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&

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我宅的設計主軸

建築商房產銷售廣告標示著:郵輪越過海上停駐在這塊福地。頓時,絢麗繽紛的異想蹦入 筆者的腦中,如果居住在這棟樓裡的話,何不在家裡客廳擺艘遊艇,就以這艘遊艇作為設 計主軸,搭配著運河、鳥園、碼頭和樹林的多樣化,這樣既合乎該棟建築的設計初衷也可 凸顯我宅的特色。到銷售中心洽談時,提出了「我宅有運河有遊艇有花園有樹林」的構 想,這話題引起了大家的興趣及廣泛地討論。當時該建築個案工程設計藍圖尚未竣工,意 味著對我的構想可在藍圖上做些微調而達到我的需求。



The My Home design theme

A developer's real estate advertisement displayed a ship crossing the sea and making port in a pleasant land. Immediately, a fantastic vision appeared in the author's mind: If he were living here, why not place a yacht in the living room, and let this yacht be the design theme? This approach would simultaneously conform to the building's original design idea, and also highlight the features of the My Home concept. After going to the sales center, the author mentioned that "My Home has a canal, a yacht, a garden, and a forest," and this vision induced everyone's interest and widespread discussion. And since the project design blueprint had not been completed at that time, the author's ideas could be modified on the blueprint in order to better meet his needs.

現實上,要實現這個想法需具備兩個要素,一是確定所選的樓層以及在部分樓板區塊進行降板工程。什麼是「降板」?正常而言,建築上的各樓層地板必須與地梁的上沿呈同水準線,讓樓板下方保持最大淨空以保證樓下的樓層應有的室內高度;反之,如果將樓層地板降低到與地梁的下沿對齊,那麼樓上沿著地梁的四周區塊會形成凹洞,這樣會嚴重地壓縮樓下住戶的使用高度。這個「凹洞」在使用者樓層而言就是所謂的「降板」區塊。目前的建築實例中採用這種手法僅僅運用在浴室衛生間的特定區域,其目的在方便同樓層的業主可做到管道的自我維修,以避免對樓下住戶造成困擾。但是大面積的運用降板的做法,在現實的建築實例上實屬罕見。

採取降板是有嚴格條件限制的,因為這種方式會影響到樓下住戶的權益;除非上下樓層均屬同個業主那就另當別論了。當然也有例外情況,如果樓下是屬設備樓層或大廳或其他公共設施,在不影響管道走向情況下則是被允許的。換言之,要實現「我宅有運河有遊艇有花園有樹林」的構想,在大樓沒有設備樓層的情況下,就只能選擇緊鄰大廳的最低樓層了。



Actually, realizing this concept would require to key elements: First, confirmation of the floor and implementation of a descending floor project on portions of the selected floor. What is a "descending floor"? Normally, the floors of a building must form a horizontal line with the floor beams, which will maintain maximum clearance below the floor, and ensure that the floor below has sufficient interior height. Conversely, if the floor on any one story is lowered to the point that it is aligned with the bottom of the floor beams, the sections of the floor above that are between the floor beams will form depressed areas, which will severely restrict the usable height on the floor below. These depressions will form so-called "descending floor" areas on the user's floor. In current architectural practice, this method is only used in specific areas, which chiefly consist of bathrooms and toilets, and has the purpose of letting the owner of that floor perform plumbing maintenance without any disturbance to the floor below. However, the use of a descending floor over a larger area is a rarity in contemporary architecture.

Because a descending floor will affect the rights of persons living on the floor below, use of this method is severely restricted. However, if both upper and lower floors belong to the same owner, this is of little consequence. And of course there are other exceptions; for instance, it may be permissible to employ a descending floor when the floor below contains equipment or public facilities such as a lobby, and the situation will not affect the routing of pipes and conduit. In other words, to realize the ideal of "My Home has a canal, a yacht, a garden, and a forest," when the building has no dedicated equipment floor, is only possible to select the lowest floor above the lobby.



