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Bahman Al Nadaf, Hot Water Heat Pumps Ltd

## Remuera Family Creates a Splash

Located on a quiet street in the Auckland suburb of Remuera, is a character villa which has recently been renovated. When the owners decided they wanted to add an indoor pool to their home, their architects - Leuschke Kahn Architects - turned to Bahman Al Nadaf at Hot Water Heat Pumps Ltd to supply the heating and ventilation system. With over 30 years in the business, they knew the company's expertise and know-how would provide a green, clean, condensation free, comfortable and warm environment suitable, for the young family in residence.

Having designed a modern purpose built extension at the back of the property to house the pool, the architects needed a solution to control the excessive humidity for the 36m<sup>2</sup> large lap pool (complete with heavy duty pool cover) that they had designed.

## Cost-efficient and custom-built from scratch

Hot Water Heat Pumps Ltd conducted a site visit with the clients, architects and builders (Building and Restoration Services Ltd) to establish the exact requirements for the indoor pool. The family requested that the temperature should be maintained at 29°C - 31°C all year round and that there should be no condensation in the pool facility. Bahman explained that indoor heated pools lose about 70% of heat that could lead to user discomfort and deterioration in the enclosure envelope. He also suggested that a simple extract system would remove a huge amount of heat from the pool enclosure, leading to a higher evaporation rate.

To compensate for the evaporation rate and condensation, Bahman and his team at Hot Water Heat Pumps Ltd suggested a Performance Plus dual purpose unit providing heating, air distribution and ventilation. The system would include condensation controls suitable for covered pools with a ventilation system running when the cover goes off the pool, to ensure there would be no condensation, keeping the atmosphere pleasant and comfortable. When the cover is off, there would be a higher evaporation rate meaning that the heat pump would have to work harder to compensate for the heat loss from the pool and also a higher rate of air heating and ventilation system. The technically advanced unit would be easily able to cope with the extra demand.

All purpose-built parts for the bespoke system were designed and assembled at Hot Water Heat Pumps Ltd's factory in Henderson, New Zealand. The heat pump runs at a cost of 75 cents an hour, if the user pays 25 c kW for electricity, with an additional \$1 per hour to run the ventilation system, (based on 25 c kW) making total running costs of \$1.75 an hour. The equipment for the system is housed in an area attached to the family's double garage, which has easy access for servicing and maintaining equipment.

The turnaround on the project was impressively swift. The initial phone call to Hot Water Heat Pumps Ltd was made in February on Waitangi Day, followed by a site meeting four days later with the architect and builder. After a further fifteen days, the contract was signed and the job was finished by the end of November.

## A change in temperature

The family is now expanding with the arrival of a new baby expected soon and it will be necessary to raise the temperature of the pool to 33°C for the comfort of the new addition. Hot Water Heat Pumps Ltd will be adding a supplementary heat pump to boost the temperature to the required level. Commenting on the project Bahman said, "Adaptability and flexibility are always important considerations on any job and we always aim to ensure that the systems installed can cope with future changes in circumstances."



### SHOWCASE AT A GLANCE

#### Architect

Leuschke Kahn Architects

#### Builder

Building and Restoration Services Ltd

#### Equipment

**Performance Plus Duoheat** model no: 7GP17UB11-1  
**Vent-Air** system comprising of a supply air handler and return air handler  
**Air Distribution** system via ceiling grill air delivery