



**THOMAS RICHEZ**

is a qualified architect, a graduate of the École Polytechnique, a civil engineer and urban planner from the École Nationale des Ponts-et-Chaussées. He heads the architecture firm Richez\_Associés.

**JEAN-YVES REYNAUD**

holds an engineering degree from the École Nationale Supérieure d'Ingénieurs de Constructions Aéronautiques. After serving in the Tram Projects Department for ten years, working on French and international projects, on 1<sup>st</sup> March 2013 he became Director, Regional Branch Offices for SYSTRA's France Region.



**OUTLOOK**

**What does the future hold for our tram?**

At a time when most French cities with the capacity for a tram system have already acquired one and SYSTRA is targeting strong international growth, *On Track* talked with two experts who discussed this topic: "Tell me what the future holds for trams, and I'll tell you who to sell them to".

**The future of trams: what springs to mind?**

**Thomas Richez:** A little over 30 years ago, if someone had said that trams were a transport mode for the future, everyone would have laughed! These days, in France, practically every city with a population of 200,000 has a tram network. So there isn't much opportunity for further growth. But as accessibility creates more density and density generates new demand for accessibility, there are still things we can explore. The authority for Greater Bordeaux, for example, is putting together a major urban development plan built

around its tram network and an expansion of the network. Elsewhere in the world, things are different: the primary task, in my opinion, is to target cities where pedestrian traffic is predominant, because trams give pedestrians access to a wider geographic area.

**Jean-Yves Reynaud:** It's undeniable that the major growth potential is not in France anymore but in places like South America, the Middle East and Central Asia—areas that spent years developing heavy transport modes and are now becoming more interested in soft modes. Trams can be an added tool for ending

**The SYSTRA director**

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Director, Regional Branch Offices for SYSTRA's France Region

the "all car" era in big cities that are choked with traffic. There are also emerging cities that missed out on their "metro moment" for lack of money but can now muster the funding for a tram.

**What does that mean for SYSTRA?**

**J.-Y. R.:** Whatever the location, we're going to need to do some in-depth study, in advance of the tender process. That's because you might say there are two types of tram systems: a "functional" tram such as you might find in Belgium or Germany, and a "French-type" tram that's really a tool for urban development.

**T. R.:** You need to know how to sell both of them, while helping the client see the value of going beyond the realm of just transit. I do see one hurdle, though: the "French-type" tram exists because here in France, the people making decisions about urban development are the same people who make decisions about mass transit. Elsewhere, that isn't necessarily the case.

**J.-Y. R.:** In order to sell a tram network, you need to be thoroughly conversant with local policies; you have to meet architects in the country and change mindsets. That's especially true as needs and expectations evolve, partly as a result of globalisation, and partly in response to some major success stories, such as the Bordeaux tram or the one in Casablanca.

**THE EXAMPLE OF CASABLANCA**

**A twofold achievement**

**T**he Casablanca tram, which began service in December 2012, now serves as a benchmark for others. First, because of its length (a 65-metre double tramset) and high capacity, and second, because its construction represents a true achievement in terms of both cost and timeframe. It was thanks to the ongoing involvement of Casablanca Transport and local authorities in particular that the city was able to meet the challenge.

**Simplicity and speed**

Maintaining standards, modernity and quality that are at least equal to what you could find

in Europe, SYSTRA was successful in adapting to local constraints. Through a combination of quality design and appropriate engineering decisions, the system's cost per kilometre could be kept well below that of a comparable system in France, and without sacrificing any of the project's signature features. Alongside lower labour costs and an efficient tender process, the Group and its partner, Richez\_Associés, focused on simple and robust materials and design. The exposed aggregate concrete used for the tram platform offered three advantages: aesthetics, durability and quick installation. The latter was an

important factor: the goal of the project was to build a 30-km tram line in 24 months—half the time that such a project would require in France. How was it accomplished? Partly by working simultaneously on multiple fronts, with an accordingly larger workforce, but also thanks to less restrictive administrative requirements along with neighbours and retailers who were unaccustomed to mounting protests.