選擇低樓層有褒有貶;貶的觀點是,大樓位居海邊卻選擇望不到海景的樓層,那麼就失去居住在此大樓的意義;褒的是,在都會區三樓就是別墅的制高點,從危安角度而言似乎最低樓層會令人比較安心,此其一。入夜後才是家人團聚時刻,而此刻的海景卻是烏黑一片啥也看不到,此其二。另外,最低樓層的最大好處就是樓下無住家而是大廳,絕對不會影響到樓下的安寧;在進行天花板工程前,如先在樓板底鋪設隔音毯及吸音板,那麼也無需擔憂半夜傳來樓上的惱人腳步聲。只要設計得宜,其實重點並不在樓層的高低,而是在室內的布置是否有內涵、有人性、有意義。

在合宜條件下,我宅的設計主軸將朝向「在運河行駛的遊艇所飄揚的船帆將在我家揚起」 邁進,再以遊艇碼頭MARINA、棧橋、海洋介面、流水動感、系列樹叢、健康步道、海鳥 燈具、星空介面、鳥園、壁爐等多方元素,來襯托這艘遊艇YACHT主題的明確性。而且 要做到在完工後,這裡整體的氛圍不僅具有外貌的美,更擁有內涵的美,同時也具備實用 的居家功能,讓這裡的浪漫純美自然與和諧充斥著我宅各處。





Living on a lower floor has advantages and disadvantages. As for disadvantages, if, for instance, a high-rise is located near the seashore, choosing to live on a floor where the sea is not visible will make living in this building meaningless. As for advantages, first, since the third floor is the highest point of most urban villas, the lowest floor would seem to be the safest from the perspective of security. Secondly, since family members are typically together at home only after dark, the view of the sea would be largely invisible at this time in any case. Furthermore, the largest benefit of the lowest floor is that only the lobby, and no other residents, would be beneath one's home, so one need not worry about disturbing the peace and quiet of people below. Before performing a ceiling project, if one installed soundproof felt or sound-absorbing panels below the floor, there would be no worry about the sound of footsteps above in the middle of the night. As long as the design was suitable, the actual height of the floor will not be of great importance, and we can focus on whether the indoor arrangement has substance, has appeal, and has meaning.

In appropriate circumstances, the My Home design theme will evoke an image of "the sail of a yacht cruising on a canal rises above my home." The marina, walkways, water's edge, and flowing water will be linked with such elements as a grove of trees, foot massage path, seabird lamps, starry sky, aviary, and fireplace. This will clearly highlight the yacht theme. Furthermore, after the home has been completed, the ambiance will include not only outward beauty, but also inward charm, and it will further possess the practical functions of a dwelling. As a result, a romantic beauty will naturally and harmoniously fill every part of My Home.



船帆在我家揚起

在大樓住家放艘遊艇充作客廳,呼應著魚池運河、呈現水流浪花動感、搭配著海景視覺, 酷似汪洋中一條船的假像,以及船帆在我家揚起的意境設計,這個點子有點瘋狂,大家都 說是個天方夜譚,因為涉及現場是否具備施工條件且工程技術層面過於複雜,當然還要花 掉一部進口雙B車的預算來打造一艘遊艇,似乎鮮有人願意嘗試。

既然現場已經具備深達65公分的降板和長達逾12公尺的凹洞,雖然遺憾的是中間橫跨一根 地梁阻礙了降板的整體性,讓這個點子有點窒礙難行;但辦法總比困難多,還是有方法可 以克服,這樣的設計更可激發挑戰難度才有意思。基本上,對《船帆在我家揚起》的設計 理念如下。



A sail rises above my home

Placing a yacht serving as a living room in a high-rise residence will evoke a fish pond canal, and will create a sense of flowing water and breaking waves. This will combine with the seascape and make it seem as if an imaginary boat is sailing on the boundless sea, and a sail has been hoisted above the home. This idea is a bit crazy, and everyone says that it is a fantasy. And because this idea would require certain construction conditions, because it would be technically complex, and because it would require a huge budget to create the yacht, not many people would perhaps wish to realize this plan.

Although the site already possesses a descending floor with a depth of 65 cm and a depressed area 12 m in length, a floor beam unfortunately mars the integrity of the descending floor area, which would make realizing this idea quite difficult. However, where there's a will there's a way, and there are methods to get around this problem. Sometimes overcoming challenges is ultimately what makes a task meaningful. Basically, the "A sail rises above my home" design concept is as follows:







