each exhibition will, and must, differ from the next in terms of size and appearance, how designs are displayed, colour, lighting, materials, etc. The place where Foster's theory will logically be most valid is in the display areas of DiD Warehouse. His theory is carried through where partitions are used to demarcate internal walls. Their flexibility will facilitate change, and will increase the usability of spaces. These partitions will for the greater part be made of glass to ensure maximum views to and from the spaces.



A good South African precedent for DiD Warehouse is Sevens in Fourways. Privacy does not play a role in the spaces, and the view of the furniture on display is not obstructed. Simplicity in architecture and use of materials ensure that the emphasis falls on that which is being displayed. Viewers choose their own path through the furniture and each route will become an experience in its own way. Each exhibition will have a unique appearance which will bring about different modes of movement.

The Vitra Design Museum by Frank Gehry was studied and found to contrast strongly with Foster's idea of the "serviced shed". The Vitra Museum is not used as precedent for its complexity and architecture, but rather for how the objects inside the spaces are displayed. Unrestricted views and the cross of light concludes the building composed of space and light. The idea of the Vitra Design Museum grew out of a furniture producer Rolf Fehlbaum's wish to find and document the roots and history of his craft. The Vitra Design Museum exhibitions concentrate on presenting objects occupying key positions in the development of industrial furniture design because of their material use, construction, function, and form.

Another masterpiece by Gehry, the Issey Miyake retail space is well-known for its use of glass partitions. The interior fixtures are easily moveable and allow spaces to evolve and to be constantly been injected.

The atrium spaces in DiD Warehouse can be seen as sheds, because they are simple and flexible, and without any kind of obstruction (Foster). That which is displayed/sold/marketed makes the spaces more complex (Gehry).

To make future extension and change possible, the building was designed on maximum ground space. A lower ground floor (above the basement) has sufficient space for a future extension and can be used currently for future storage. The plan takes two different grids into consideration, i.e. the north-south grid, and the grid of the site (parallel to the N3 freeway). To strengthen the two axes from inside as well as outside, two dry-packed natural-stone walls are used. These walls are visible from practically every exterior angle. The two entrance ways – a south-east entrance and a western entrance – originated along these two axes. The stone-walls extend a bold invitation to approach the building. The use of texture is carried through from the entrance to the rest of the building, inviting exploration and touch. It conveys a feeling of natural simplicity and innocence right at stout. The two axes lead one to the focus point at the center of the building. It consists of the reception and information desk, from where circulation to the rest of the spaces in the building occurs.

The spaces sell themselves, due to the fact that, from the center, one gets an immediate view of each individual space and its function. The spaces are simple, and movement through them occurs practically without any obstruction or structures like columns, staircases, ramps or walls. The main circulation routes inside the building are located on either side of the two atria. In the absence of exhibitions, the atria can each be seen as sheds with circulation routes through the centers, and with boxes placed around the shed. The "glass box" located to the north consists only of shops, and functions independently as a more complex box next to the simple sheds (atria). The showrooms and offices to the west of the atria function in the same way. Informal seating areas and cafeterias form the sharp point of the plan to the north and south, and spill out onto a balcony. These spaces establish a connection with the landscape and the open air. Views from these open spaces become part of the building and play an important role in satisfying the statement made by Jeremy Gibberd (SBAT Tool 2000), that every building should have sufficient "access to green".

DiD Warehouse is a people-orientated building with many elements providing social spaces, entertainment and a comfortable environment inside and outside the building. One of the most important aspects of the design was to take the human element into consideration in terms of scale and dimension. People, and that which is being displayed/sold, should feel at home in DiD Warehouse, and proportions in terms of ceiling heights and space divisions were exceedingly important design considerations. Because the interior space of DiD Warehouse is simple and open, internal partitions and loose panels are used to define spaces and to create atmosphere. Each order of panels, boxes, showcases, etc., provides a different feel to the space. To develop this space to its full potential, sufficient ventilation (natural, as far as possible) and natural sunlight is provided. Cooling will be done by means of cross ventilation and the "rock-bin system" (as described in full in the baseline document). Natural sunlight penetrates the skin of the building through every possible window, and also through the rooflights above two atria.

The main features of these two ventilation-systems are flexibility, adaptability and choice. The two main glass entrances will form a transparent and friendly focal point that will offer natural light, and aid circulation and orientation. Exhibition lighting is crucial to the success of the exhibition spaces. A large glass curtain wall on the northern façade of the glass box is covered with a louver panel to admit sun in winter and block direct rays during summer. The advertising shading device in front of the glass wall at the eastern façade has two functions: to block direct rays of the sun and to serve as an advertising board. The louver panel on the western façade blocks late afternoon rays and is constructed in a similar ways to that of the north façade louver panel. The glazed façade is sensitive in terms of comfort control, designed to maximize daylight in the building whilst limiting solar heat gains in summer and heat losses in winter. An important characteristic of the louver façade is its ability to permit a low degree of solar energy ingress.

Philippe Starck couldn't help amazing us with technological record-beating chairs that displays maximum simplicity combined with maximum technological complexity. This theory can be applied to DiD Warehouse in terms of its simple structure and technological complexity where louvers, systems, computers, access floors systems, etc., are concerned.



