

篤蒔綠家園

AG HEALTH HOUSE (G7) TAOYUAN | TAIWAN

雅緻住宅事業股份有限公司
AG House



雅緻住宅事業團隊 AG-house 及減法綠建築發展協會，發展台灣防災綠建築構造，「AGS1」¹ 為首棟研發完成的七代實驗住宅。現今台灣綠建築文化已經被扭曲成過度設計，一味增加設備、建材的「偽綠建築」，「AGS1」則反向實踐「減法綠建築」(Simplified Green Buildings)² 的概念。

「減法綠建築」，是延伸綠建築思維，從地域性自然環境氣候來切入，以「Less is More」的哲學，檢視企業產品主導的過度綠建築設計，就建築的環境、構造、建材、生活、裝修，採必要性、永續性及被動式設計為主的綠建築概念。

AGS1 主要理念在於回應台灣市場機制、氣候特性及民居生活空間組成，具安全防災的結構系統，具低碳排、低耗能的綠能構造系統，具健康、舒適的空氣品質，防潮無毒的室裝處理，建構一個以「減法」概念出發的綠好宅。在台灣取得「綠能建築構造」、「防災建築構造」、「防潮建築構」等專利；在防災建築方面，經由構造減重 3/5，整合減隔震基礎，SN 籠型鋼構架，3D 輕質斷熱牆體，達成具防震、防颱、防火、防蟻性能，利用排放係數法估算，較鋼筋混凝土建築構造之碳排放量減少 43%。

The AG-house Cooperation and the Simplified Green Building Development Association develop Taiwan's disaster prevention green building structure. "AGS1" is the first seven-generation experimental house to be developed. In Taiwan, the current green building culture has been distorted into overdesign and the "false green building" which add more equipment and building materials. "AGS1" is the reverse practice of the concept of "simplified green building". "The Simplified Green Buildings", as an approach extends the thinking of green buildings and examining the excessive green building design that currently predominate. Following the belief of "less is more", it puts emphasis on examining the regional natural environment and climate characteristics, and establishes an innovative green building protocol for design focusing on necessity, sustainability and passivity in terms of the surrounding environment, structure, materials, comfort and decoration and finish of the building.

The main concept of AGS1 is to respond to Taiwan's market mechanism, climate characteristics and the composition of residential living space, with a safe and disaster-preventing structural system, a green energy structural system with low carbon emissions and low energy consumption, a healthy and comfortable air quality, and a moisture-proof and non-toxic room. To construct a good house based on the concept of "passive". Obtained patents for "Green Energy Building Structure", "Disaster Prevention Building Structure",



INFORMATION

位置 Location

台灣桃園龍潭區 Longtan Dist., Taoyuan, Taiwan

用途 Type

住宅 Resident

建築師 Architect

劉志鵬 Chih-Peng Liu

陳正宏 Cheng-Hung Chen

基地面積 Base Area

231.4 m²

建築面積 Building Area

82.28 m²

日期 Date

May, 2017

在健康建築方面，台灣地區全年月均溫度在 15-28°C 區間，年均相對濕度高達 81%，導入外氣時重點在於如何處理熱得、濕度及空汗問題；在熱得方面，牆板以 3D 高斷熱牆版為基材，熱傳透值僅 0.25 W / (m² · K)，具外側高斷熱，內側蓄熱的特性，搭配窗戶斷熱窗簾的調控，白天夏天減少熱得，冬天增加熱得的方式；另外運用架高一樓版與地面間的地溫綠能（相較於室外氣溫冬季，高低溫可達 6-10°C）及木炭、活性碳，調和外氣溫、濕度及空汗，再經由抽風導入室內形成一次性空氣的換氣機制。

AGS1 經實測驗證相較於 RC 建築標的，夏冬時室溫可減增 3.5°C，壁溫則減增約 3°C，冷暖房調節速率較 RC 提高 60%，空氣 CO₂ 可維持在 600ppm，冬天不需要除濕機濕度維持在 60%，顯示 AGS1 綠能建築構造的空氣調節效益良好。AGS1 具不易結露、反潮的特性，牆面得以黏貼壁紙而不發霉，使用含水率 13% 以下，天然乾燥處理的無毒檜木及杉木、實竹可以防白蟻，不需架高及使用夾板即可直鋪地板。