首先,要先建造遊艇碼頭MARINA及海洋,具備的要件包括遊艇停泊、岸上露臺、連接棧橋及航道水域。

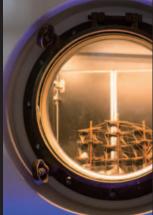
- ⇒ 遊艇停泊:這裡只可設計單泊位空間,要能停泊40英呎以下的小型豪華遊艇。讓這裡不僅擁有獨特的船舶氛圍,也創造另類的居家客廳的設計思維。
- ⇒ 岸上露臺:這裡以環繞壁爐的區塊作為人員休息區,搭配小鵝卵石地面MARINA的健康步道,配備了造型新穎的鳥園,也植栽了相關的綠化設施。
- ◆ 連接棧橋: 鋪設南方木作為連接碼頭與遊艇之間的橋樑,為了方便木棧道的清洗,在固定棧橋的樁基配備清洗龍頭及水管。
- → 航道水域:以魚池視作運河或權充海洋,魚池要高出地面30公分,在魚池前後鏡面反射下所拉長的水域情景酷似運河或迷你海洋;在非魚池或無水的區域則以藍色烤漆玻璃搭配LED藍燈作為水域的表徵。由於遊艇是作為客廳所在,綠色是不可或缺的,所以,要選擇擁有綠意的運河為妥。那麼有樹林的運河到底在哪裡呢?目前聞名世界的運河有兩條,一是蘇伊士運河Suez Canal,另一是巴拿馬運河Panama Canal;前者位居沙漠之地,後者沿岸兩側充斥著樹林,所以在我宅的遊艇應是行駛或停泊在巴拿馬運河上。因此,這艘船的設計案命名為「在巴拿馬運河飄揚的船帆在我家揚起」。



First, we must create the marina and the sea, including the key elements of the yacht mooring area, an onshore terrace, the connecting walkway, and the boat channel.

- \$\Psi\$ Yacht mooring area: This should consist of only a single berth, which should accommodate a small luxury yacht less than 40 ft. in length. This not only should possess a unique nautical atmosphere, but also realize alternative living room design thinking.
- Donshore terrace: This area surrounding the fireplace is the crew's rest area, and also includes the marina's foot massage path, which is covered with small pebbles, and an aviary with a novel design. There should also be appropriate landscaping.
- ‡ Connecting walkway: The wooden walkway serves as a bridge between the dock and the yacht. In order to facilitate washing of the walkway, the pilings holding the walkway are equipped with a faucet and hose.
- Doat channel: We take fishpond to be a canal or temporarily standing in for the sea. The fishpond should be 30 cm above the ground. The elongated water reflected in the mirrors in front of and behind the fishpond strongly resembles a canal or a tiny sea. Under the blue LED lamps, blue enamel glass in the areas apart from the fishpond also bring to mind water. Because the yacht is the location of the living room, green is indispensable. As a consequence, the canal should have some greenery. Where is there a forested canal? The world's two most famous canals are the Suez Canal and the Panama Canal; the former is located in a desert, but the latter is surrounded by jungle on both sides. The My Home yacht should therefore be passing through or stopping the Panama Canal. Because of this, the boat design project has been named "A sail on a boat passing through the Panama Canal rises above my home."





遊艇要怎麼處理?方法一,買現成的直接擺放就好,這太簡單無趣,令人索然無味。方法二,根據現場環境及條件量身打造,這種方式挑戰意味濃厚才夠意思。根據上文所提及約12坪的凹洞有不容絲毫破壞的地梁元素必須慎重考慮,如果直接買艘遊艇擺放,不僅其體積太大無法整體搬入,且必須配合地梁位置進行分段肢解,對目前玻璃鋼FRP材質遊艇而言將會碎不成形,而日後有縫接軌起來也會體無完膚,且玻璃纖維材質太過優美無粗獷感並缺乏力的美。權衡買或做的利弊得失後,決定採用方法二,就是現場打造遊艇。

要如何打造30英呎的豪華遊艇?基本上要包括下列的元素,其設計主調如下。

- ↓ 船型:把筆者曾在法國敦克爾克(Dunkerque)碼頭所拍攝的船舶照片翻出,按照這艘大帆船的造型作為船舶設計的初步藍圖。
- ◆ 色系:現代遊艇以簡潔為要,白是主色,灰色為輔,船舶全身烤白,船舶底部及欄杆則 烤灰漆。此處要注意:船身泡水部位不要為求美觀而進行補土作業,以避免日後表面噴 漆脫落而造成水污染。







How will we deal with the yacht? In the first method, we can buy a ready-made yacht and put it here. This is just too simple, however, and seems a bit dull. In the second method, we make a custom-built yacht suiting the site environment and conditions. This is more challenging, and much more interesting. I have already mentioned that there is a floor beam located in the 12-ping depressed area, and this floor beam cannot be touched. This floor beam must be carefully taken into consideration if we place a ready-made yacht here. Not only will the yacht be too large to be moved in one piece, it must be disassembled into sections in order to accommodate the floor beam. Modern yachts made from fiber-reinforced plastic (FRP) cannot be easily disassembled, and will look like a wreck when reassembled. In addition, the fiberglass material will appear too lovely, and lack the beauty of strength. As a result, after considering the pros and cons of purchasing or making a yacht, we decided to employ the second method, i.e., building the yacht on-site.