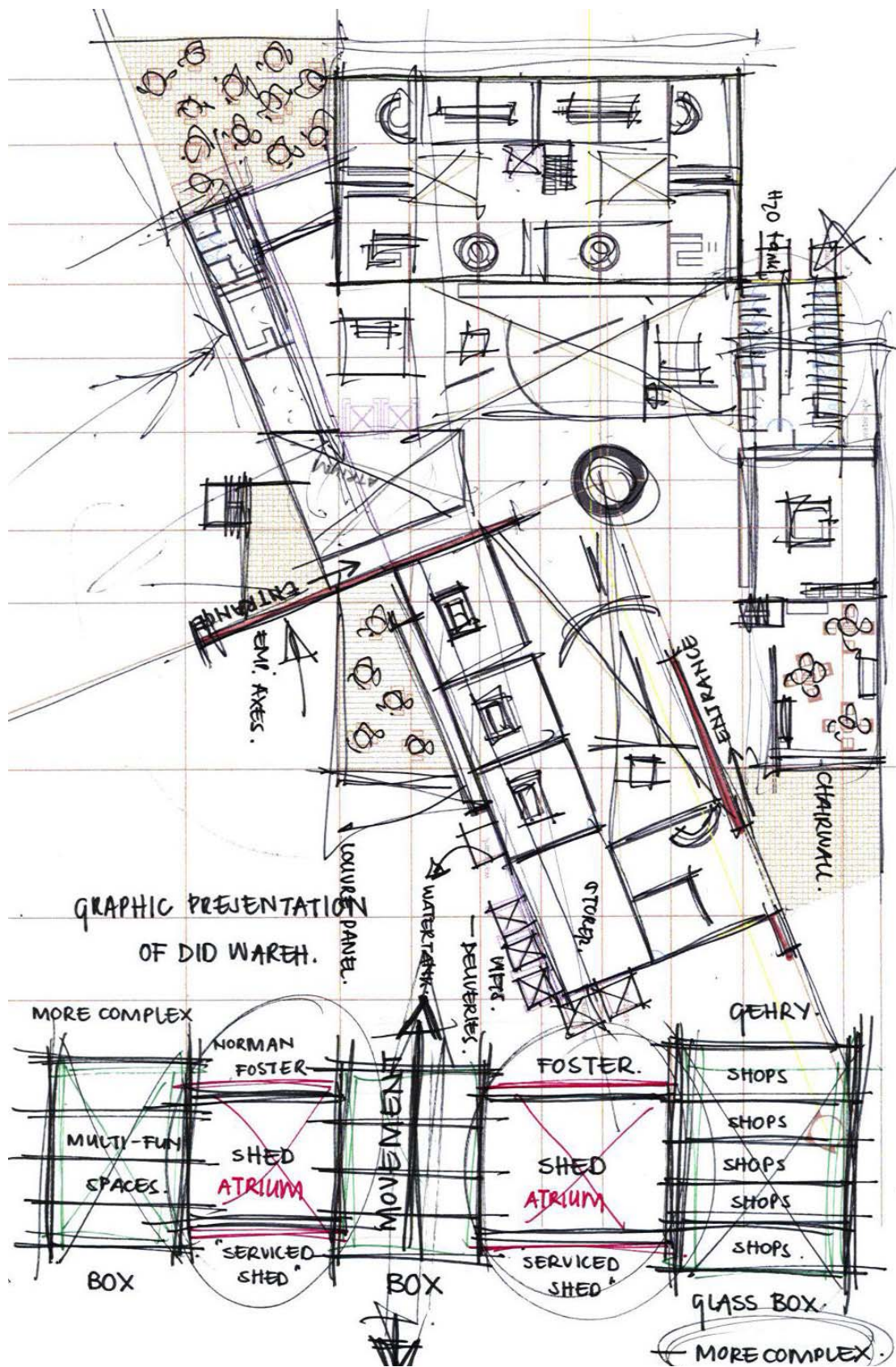


Fig. 97 - Graphic presentation of interaction between spaces in DID Warehouse.

The building is orientated so that openings predominantly face north and south. Openings in the west walls are minimized. Thus, the optimum orientation for solar windows and solar collectors is north and the general principle of the design of the shading devices will be to intercept solar radiation before it enters the building during summer. In winter, the devices are designed to allow the winter sun into the building.

Occupants of DiD Warehouse will be able to control their space in terms of ventilation and sunlight. Simple access floor panels under every floor make it possible for every occupant to allow as much ventilation as desired. Each individual has his/her own preferences where ventilation and personal comfort zones are concerned. Thus it is simple to adjust the angle of the ventilation grill (open, half-open or closed). When the "rock bin system" is activated during the summer months, it is important to ensure that it remains a closed system and that no openings are present. Cold air will be inclined to escape through every possible opening. At night, openings can be used to expel warm air, and to prepare the system for the next morning. As a rule, the system will not be used for ventilation during the winter months. The building will rather rely on the natural stack effect which will be made possible by the atria and openings in the roof.

The fact that a minimum number of openings exist on the west side of the building, does not provide a final solution to the issue of noise. It merely mitigates the problem somewhat. As the site is situated right next to the N3 highway, noise is a much bigger problem than it would be under normal circumstances. According to calculations (see baseline document), the noise level in the building, 100 metres from the highway, will be 69dB during peak-hour traffic. Acceptable maximum noise levels are roughly around 40 –45 dB. It is obvious that a noise level of 69 dB can create a huge problem unless one designs for it.

All windows on the west side have double glazing, with a cavity of 100mm. A cavity smaller than 50mm will not be effective. Walls are also built with cavities of 110mm (110 – 110 – 110). Insulation such as mineral wool and polyurethane foam will be inserted into the wall cavities. According to calculations, a plastered wall with a 110mm cavity will offer a noise insulation value of more or less 55. The suspended floors will act as insulation against sound caused by footsteps. Windows are definitely the weakest part of the building envelope where sound insulation is concerned. All openable windows on the west façade are sealed with rubber.

The views to the outside will have a calming effect on people inside the building. Because of the large amount of glass in the façade and glass partitions between the shops, different objects and horizontal and vertical openings will interplay with each other. By providing pleasant, easily accessible space, one can increase productivity by enabling people to be refreshed by spending short amounts of time in a different environment (temperature, light, humidity or air movement). The views inside the building are equally important and occupants will see different objects intersect each other through different viewports. DiD Warehouse has a working policy that encourages occupants to wear, for example, no ties in summer, or to wear thick coats during the winter months, to ensure comfort and minimize the costs of cooling and other systems.

DiD Warehouse is designed to fully accommodate the disabled, and equal access to and from all spaces is provided. All changes in level cater for them with an appropriate entrance ramp with a fall of 1:12 from the western façade. Edges are clearly distinguished through the use of contrasting colour. Toilet facilities comply with SABS 0400 standards.

DiD Warehouse will contain objects and furniture of high value. The highest possible level of security must be maintained. Although the building is situated in a security business park with access control at the main entrance, it is still an open environment and a risk in terms of security exists. Surveillance will mainly be done by wardens on site (near entrances) and inside the building. The human element is to be considered important but technology allows good mechanical and electronic measures, and alarms will be used to detect removal of items. Entrances and exits will have electronic surveillance. All external doors and windows will be protected from illegal entry. The security room on ground floor level will act as a control room. Cameras will be installed on each floor to observe the entire building. On site, fences will be used rather than a wall, to allow unobstructed views of the buildings.

No smoking will be allowed inside DiD Warehouse. There will be sufficient outside space and balconies for the use of smokers. DiD Warehouse complies with all the Fire Regulations and requirements. (A complete report on the subject is inclined in the baseline document).