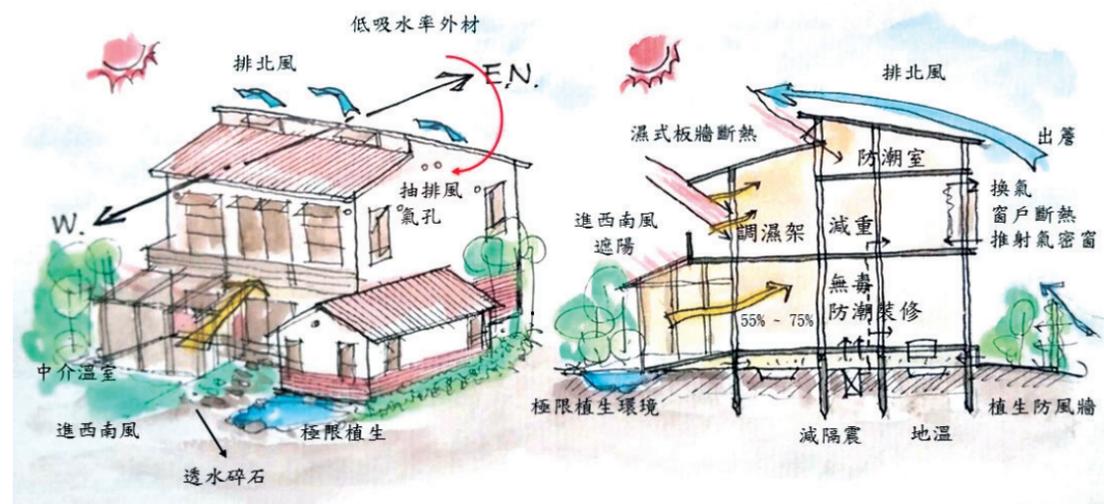
造型方面配合園區採歐式，拱形開窗及簡約的斜頂出簷及花台線板，外玄關、溫室以塑化木構成中介空間，調和周邊環境。三樓陽台朝西南側避開東北強風，可眺望、曬衣、健身，廁所及梯間在南曬面容易維持乾燥且降低熱得，公共空間有

"Moisture-proof Building Structure" in Taiwan. In terms of disaster prevention buildings, the weight was reduced by 3/5 through construction, and also integrated the seismic isolation foundation, SN cage steel frame and 3D lightweight high-quality thermal insulation wall to achieve the performance of anti-vibration, anti-typhoon, fire-proof and anti-termite. It is estimated by the emission coefficient method to reduce the carbon emission by 43% compared to the reinforced concrete construction.

In terms of healthy buildings, the monthly average temperature in Taiwan is in the range of 15°C-28°C throughout the year, and the average annual relative humidity is as high as 81%. When introducing external air, the focus is on how to deal with heat, humidity and air pollution. In terms of heat, the wallboard uses 3D high thermal insulation wall as the base material, and the heat transmission value is only 0.25 W/(m²·K). It has the characteristics of high thermal insulation on the outside and heat storage on the inside. It is matched with the regulation of window thermal insulation curtains to reduce heat during the day and summer and the way to increase the heat gain in winter. In addition, use the ground temperature and green energy between the raised first floor and the ground (compared to the outdoor temperature in winter and summer, the high and low temperatures can reach 6-10°C), charcoal and activated carbon, to reconcile the external temperature, humidity and air pollution are then introduced into the room through the exhaust air to form a one-time air ventilation mechanism.

Compared with the RC building, in summer and winter the room temperature of AGS1 can be reduced by 3.5°C,

減法綠建築概念示意圖



60% 的開窗率視野良好，房間部分均有一大一小窗，自然、採光、通風良好。客廳經由全開型落地窗連結溫室陽台，可調控空間並引入西南風，此外，高齡者及幼兒可彈性使用和室空間。輕食備餐區中島檯面連結餐桌，可將親子、勞作、聚會等活動在餐廳進行。二樓書房及三樓多功能空間則提供讀書、運動、養身、禪坐等使用，房間開架的衣櫥便於整理且避免產生死角。在儲藏工作室部分，經由開架式的鐵架方式便於處理防潮殺菌儲藏及物品整理。和室、梯間、廚房、餐廳地板下方都備有儲藏空間。浴廁為乾濕分離 FRP 整體防水面層不貼磁磚，以防水塑木飾材搭配實木裝修處理。

註釋 1 「AGS1」，AG-house 雅緻住宅事業股份有限公司於 2014 年組成，在台灣開發防災綠建築構造，在整合地溫能構造與健康無毒實木裝修後完成七代工法，首棟建築於 2016 年完成，命名為 AGS1，AG 為雅緻之意 A good house or A global house，S 為 Snail 蝸牛之意（在台灣無住宅者稱為無殼蝸牛，住者有其屋係雅緻住宅創立之理念）。在台灣當下綠建築文化已經被扭曲成無謂的增加設備、增加建材來解決問題，「AGS1」則反向實踐「減法綠建築」的概念。