How to build a 30 ft. luxury yacht? The yacht basically had to include the following elements, and the design keynotes are as follows:

- ↓ Type: The yacht was modeled on a boat photographed by the author at a dock in Dunkerque, France. The
 preliminary blueprint of the yacht was adapted from the styling of this large sailboat.
- Colors: Modern yachts have an uncluttered design. Here, white is the main color, and gray is the secondary color. The whole hull of the boat will be painted white, and the boat's bottom and railing will be painted gray. Please note that the part of the boat immersed in water should not be caulked in order to improve its aesthetics. This will prevent any paint coming off in the future and causing water pollution.



- 3 船頭:船頭內有主舵及配備儀錶板。萬綠叢中一點紅,選擇以紅色升降座椅作為駕駛 座,船頭外為船錨及船名。
- ♪ 船舷:在船舷有副方向舵以及欄杆。
- \$\text{1}\$ 船尾:包括階梯、漁獲儲藏庫和料理台面以及進入的鍍鈦扶手。船尾處放置西班牙白色 賽麗石製作的旗杆座並斜插旗幟。藍與白是典型的地中海顏色搭配,所以懸掛著芬蘭旗 幟。
- 赴船艙:在滴當位置挖洞鋪設烤漆玻璃,以塑造地面下還有船艙的視覺感。
- \$ 船殼:不鏽鋼作為主材以表現鋼材的堅強撞擊力;翹起的船頭以平直鋼板進行弧度折 轉,將多片的弧度介面橫向銜接起來以呈現順暢曲線。
- ⇒ 動感:船舶地面下的水槽鋪貼藍色系列的馬賽克並鋪設白色鵝卵石,水槽內的流動水漾 標示著遊艇的行駛動感。



- Dow: The bow contains main ship's wheel and is equipped with instrument panel, which forms a spot of red in a forest of green. A red lift seat has been chosen as the helmsman's seat, and the anchor and boat name can be seen on the outside of the bow.
- 1 Gunwale: The gunwale has the auxiliary ship's wheel and railing.
- Stern: Includes the stairs, catch storage hold and cooking counter, and titanium-plated entry handrail. The stern also has a flagpole holder made of Spanish white silestone and a flag flown at a diagonal. Blue and white are a typical Mediterranean color pairing, so the flag of Finland is flown.
- ‡ Cabin: Holes are made at appropriate locations and enamel glass is installed. This provides the visual effect that there is more of the cabin below the floor.
- ‡ Hull: The hull is chiefly made from stainless steel, which expresses the strong impact of steel; the upturned bow is formed by bending the flat steel plate, and the curved junctions between the plates are joined together horizontally to provide the effect of a smooth curve.
- ‡ Sense of motion: A tank in the floor around the boat is covered with blue mosaic tiles in which white pebbles have been installed. The simulated ripples in the tank convey the impression of a yacht in motion.

- → 木質:地面及座椅均鋪設自然樸實的原色柚木;地面柚木與船身平行鋪設,座椅柚木與船身垂直鋪設。
- → 石材:不鏽鋼與柚木在台面或椅面的銜接處或收尾處,均鋪設西班牙白色人造石。
- ↓配件:採用銅質材料。觀景窗安裝來自驅逐艦及航空母艦所拆卸的窗,台面龍頭及停泊 繋繩杆選用銅製品。在船舶制高點豎立鐵藝指引方位牌。
- ♪ 燈光:以白暖光為主,必要位置輔以LED藍燈光。
- ↓ 電路:為避免電線短路,所選燈具、電線及插座、船舶內各開關插座都要具備防水功能。
- ⇒ 設施:我宅船舶就是我家的客廳,在船首與船身銜接位置配備55吋電視和環繞音響,這裡可觀看節目也可看書,亦可與好友閒話家常。