The interior spaces of DiD Warehouse are designed to ensure maximum flexibility, and due to the low number of interior walls and obstructions, the area contains a high percentage of useable space. The use of very few corridors, columns, stairs, lifts, etc., contribute to the fact that the interior consists of mainly open space defined by temporary partitions. The useable space will change from time to time according to the layout of the exhibition spaces. On ground floor level, useable space to the extent of 89% is provided. This is excellent and contributes to a highly efficient use of space of DiD Warehouse, which will generate a high income in terms of lettable area.

Structurally, DiD Warehouse should be flexible in terms of the adaptability that is required by the different functions of space. Because DiD Warehouse contains both shops and offices, a raised floor will be installed. Such an access floor has many advantages, which include the out-of-sight management of cabling systems. The floor-to-ceiling height of DiD Warehouse is relatively high to ensure maximum flexibility and to enhance the multi-functionality of each interior space.





Voyager – by Saporiti Italia. (Curved line – concept for curved roof).



Maya Cuoro Rosso Bulgaro – by Denis Santachiara. (Curved line – concept for curved roof).



Fig. 98 - Conceptual west elevation.



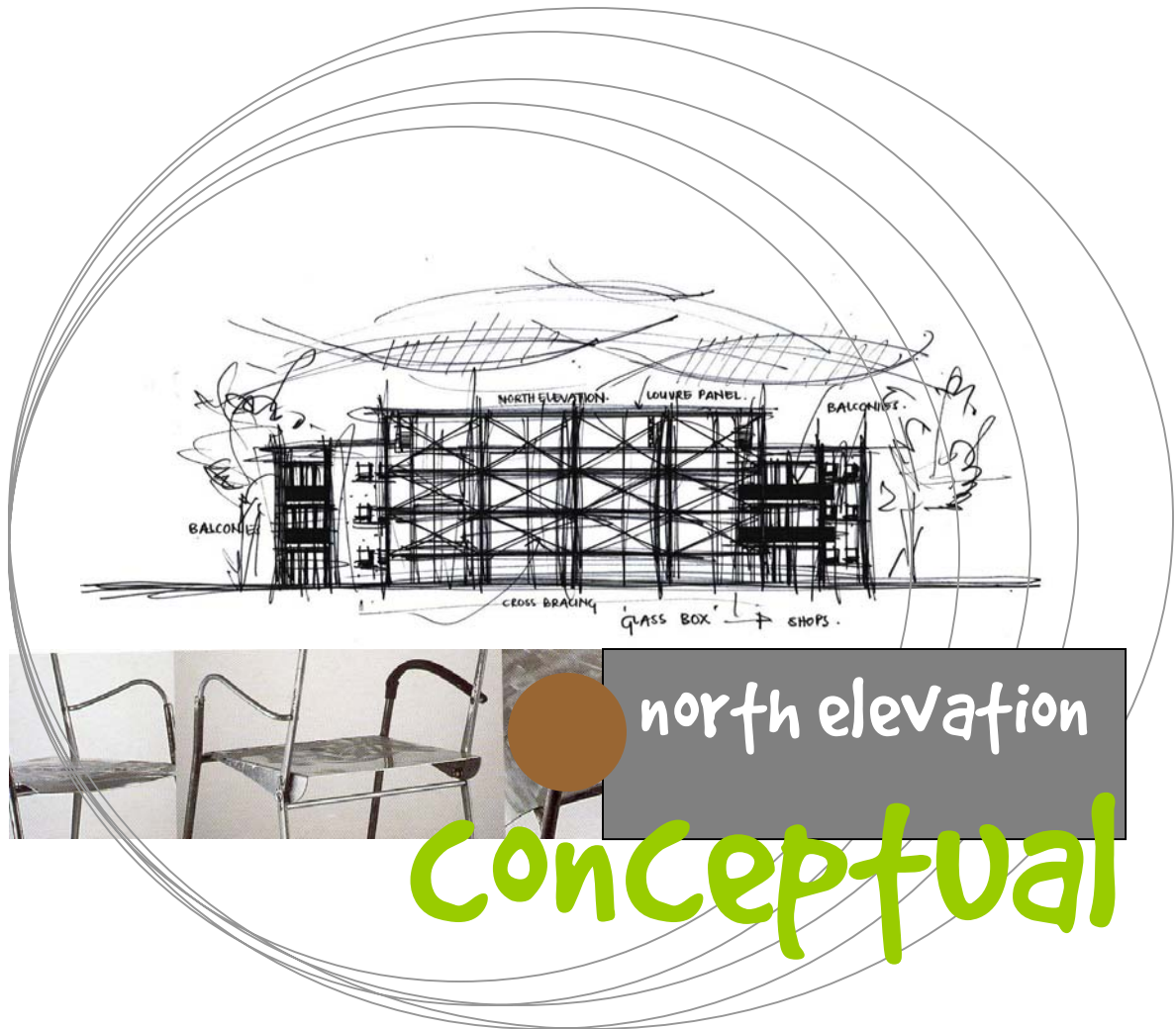


Fig. 99 - Conceptual north elevation.

Spaces can accommodate quick change, and adaptability is ensured without problems in terms of cabling or height restrictions. The access floor is installed throughout the top of a 170mm concrete slab. Installing the floor at a height of 300mm will be sufficient for the purpose of DiD Warehouse. (Panel sizes and further specifications are included in the baseline document). An appropriate floor-to-ceiling height for the ground floor, first and second floors, would be 3270mm. Thus the space becomes efficient and flexible independent of its function.

The roofs of DiD Warehouse are designed in such a way as to catch a huge amount of rainwater annually. The curve represents the line of a chaise-longue – an invitation without any inhibitions. Curved roofs collect water and enable it to run off onto the flat concrete roof area. From here, down-pipes channel the water to tanks, from where it will be utilized for the flushing of toilets and the irrigation of the landscape. Calculations, which can only provide an estimate, make provision for times of drought. If an assumption is made concerning water consumption, rainfall per month/year and roof surfaces, it can be calculated that DiD Warehouse can collect just under a third of the water it requires. Ten water tanks with a capacity of 9000 litres each are installed for this purpose. From here water is pumped to several locations. Because of the enormous size of these water tanks, it was impossible to hide them. In this way they became design features of DiD Warehouse.

