



Muraba Veil

Public Health Water Quality Treatment Systems:

- The primary water source is the DEWA water supply network, which has been rigorously tested and confirmed to meet international standards for safe drinking water.
- To further refine the water's quality, a multimedia sand filtration system (MMF) is considered.
- This system is designed to provide the residents with clear and healthy water.
- Multimedia sand filtration (MMF) is recognized as a highly effective filtration technique.
- It excels in removing suspended solids, turbidity, and various contaminants from water.
- MMF utilizes layers of diverse materials, including anthracite, sand, garnet, and gravel, each with unique densities and sizes.
- This layered structure creates a depth filter, significantly improving particle capture compared to standard sand filters.
- To ensure the health of the residents, a Copper-Silver Ionization system will be implemented for bacterial protection.
- Copper-Silver Ionization (CSI) is a proven disinfection method for controlling bacterial growth, particularly Legionella, in both drinking and industrial water systems.
- CSI works by releasing copper and silver ions into the water.
- These ions disrupt bacterial cell walls, interfere with their metabolism, and prevent their reproduction.
- This technology is commonly used in settings like hospitals, hotels, and cooling towers for Legionella control.
- This project will employ the same technology to protect residents from waterborne illnesses.
- Unlike chlorine, which quickly loses its effectiveness, copper and silver ions remain active in the water for extended periods.
- This provides ongoing and reliable protection for the residents.

Acoustic Performance:

- Superior building envelope sound insulation – L_{eq} 30 dBA internal noise levels in bedrooms (night-time) achieved even when the building is in close proximity to one of the busiest highways in UAE
- Airborne sound insulation: Separating walls and floors for apartments – $D_{nTw} + C_{tr} \geq 50$ dB which is more stringent than the requirements referenced in the Dubai Building Code considering the luxurious nature of the development
- Impact sound insulation: Separating floors for apartments – L'_{nTw} 53 dB which is more stringent than the requirements referenced in the Dubai Building Code considering the luxurious nature of the development
- Apartment entry doors - R_w 40 dB which is more stringent than the requirements referenced in the Dubai Building Code considering the luxurious nature of the development
- Appropriate isolation from lift shaft walls
- Appropriate / effective sound & vibration transmission control for cinemas, padel courts, gyms, swimming pools
- Sound absorptive treatment incorporated in public spaces for reverberation time control and to improve speech clarity
- Adequate building services noise control – NC 30 in apartments considering the luxurious nature of the development

Air Quality – Outside Air Filtration:

- Fresh air is introduced to each apartment via centralised fresh air handling units located on the technical floors of the building.
- Fresh air passes multiple filtration sections including:
 - Sand trap louvres at the building façade to remove sand particles in the air.
 - Class G4 Panel filters with an average arrestance of 90% when tested in accordance with BS EN 779.
 - Class F7 Bag filters with an average arrestance of 80-90% in accordance with BS EN 779.
 - Air is then dehumidified and dried by passing through a Enthalpy heat recovery wheel, followed by a chilled water cooling coil to reduce the air temperature to 13 deg. C, prior to being reheated via a second heat recovery wheel to 19 deg. C.
- Fresh air is then delivered to each room of the apartment in volumes in accordance with ASHRAE 62.1 and 62.2 requirements, 24/7 to ensure continuous supply of fresh, clean, dehumidified air to all occupied spaces.