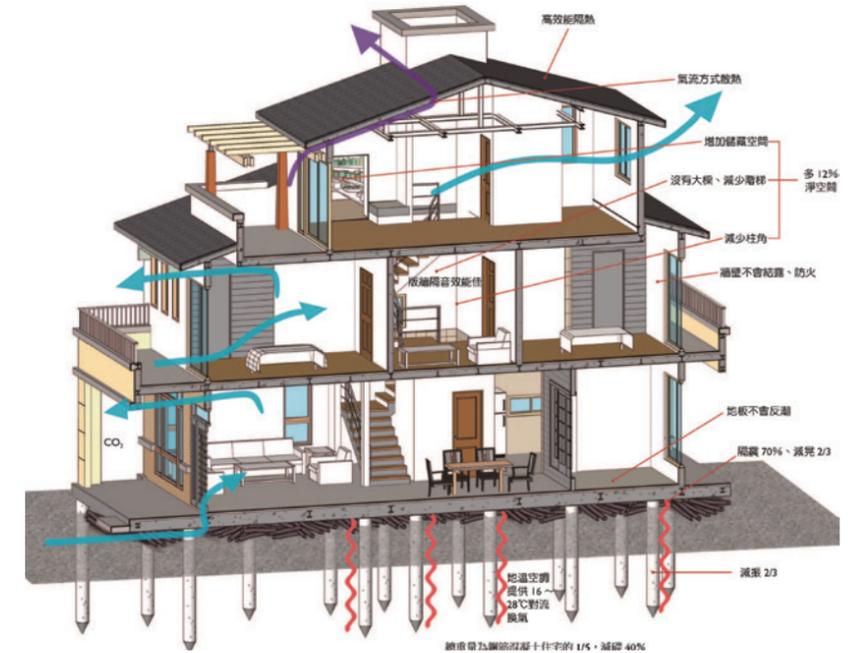
註釋 2 「減法綠建築」，綠建築的思維為環保，理因朝向內斂的發展，而不是一味地增加構材及設備來耗損地球資源，Simplified 英文字義為「簡」的意思，有去繁為簡，減少及內省的涵義，為台灣劉志鵬建築師於 2015 年 6 月所定義。

and the wall temperature can be reduced by about 3°C after testing. The heating and cooling room adjustment rate is 60% higher than that of RC buildings. The air CO² can be maintained at 600ppm, and no dehumidifier is needed in winter. The humidity is maintained at 60% which indicated that the AGS1 green energy building structure has good air conditioning benefits. AGS1 has the characteristics of not easy to condense and anti-moisture. The wall can be pasted with wallpaper without mold. The moisture content is below 13%. Naturally dried non-toxic cypress, solid bamboo can prevent termites. No need to erect and use splints. The appearance design of the house is matched with the European style of the park, with arched windows and simple slanted eaves and flower platform line boards. The outer porch and greenhouse use plasticized wood to form an intermediate space to harmonize the surrounding environment. The balcony on the third floor faces the southwest to avoid the strong northeast wind, which can be used for viewing, drying clothes, and fitness. The toilets and staircases are easy to maintain dryness and reduce heat on the south side. The public space has a 60% window opening rate and good visibility. Each room has one large and one small windows, which are natural, light and well ventilated. The living room is connected to the balcony of the greenhouse through the full-open floor-to-ceiling windows, which can regulate the space and introduce southwest wind, and the elderly children can use the Japanese style room flexibly. The