The structure of the water tanks is based on the designs of Jeff Covey, i.e. his "Model six" stools. These consist of aluminium with a formed maple plywood seat, a cast aluminium hub, and rolled steel base. The Covey stool collection originated in San Francisco. (More comprehensive calculations are found in the baseline document). The framework of the water tanks consists of a steel base structure anchored by 500 x 500 x 700mm deep concrete bases, a standard reinforced fiberglass tank is encased by profiled steel plates.

Low-flush toilets which use less than 6 litres of water per flush, and low-flush taps, which will allow only 0,03 – 0,17 litres of water per second, are specified for use inside DiD Warehouse. The Warehouse also contributes towards recycling and waste management. A huge waste disposal site exists in Linbro Park. Fees are paid for dumping at this disposal site. The provision of proper waste services will have a positive impact on curbing the spread of certain diseases, the aesthetic quality of the area and the improvement of living conditions. The following two types of waste will be recycled/reused: organic and inorganic waste. Both inorganic waste, and organic waste generated by the restaurants, cafeterias and juice bars will be removed to small bins on site where it will be contained until it is removed to larger bins outside the building. Currently, the best location for these bins is on the site next door to DiD Warehouse. A canal and very unstable soil conditions make this site unsuitable for building purposes. Bins will be clearly differentiated from each other to avoid confusion. An appointed contractor from the area will be responsible for the weekly removal of waste. From here it will be distributed, processed (i.e. for soil fertilization of soil) or recycled (i.e. glass).

All specified planting is indigenous, and thus has low water requirements. The amount of paving on site is kept to a minimum; water-permeable hardening is preferred for its ability to absorb water. It also reduces the burden on the water treatment plant, preventing annual overflows. Pilot studies have proved that it is feasible to reduce hardening (including roof surfaces) from about 50% to 40%. Extensive soft landscaping, i.e. trees and lawns, will absorb water. The area that will carry the most traffic, from the entrance to the parking area and basement, will be surfaced with grass-concrete blocks instead of paving. The grass growing inside the cavity of the concrete block will absorb the water. Continuous trees are provided on the north-west, north and north-east edges of the site, and evergreen trees will be used as a wind break on the south side. Indigenous deciduous tree species, *Ekebergia Capensis* and *Celtis Africana*, are planted on the northern side of the building, to provide shade during the hot summer months, but to allow sun during the winter months.

Different types of pavers, ground covers, trees and grasses will be used to enhance contrast – rough vs. smooth, colour vs. non-colour, shadow vs. light, tall vs. small, straight edges vs. organic lines, etc. In this way the landscape will complement the building, enhance the view, and form an important link to those parts of the building, i.e. balconies, that open up to the landscape.

To summarize, the quality of spaces in the building is important in order to enhance the enjoyment of the activities within, and to instill confidence and a sense of permanence to the place – DiD Warehouse. (See Target Setting for Parking Requirements).

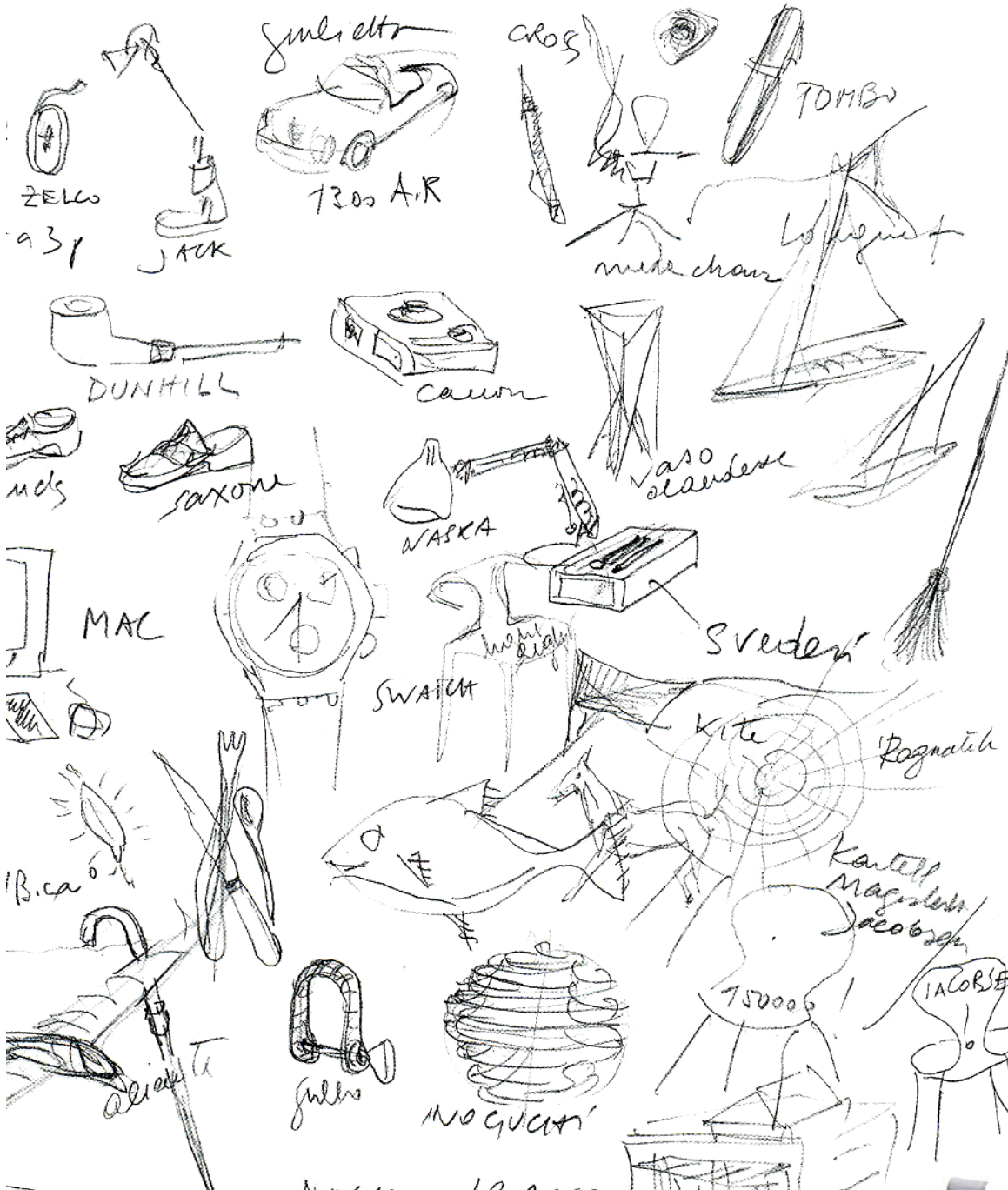
The structure consists mainly of steel columns, concrete slabs and brick walls. Columns are respectively built of steel and concrete, depending on the loadbearing function they have to fulfill. Interior spaces are subdivided by drywall partitions. These consist of a timber framework clad with gypsum board and covered with textured vinyl.