拜此樓層的降板工程所賜,我宅才有機會將客廳設計成遊艇造型。雖然遊艇長度僅有30英呎,在國際標準規格而言是屬小型遊艇,但就居家室內能擺放下近9米長的船身還是不容易的。該遊艇內外全部要在現場手工打造完成,雖需耗費長達半年及所費不貲,也值得去做。該遊艇造型的客廳具體施工時,必須具備下列的實用及觀賞功能。







- \$\psi\$ Wood: The floor and seats are both covered with natural, unadorned teak; the teak on the floor is laid parallel to the hull of the boat, and the teak on the seats is perpendicular to the hull of the boat.
- \$\psi\$ Stone: Spanish white silestone is installed at the junctions and ends of the stainless steel and teak where they are used on flat surfaces or the seats.
- ‡ Fittings: Fittings should be made of copper. The portholes are originally from destroyers and aircraft carriers, and the deck faucet and bollards are made of copper. An iron art wind vane is mounted at the highest point on the boat.
- 1 Lighting: Chiefly soft white lighting; blue LED lamps will be installed where needed.
- Circuit: To avoid short-circuits, all lamps, power cords, outlets, and switches and outlets inside the boat must be waterproof.
- ‡ Facility: Since the My Home boat will be my home's living room, a 55" TV with surround-sound stereo will be installed at the junction of the bow and hull. The residents can watch programs or read books here, and they can also chat with friends.

Thanks to its descending floor layout, My Home can accommodate a living room designed in the form of a yacht. Although the yacht is only 30 ft. in length, which constitutes a small yacht according to international standards, placing a hull nearly 9 m in length inside a residence is still no easy task. The interior and exterior of the yacht must be completed by hand on-site; although this will take as long as a half year, and require considerable funds, it is definitely a worthwhile project. The yacht-shaped living room must have the following practical and decorative functions when it is installed:





- → 船頭區:一年之計在於春,此遊艇命名為春天SPRING號。外有船錨,內有儀錶板、方向舵、駕駛座、摩斯密碼燈以及風向牌。這裡設有三人行座椅區,孩童可在此遊樂駕駛及體驗密碼燈的樂趣。
- ↓ 船身區:兩側可容納12人的長條柚木座椅區,在地面流水玻璃景觀槽的流速下,似有行進中的動感。這裡是個聚會場地,也是讀書、話家常、看電視、唱卡拉OK的好去處。
- → 船尾區:包括左右景點及臺階。其一是迷你展示館系將漁獲儲藏櫃與航空母艦窗結合起來以展示船舶用品,其二是咖啡吧台區則搭配著一體成型的水槽及銅質水龍頭,其三是在階梯上的扶手讓遊艇泳客得以有躍入海中的遐想。
- → 船舷區:船舶兩側均設置灰色系欄杆。在靠窗這側的船舶欄杆外種植系列樹叢並安裝植物燈與照樹燈,示意船身駛過巴拿馬運河。成排的夏威夷椰子樹的樹梢撫摸著人們,讓船舶欄杆內的人似有掠過運河畔的臨場感。
- ↓ 運河區:可容量近10噸的水量,這裡也是魚池區。結合魚池與魚缸的綜合設計概念,該池的水面高度超過地面30公分,水漫出地面的設計呈現迷你海洋的視覺感。用馬賽克拼出海底及魚群圖,在前後鏡面反射拉長的錯覺下酷似運河。池內建個袖珍碼頭讓烏龜得以上岸進行日光浴。在8部造浪馬達推動下形塑了一波波的海浪,這裡既是運河也是魚兒水中游的魚池。

