Four rope-less and non-vertical project applications graduated at the Iuav University of Venice.

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VENICE – The students who last year started their master thesis on the application of a rope-less and non-vertical elevator system to the high-rise building type have graduated at the Iuav University of Venice last March.

The research group was composed of 7 students who presented different projects both combined into groups or as individuals.

Two students developed two different projects for the Torri Garibaldi area in Milan. The first one consists of a cluster of residential towers whose circulation is entirely managed by a rope-less and non-vertical elevator arrangement. The challenge of this project was to manage the overall expected traffic between the towers assuming a common hall. It means that all the cabins depart and arrive at the same point, however, they are conceived to travel along different paths and reach all the parts of the project. This thesis wants to underline the big potential of the new transportation system and the consistent reduction of space use thanks to its peculiarities.

Another project, still in the same area of the Italian city, investigated how to combine a public transportation together with a private one within a mix-use building through the application of the new technologies. The student conceived the circuit as a loop metro line with predetermined stops according to the services and the functions of the building. Along the same circuit but with different cabins and separated loading and unloading areas travel also the residential cabins that bring people to the apartments. The main issue, in this specific project, has been the designing and the configuration of the core and the lobbies since that they have to be separated but connected since that belonging to the same building. The goal was reached thanks to the capability of the system to run various cabins along the same path and to the possibility to move horizontally.

Moving to the east side of the word, another student studied a 300-meters tall tower to be placed within the University campus of the city of Seoul. According to the early studies undertaken, the student identified an explicit need for that area: student apartments and related services. From here the idea of the tall building containing the maximum number of apartments of different size and type. In order to occupy the less possible space with the service core, she studied an interesting dispatching strategy made possible through the application of the rope-less and non-vertical elevator. She designed an arrangement to combine within the same shaft both an express and a local service. The outer lines of the bank (one up-warding and one down-warding) act as express lines. Thanks to the horizontal transition the cabins can switch from those to the central one where they perform a local service, stopping at each floor and serving the calls. It has been a very interesting challenge for the student together with the definition of a relative appropriate lobby configuration.

Finally, a group of three students, designed two tall buildings linked at different levels by sky-bridges and crossed both vertically and horizontally by the new elevator system. It comes of two towers along the shore of the Michigan Lake in Chicago. The towers welcomed different function interconnected each other at different levels through the use of equipped sky-bridges, viable both by foot or inside the cabins of the rope-less system that travel within them. The students designed different possible solution to combine the transportation system and the architectural space, as this short video clearly presents. The different functions welcomed by the towers are easily managed by the new system that here acts more as a urban transportation system, even if in a vertical direction.

The topic of the research project has been appreciated by the judging commission both for the novelty of the topic and also for the interesting results reached. Moreover, the possibility to simulate the application of the rope-less and non-vertical elevator system to those project – that can be considered as effective case studies – has been very useful for the progress of the research.