

Le Schuyllkill Monaco

The Existing Building

Built in 1963, Le Schuyllkill Tower was the first high rise building constructed in Monaco. Occupying a prominent position in Monte Carlo, the residential tower overlooks the principality's Port Hercule with panoramic views south to royal palace, the old town, and beyond to the Mediterranean Sea.

The Schuyllkill is a residential building which sits on a steep site and is accessible from both the Boulevard de Suisse to the North and the Avenue de la Costa to the South. The declivity across the site is considerable at 22m.

Architecturally, the existing building is well adapted to the site and has been configured to benefit fully from the views towards the sea and to manage the steep topography of the site. In plan it is arranged in an open 'U' shape to maximise the number of apartments with sea facing views. All apartments have balconies providing outdoor space.

In section, the building is arranged into 2 distinct parts; the lower part comprising 7 storeys built against the rock face and the upper part comprising 17 storeys but split into 3 individual blocks, each with a vertical circulation core on the North side of the building. There is no horizontal circulation between the 3 blocks above ground.

Programmatically, the lower part of the building contains car parking, cellars, storage, service rooms and technical rooms. The upper part is all residential accommodation ranging from small studio apartments to large 4-bedroom apartments. The existing building provides 188 apartments, 5 service rooms, 145 car parking spaces and 198 cellars for the residents' personal storage.

Structurally, the existing building is a reinforced concrete frame arranged in 2 distinct parts. The lower part (Ground to basement level 7) comprises a single block (35m x 48m) and the upper part comprises 3 separate vertical blocks. The floor slabs in the lower levels are solid concrete whilst in the upper parts they are beam and block slabs with a concrete infill approximately 10cm thick. Covering the concrete in the upper residential areas is a 5cm thick layer of sand, providing effective acoustic insulation between floors.

All load bearing columns run vertically through the entire building. As the entire site is against load bearing rock the foundations are shallow pads and there are no retaining walls around the perimeter.

The building services are distributed vertically, from plant rooms in the basement, through the stair and lift cores and various risers across the floor plates. Generally speaking, ventilation and water distribution are located in risers across the floor plates whilst the core areas contain electrical distribution and waste chutes.

Hot water production, including central heating, is powered through 2 oil-fired boilers and a 30,000 litre fuel storage facility. Hot water distribution is achieved using 4 electrically powered pumps. Each apartment is fitted with individual electrically powered hot water tanks for domestic hot water (bathrooms). Wastewater, grey water and rain water are all collected and evacuated separately.

Ventilation in the apartments is achieved with a "shunt" type system using natural ventilation (Stack Effect). There are 22 ducts distributed across the floor plate and running vertically through the building and extracted at roof level. Internally, the extract grills are located in the bathrooms, toilets and kitchens. The majority of the apartments are dual-aspect allowing cross-flow ventilation to supplement the shunt ventilation system. There is no mechanical air conditioning in the existing building.

There is no mechanical smoke extraction either. In the residential parts, the staircases are naturally ventilated through the facade and in the car park areas there are grills distributed around the perimeter walls providing cross ventilation. There are between 22-26 car spaces per floor, spread over 6 floors.

The main building façade comprises uninsulated single skin masonry blockwork walls with mosaic tiles on the exterior. The glazed doors and windows are extruded, anodised aluminium frames with single glazing. All glazed openings are fitted with roller shutters on the outside. The balconies are continuous around almost all the building's perimeter and are fitted with retractable solar blinds providing shade on the balconies. The façade on the existing stairwells are solid stone louvers with a 50% clear opening to provide for natural smoke extraction.