Two types of roofs will be employed, i.e. a flat concrete roof, and curved sheet-metal roofs. The curved roofs consist of a steel structure with steel columns, fixed to the brick wall of the flat roof construction. Steel gives the roofs a lighter appearance, and their curved lines, as mentioned, resemble those of a chaise-longue. The roof construction is exposed, and creates an industrial appearance on the inside. Choice of materials was based on energy values. The embodied energy of different materials were studied to determine their suitability. Steel (20 GJ/ton), aluminium (75), cement (13,1), tiles (4), clay bricks (3,5), brick (2,5), concrete (1,7) and concrete tiles (12), are just some of the materials with a relatively low embodied energy. Thus, steel balustrades, brick walls, concrete slabs, steel and concrete columns, plasterwork (Coprox – clay coloured pigmented plaster), tiles (natural clay tiles), natural dry-packed stone



walls (two entrance walls), enamel double-coated steel louvers and sheet metal roofing make up the choice of materials for DiD Warehouse. (See working drawings for more detailed information on structure and materials).

Quality is achieved through the integration of spaces, materials, a mixture of uses, and pedestrian access. DiD Warehouse offers a variety of spatial experiences. These experiences commence outside the building, i.e. in the landscape, after which the two stone walls emphasize the entrances to the building. As one approaches the building, the spatial experience intensifies and becomes more complex than the landscape. Contrasts in texture, light and size increase from the landscape towards the building. The spaces are meant to be silent, not static; they are differentiated through irregularity. Walkways outside the building steer movement through a series of spatial sequences and provide curved elements of both mystery and surprise, creating changing perspectives. On entering DiD Warehouse, the dynamic internal circulation allows open, interactive viewing, inspiring the visitor to choose his own route through the spaces – to evoke moments of pause, reflection, and discovery.



[Domus 824, March 2000:59]





Fig. 100 - Conceptual south elevation.





Fig. 101 - Conceptual east elevation.



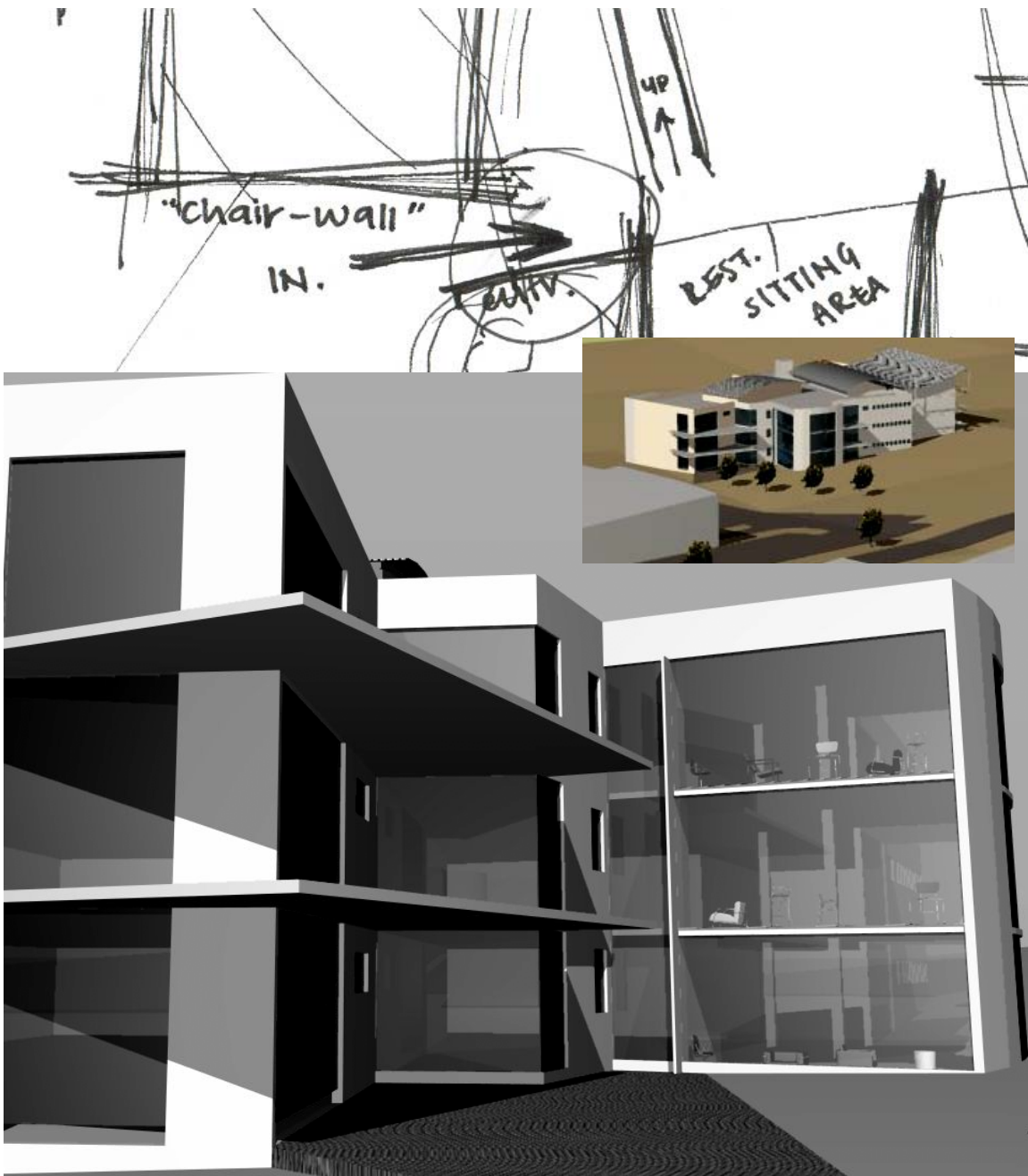
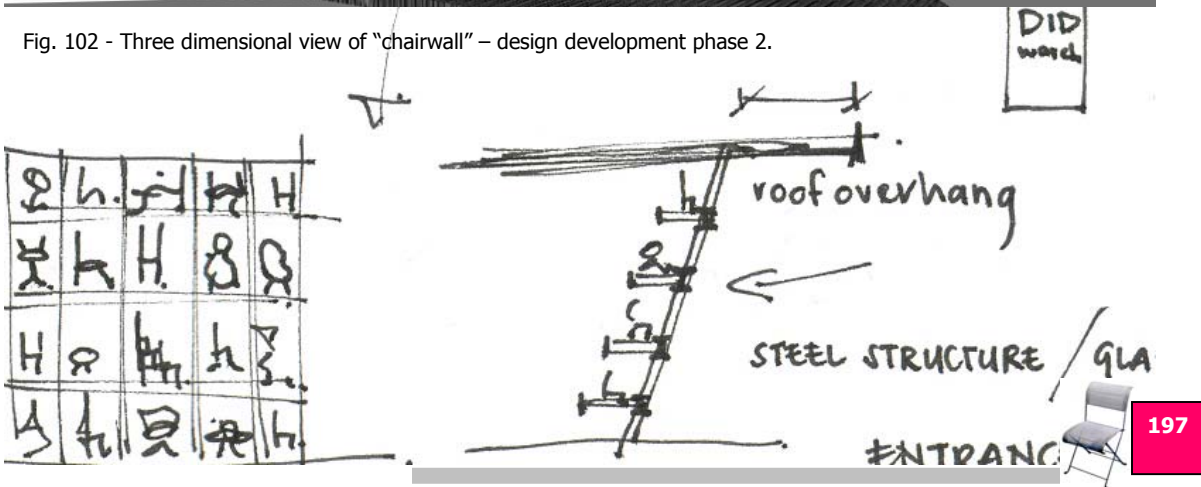


