



Vacuum Sewer System at the Palm Jumeirah, Dubai

Palm Jumeirah, Dubai installs the Roediger® Vacuum Sewer System as the ideal solution for their sewerage requirements.



Situation

The artificial island complex of Palm Jumeirah, the first of three palm-shaped islands in Dubai, adds approximately 78 km / 48.4 mi of coastline to the country.

More than 2,000 villas have been built on the crown of the Palm on 16 fronds. In 2002 Nakheel, the master developer of the project, was looking for an efficient, environmentally-friendly and cost-effective sewage collection system for this project.

High ground water table and sandy ground would have made the construction of a conventional gravity sewerage system costly and very time-consuming. Many pump stations would have been required, instead of the one single vacuum station.

Solution

After technical and economic comparisons of possible options, the client selected a Roediger® Vacuum Sewer System. The system now has approximately 1,200 Roediger® Type G and Z vacuum chambers, one central vacuum station (the biggest in the world!) and a total sewage network of approximately 40 km / 24.8 mi.

Typically, two villa plots are connected to one Roediger® collection chamber, installed inside the private plot area.

Only one vacuum station serves the complete crown area of the Palm, with an overall population of 23,000 people, making it the largest single vacuum station in the world! The system has been in operation since the beginning of 2007.

Technical Data

Pipe Network:	approx. 40 km / 24.8 mi.
House Connections:	approx. 1,200 Roediger® G- and Z-type collection chambers, including 2.5 inch and 3 inch vacuum valves
Vacuum Station Capacity:	1 central station for approx. 23,000 people
Vacuum Vessels:	4 pcs. with a total capacity of 100 m ³
Vacuum Pumps:	16 pcs. of rotary vane pumps, with a total capacity of 240 kW
Discharge Pumps:	6 pumps, with a total capacity of 111 KW



Centralised vacuum station



Electrical panels, constructed as per local standards



4 vacuum vessels, each of capacity 25 cbm



Roediger® vacuum chamber inside villa plot

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