

Project

Project Name	MALI VILLA
Project Place	99/153 KAMALA KATHU PHUKET
Project Country	Royal Kingdom of THAILAND
Total Complex Gross m ²	250m ² . High: 8m
Owner	Investment group MALI VILLA Co., Ltd
Architect	BEIJING INSTITUTE OF ARCHITECTURAL DESIGN
E&M Consultant	COLMAN-air THAILAND Co., LTD
Indoor Climate Calculations	Vabi Elements + VA 101+VA 102
Indoor climate	European Standard + Iso7730 + PM 1

Design and Construction period

Design period	2016
Construction Period	2016-2017

General

The existing building is stripped down until column and roof construction in May 2016 , and rebuild on the most advanced insulation European standards.

Double ventilated wall principle with 8 mm reflection insulation, 3 double glass windows and slight doors , 60 mm insulation under the roof layer all pressure proof on 250 Pa over pressure.

The installed heat pump 30Kw is for cooling from the building and up heating from the domestic hot water system that is buffered in a 350 liter hot water storage.

The averaged cooling capacity is less than 30W/m² by full outside condition from 102 Kj/kg (35°C 77% humidity), the heat function deliver 48°C domestic hot water, 1 time every week the temperature increase to 63°C to kill legionella bacteria in the domestic hot water system.

The AHU filter the outside air until 1 PPM and pass a Energy Recovery Wheel with 85% efficiencies and save more than 75% of all the cooling energy need for the building.

The BMS system check the outside air conditions and control the heat pump and ahu to the level they need to make to get a conditions in the rooms from 25°C and 58% humidity (the middle of the comfort zone for humans). Last but not least noise < 30 dBa.

The designed and installed systems are the most Green and energy saving heating- and cooling system in Royal Kingdom of Thailand.

HVAC installation

Total fresh air supply	4,000 m ³ /h
Total exhaust air incl. toilets	3,800 m ³ /h
Number of AHU's	1 AHU ± 4,000 m ³ /h
Energy Recovery	21 KW
Installed cooling capacity	30 KW. (needed 20%)
Heating System capacity	30 KW. (needed 75%)
IVAV terminals	7
Ceiling diffusers	24
BMS web stations	1
Controlled data points	± 280
IP Controllers	10
Security and building automation	
Data and internet	35