Fig. 102 - Three dimensional view of "chairwall" – design development phase 2.



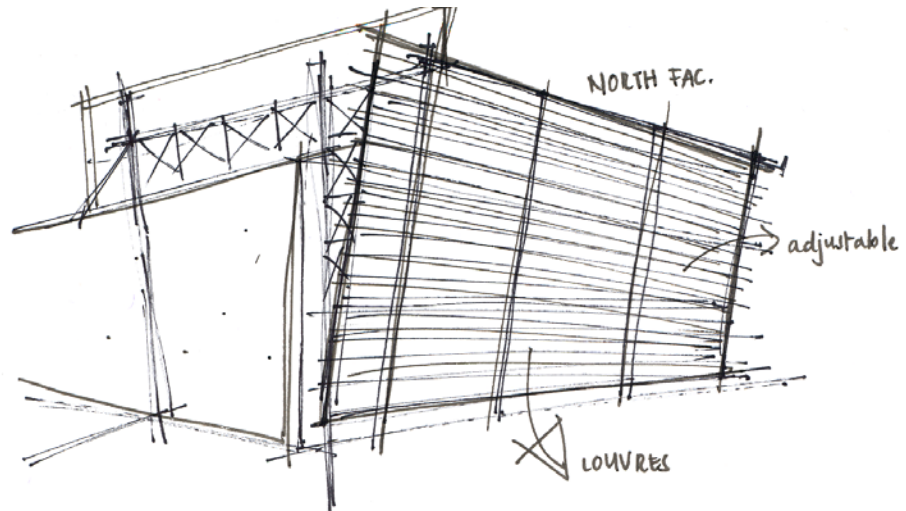
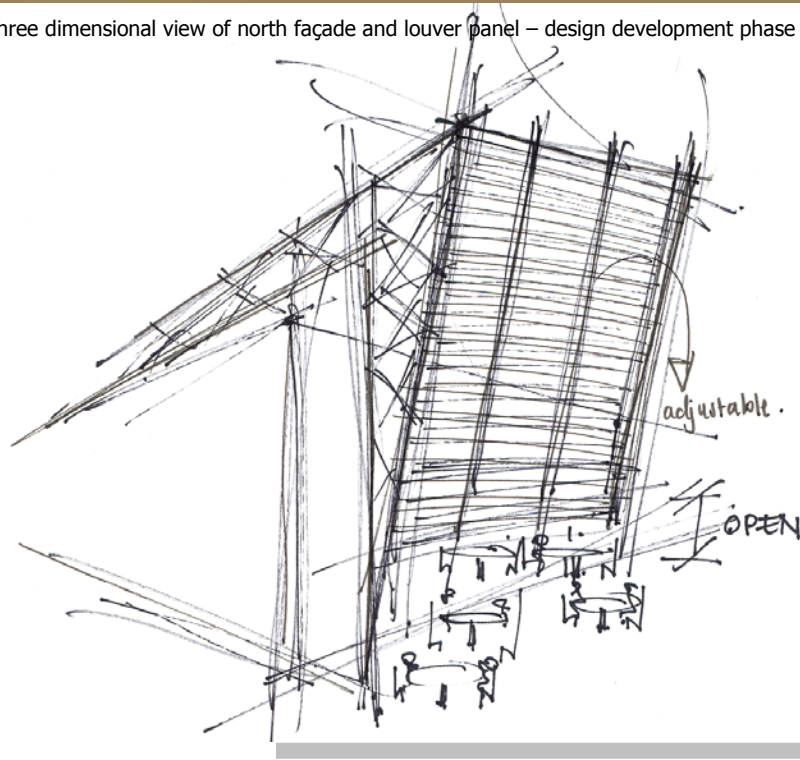


Fig. 103 - Three dimensional view of north façade and louver panel – design development phase 2.



