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## Multi-level interchange at Wadi Adai

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By Conrad Prabhu - MUSCAT — Construction work on the Sultanate's first multi-level interchange has commenced at Wadi Adai in Muscat Governorate. The project, an undertaking of Muscat Municipality, promises to introduce a new level of sophistication to the city's road infrastructure, reminiscent of the multi-bridge interchanges found in major world cities.

Well-known contractor Federici Stirling Batco LLC has been awarded the contract to build the interchange at Wadi Adai at a cost of RO 18.6 million. The project is unique in that it will also incorporate a steel road bridge — a structure that will be constructed at specialist steel fabrication facilities in Italy and shipped to Muscat for erection at site, said Salvatore Simonetti, CEO of Federici Stirling Batco.

Speaking to the Observer, Simonetti praised Muscat Municipality's Roads Department, headed by Abdullah al Saadi, for its innovative choice of design and construction technology that would allow for the smooth execution of the project at one of the busiest traffic junctions in the city. The Wadi Adai junction serves as the city's principal gateway into the wilayats of Al Amerat and Qurayat beyond. City-bound traffic originating from the Al Amerat and Qurayat ends, typically extends for several kilometres during peak hours, underscoring the challenges for the contractor in building the interchange while ensuring that traffic flows are unimpeded.

The centrepiece of the interchange project is a new steel bridge that will soar above the existing flyover at the Wadi Adai junction, creating a first-ever three-level road network at the junction. The steel bridge will be built on concrete pillars that at their highest point will rise to 19 metres above ground level. From the Al Amerat side, the new steel bridge will start from a point abutting the mosque close to the Wadi Adai junction. Soaring above the flyover, it goes around the hillock located on the other side of the junction and connects with the existing Ruwi-Qurum carriageway.

Also as part of the interchange project, a second bridge will be built taking traffic from the Ruwi side over the flyover and into the Al Amerat carriageway in a seamless flow that will significantly ameliorate congestion at this busy junction. According to Simonetti, the second bridge, which unlike the first will be built entirely from concrete, will also skirt the same hillock before it climbs above the existing flyover to merge with the steel bridge. The existing roundabout will also be signalised.

In all, two kilometres of dual-lane bridge structures and access ramps will be a built as part of the Wadi Adai Interchange project, says Simonetti. Special weathering steel, also known as 'Corten Steel', will be used in the fabrication of the girders for the steel bridge. Corten steel represents a group of steel alloys which were developed to obviate the need for painting, and form a stable rust-like appearance if exposed to the weather.

Around 3,000 tonnes of Corten steel will be used in the manufacture of the girders at a special facility in Italy, says Simonetti. The girders will be shipped to Muscat via Port Sultan Qaboos in around 12 consignments for assembly at site. Italian specialists will also be on hand to oversee the construction of a blacktop, consisting of a layer of concrete and asphalt, on top of the steel bridge.

"The incorporation of a steel bridge into the interchange project will significantly reduce construction time, as well as make possible the implementation of the project notwithstanding the heavy traffic flow," says Simonetti. "Because it can be fabricated elsewhere and brought to site for erection, the steel bridge component will minimise impacts to flowing traffic."

Federici Stirling Batco has already begun mobilising equipment and construction personnel for the interchange project. Project Manager Ziad Souaiby, a civil engineer from Lebanon, is heading the project team. Also on hand is a team of steel specialists, led by Giulio Lorenzi, General Manager of Verona-based SCL Construction. Parsons International, the design consultants for the project, are represented by its Chief Resident Engineer, Juan Carlos Peralta.

The project is due to completion within two years. For Federici Stirling Batco, an Italian-Lebanese joint venture, the Wadi Interchange project represents another prestigious road contract under its belt. The company is currently carrying out a number of road rehabilitation projects at Qurum and Qurayat on behalf of Muscat Municipality. In the Governorate of Buraimi, the contractor is executing a major dualisation project for the Ministry of Transport and Communications.