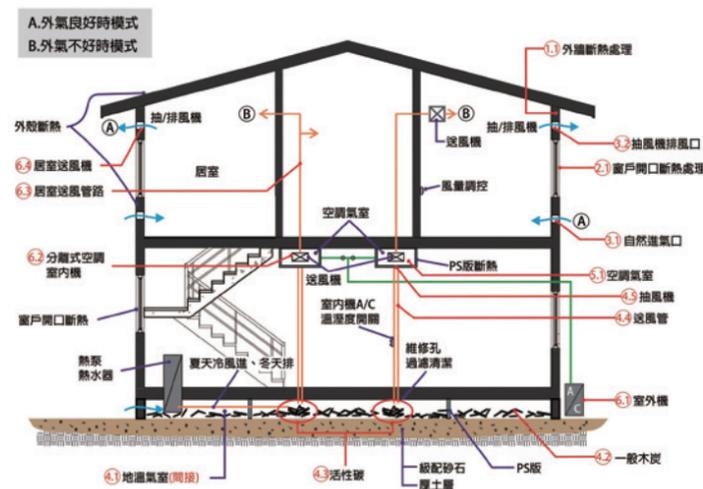
雅緻創新複合構造結構施工



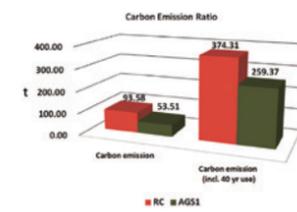
雅緻創新複合構造示意圖



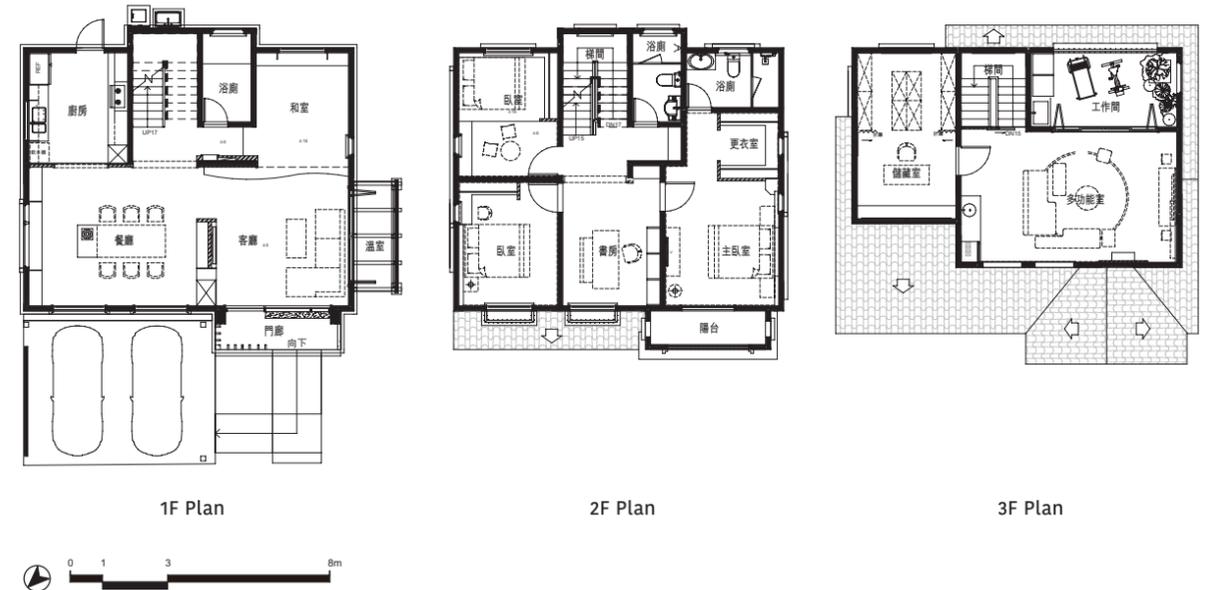
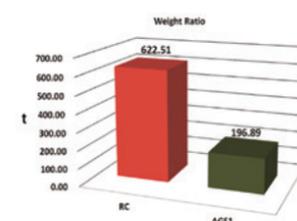
AGS1 構造示意



AGS1 構造與 RC 構造碳排放量對照



AGS1 構造與 RC 構造重量對照



island countertop in the light food preparation area is connected to the dining table, allowing parent-child, labor, and party activities to be carried out in the restaurant area. The study room on the second floor and the multifunctional space on the third floor are provided for reading, exercise, body training, meditation and so on. The open-shelf wardrobe in the room is easy to organize and avoid dead ends. In the storage part, the open-frame iron frame is convenient for handling moisture-proof and sterilization storage and item arrangement. There are storage spaces under the floor of the Japanese room, staircase, kitchen, and dining room. The bathroom and toilet are dry and wet separated FRP integral waterproof surface layer without tiles, with waterproof plastic wood decorative materials and solid wood decoration treatment.

NOTE 1 "AGS1" was formed by AG-House Cooperation in 2014 to develop disaster prevention green building structures in Taiwan. After integrating the geothermal green energy structure and healthy and non-toxic solid wood decoration, the first building was completed in 2016. AG means "A good house" or "A global house", S means "Snail". In Taiwan, the current green building culture has been distorted into a needless increase in equipment and building materials to solve the problem. "AGS1" is the reverse practice of the concept of "Simplified Green Building".

NOTE 2 "Simplified Green Building", the thinking of green building is environmental protection, and the rationale is toward introverted development, rather than ignorantly adding structures and equipment to deplete the earth's resources. "Simplified" means to convert complication to simplification through reduction and introspection, defined by Taiwanese architect Dr. Liu Chih-Peng in June 2015.



通風換氣



空調氣室



活性碳更換口



房間換氣機制