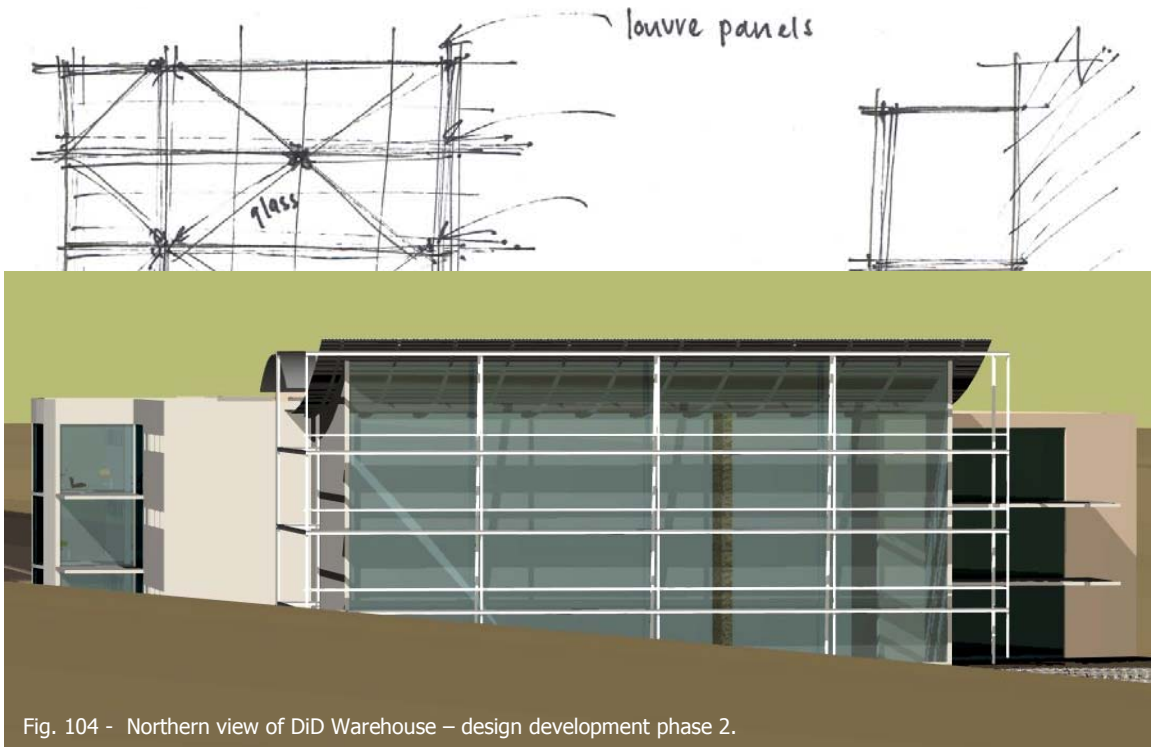


Fig. 104 - Northern view of DID Warehouse – design development phase 2.

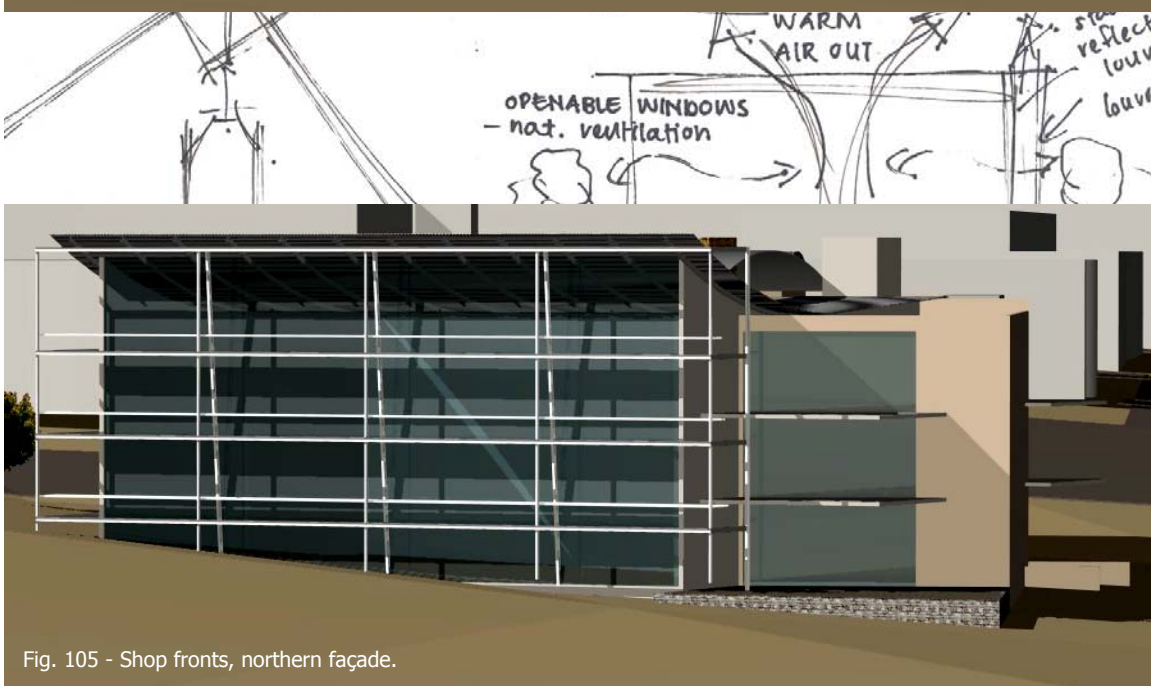


Fig. 105 - Shop fronts, northern façade.

