

## 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」<sup>1</sup> 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)<sup>2</sup> 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 m<sup>2</sup>

建築面積 Building Area

82.28 m<sup>2</sup>

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 / (m<sup>2</sup> · 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 CO<sup>2</sup> 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。

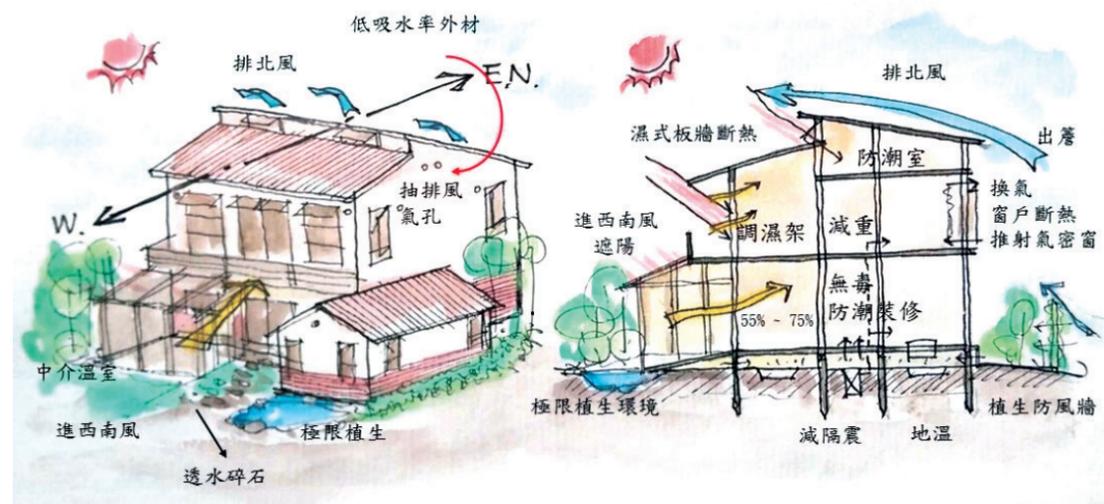
造型方面配合園區採歐式，拱形開窗及簡約的斜頂出簷及花台線板，外玄關、溫室以塑化木構成中介空間，調和周邊環境。三樓陽台朝西南側避開東北強風，可眺望、曬衣、健身，廁所及梯間在南曬面容易維持乾燥且降低熱得，公共空間有

"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/(m<sup>2</sup>.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





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