- Dow area: Springtime is the best time for getting work done, and this yacht is named the "Spring." The anchor is mounted on the bow, which contains the instrument panel, ship's wheel, helmsman's seat, Morse code lights, and wind vane. There also seats for three people, and children can have fun steering the boat and playing with the Morse code lights.
- ‡ Hull area: Both sides of the hull have long teak seats that can accommodate 12 people. The flowing-water decorative glass troughs on the floor give the yacht a sense of motion. This is where people can get together, or also read, chat, watch TV, or sing karaoke.
- ↓ Stern area: Includes left and right scenic panels and platforms. A small display area here employs the combination of the catch holding locker and aircraft carrier portholes to show the boat's articles. A coffee bar here is paired with a one-piece tank and copper faucet. The stairs and handrail makes swimmers on the vacht feel that they are plunging into the sea.
- ‡ Gunwale area: Gray railings are installed on both sides of the boat. A row of trees is planted outside the railing on the window side of the boat, and there are also plant lights and tree illumination lights, which suggests that the boat is cruising through the Panama canal. The branches of the Hawaiian coconut trees gently brush people passing by, which gives people inside the boat railing the vivid impression that they are sailing through the canal.
- Canal area: Has a capacity of nearly 10 tons of water, and also serves as a fishpond. The water surface in the combined fishpond and aquarium is more than 30 cm above the floor, and the raised pool provides the impression of a small sea. Undersea scenery and schools of fish are portrayed in a mosaic, and the reflections of the water in the front and rear mirrors create the vivid impression of a canal. A tiny dock in the pool lets turtles come out of the water to sun themselves. Eight small wave-making motors create continuous ripples in the water; it is both the canal and a fishpond containing swimming fish.



- → 護欄區:由於水位漫出地面30公分,故採用鯨魚造型的雙層透明玻璃作為護欄,這樣的效果除了有迷你海洋的感覺外,也可讓進門或坐著的人們均能一睹魚兒遨遊景象。
- → 下雨區:魚池上方懸掛以不鏽鋼製作的台灣地圖,在台北、台中、高雄三地各安裝花灑,不定時地灑水讓這裡有陰雨綿綿的日子也有晴空萬里的時光。台灣地圖上方布滿著色彩繽紛的各式水果,讓這兒的景象豐盛多彩,也是客廳的一大亮點。
- ↓ 瀑布區:從高達3米的垂藤樹葉間噴湧而出的轟隆瀑布聲打擾了這裡的寧靜,注入的湧泉滿足魚兒所需氫氣。玻璃後方貼上海洋輸出圖,流下的水幕讓海洋呈現朦朧景色。
- → 天際區:將藍與黑的美耐板裁剪為弧度狀以表現天空雲朵意象,在相鄰的雲朵間嵌入條 燈,在天花板也安裝星光燈,讓這兒的夜空顯得美麗與深邃。同時在天花板也安裝中置 及環繞喇叭與吊扇,以強化船舶客廳的使用功能。
- → 設備區:黏貼海洋輸出圖的玻璃面後方就是置放魚池過濾設備及各式管道的空間,包括兩座魚池全自動生化過濾器以保證水質的最佳狀態,讓魚兒和烏龜擁有最佳的生存環境。所以,要在成片的玻璃上闢出出入門以供日後維修之用。
- → 檢查區:在該池外的隱祕位置闢出檢查口以作為控制補水或進水或排放水,同時從檢查口的地面也可檢視該池是否存在漏水情形。



- ‡ Railing area: Because the water level is 30 cm above the floor, two sheets of transparent glass in the shape of whales are used as railings. Apart from evoking the impression of a miniature sea, this also lets people who are entering or sitting in the boat to watch the fish swimming.
- Rain area: A stainless steel map of Taiwan is hung above the fishpond, and sprinkler heads are installed at the three locations of Taipei, Taichung, and Kaohsiung. The sprinklers occasionally spray water, which simulates Taiwan's drizzly days punctuated with spells of clear weather. Brightly-colored fruit are arranged above the map of Taiwan, which adds to the variety of the scene and creates a bright focal point in the living room.
- Waterfall area: A rushing waterfall emerges at a height of 3 m from amidst the hanging vines and tree leaves, and its sound disturbs the tranquility of the scene. The bubbling water entering the pool helps meet the fishes' need for oxygen. An output image of the sea is placed behind the glass, and the downwardflowing water curtain gives the sea a misty appearance.
- Horizon area: Blue and black plastic laminate sheets cut into curved forms represent clouds in the sky.
 Strip lights are inset between the clouds, and starlight lamps are installed in the ceiling, which adds depth and beauty to the night sky. Central and peripheral speakers and ceiling fans are also installed on the ceiling, and serve to enhance the boat living room's practical functions.
- ‡ Equipment area: The fishpond's filter equipment and piping is installed behind the glass panel bearing
 the output image of the sea. This equipment includes two automatic biochemical filtration units able to
 ensure optimal water quality, and provide the fish and turtles with a healthy living environment. A door is
 installed in the glass panel to facilitate maintenance.
- Inspection area: An inspection port located in an inconspicuous location outside the pool allows control of the water supply and discharge. The floor near the inspection port also allows residents to check that there are no leaks from the pool.