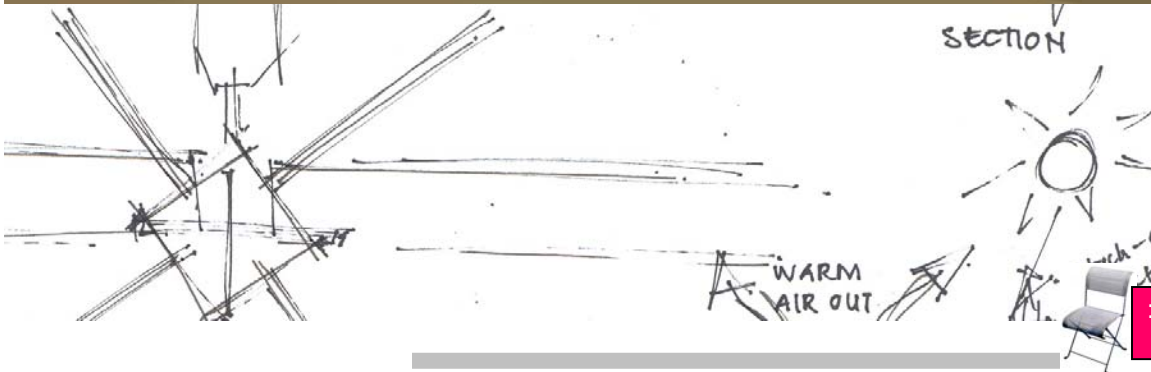
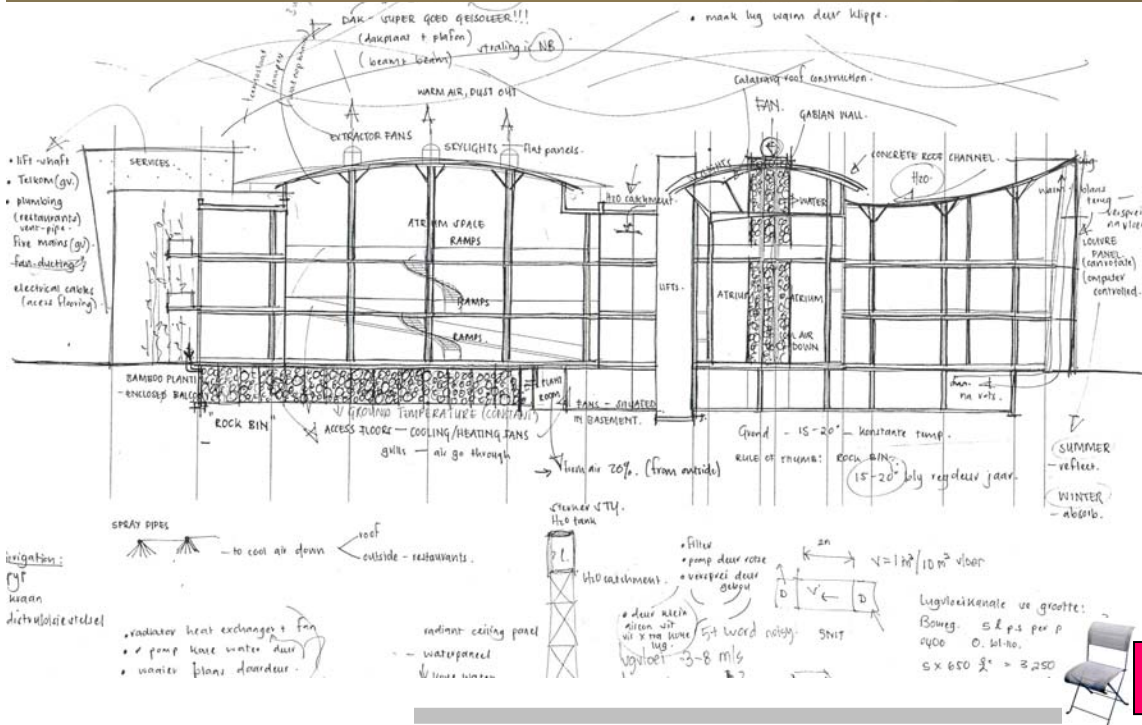




Fig. 106 - Three dimensional model of DID Warehouse – design development phase.



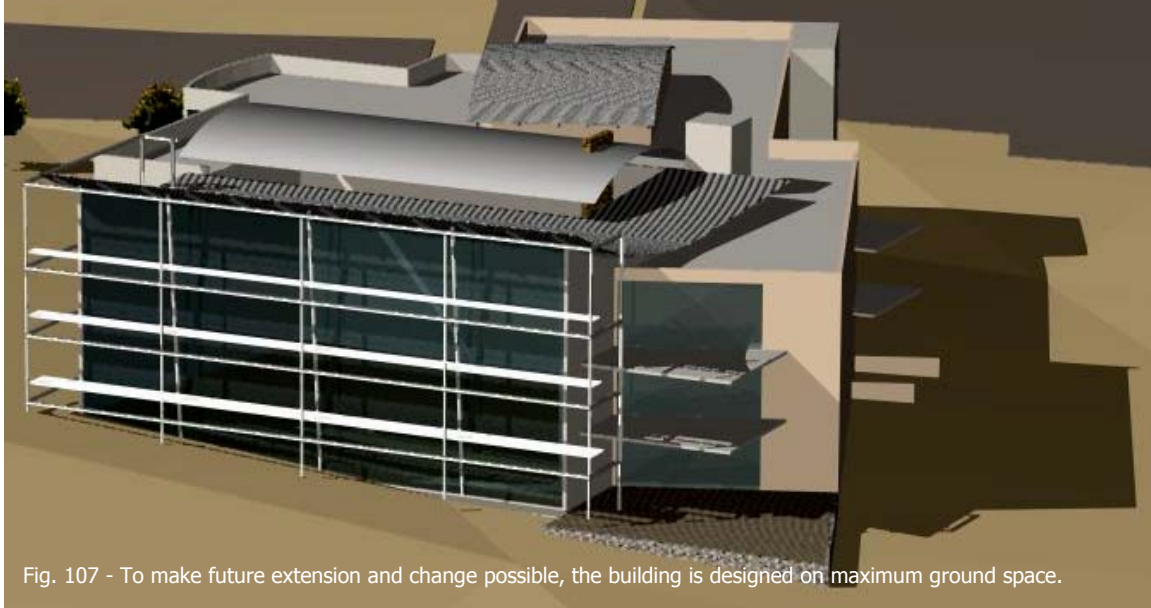


Fig. 107 - To make future extension and change possible, the building is designed on maximum ground space.

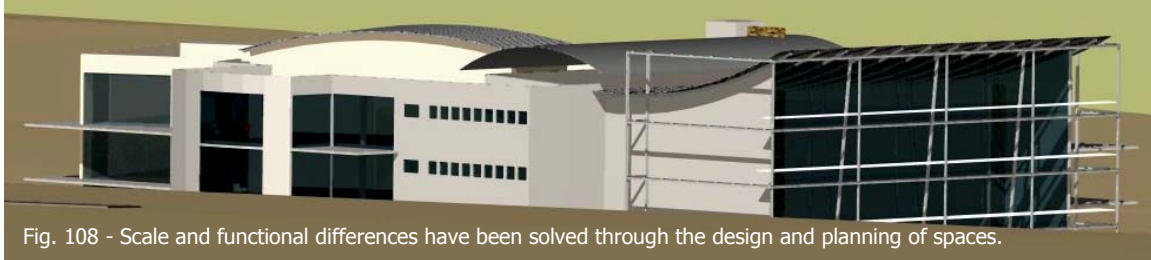
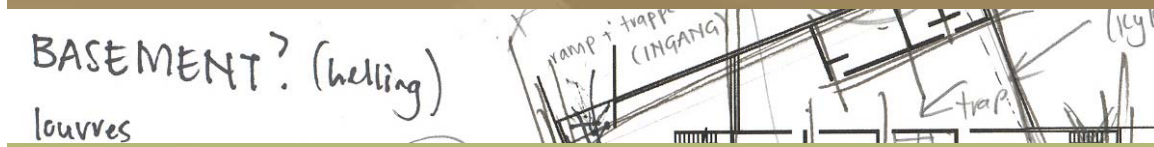


Fig. 108 - Scale and functional differences have been solved through the design and planning of spaces.

