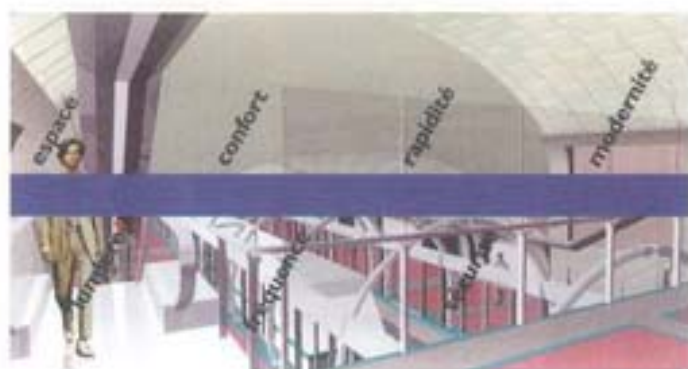




M é t é o r



Automated, fast, futuristic: the Paris Metro's brand-new Line 14 can carry up to 40,000 passengers an hour. And it's driverless too.....

It could be a scene from *Duel*, the chilling film where a crazed driverless truck mercilessly hunts down a terrified car driver. Being tyrannised by an out of control machine was one of the great fears of the last century, a fear that has been exorcised once and for all by the Paris Metro's latest underground line.

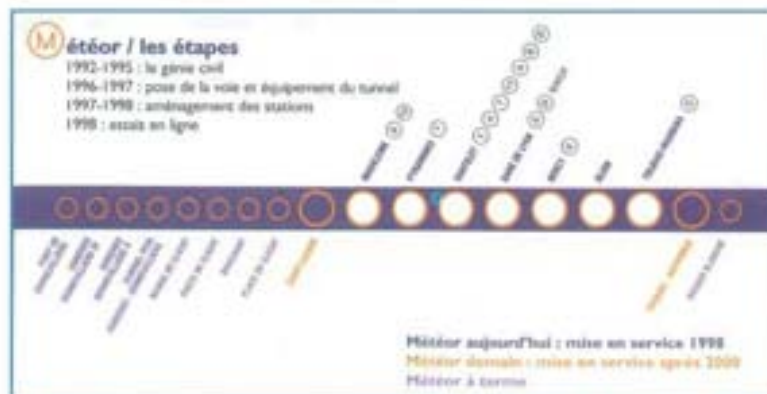
75 years after the last metro was built comes the revolutionary Météor project (Metro Est Ouest Rapide) which has no driver at all. No human driver anyway. In fact, the metro carriages that link the Rive Droite with the Rive Gauche are actually driven only by a microchip embedded in an electronic brain, which is capable of synchronising the stops and warning of any breakdowns or problems.

Opened on October 15 1998 by Jacques Chirac, this formidable system runs through a new tunnel along the Seine and boasts very high standards of quality and safety. And it looks very, very good too. Financed by seven billion Francs from the

public purse, the Météor covers the seven kilometres between the Madaleine and the new Bibliothèque François Mitterrand in just 12 minutes. The trains, designed by Roger Tallon, the man behind the TGV, do not have separate carriages, but consist of one long aluminium passenger car which, thanks to the fact that it doesn't have a driver, allows passengers a glimpse of the tortuous tunnel as they fly through it.

Sorry to get there

This avant-garde piece of technology clashes somewhat with the





old metro which dates back to 1900. Ultramodern granite walls and comfortable steel and wood seats stand out beside the famous cast iron and glass entrances designed by Hector Guimard for the World Fair. Each is a creature of its own time, taking us on a journey through time as well as space and bearing witness to the rapid technological developments that took place between the start of the last century and the threshold of the third millennium.

As the world's first automatic line capable of carrying up to 40,000 passengers in one direction in a single hour (as compared to the normal 10,000), the Météor is part of a wider project which will see it extend south towards Les Olympiades to improve the transport network in the 13th arrondissement, one of Paris's most

densely populated areas. Naturally enough, the new technological miracle immediately attracted the attention of the locals. In fact, for its inauguration, RATP, the Parisian Transport Body, invited the city's citizens to abandon their cinemas and museums to admire the latest addition and its Bernard Kohn-designed stations, free of charge. Designed as part of "a project

which included a social, almost political, aspect, in which the metro, a place through which men and women from every stratum of society pass, becomes an art form, a piece of design, a piece of entertainment," the stations are made from avant-garde, graffiti and vandal-proof materials, such as granite, polished cement, steel and synthetic resins, all flooded with soft, warm light. The wonderfully silent trains are complete with onboard video surveillance and zip along on their rubber tyres at 40 km/h (as against the 20-25 of the normal métro),



arriving at the stops every two minutes. The special revolutionary remote controlled automation system or SAET was developed by Matra Transport International.

The new line also symbolises cultural activity. In fact, back-to-back programmes offer passengers pleasant snippets of entertainment, with a guaranteed 30 events per year. The National Contemporary Art Fund is also in charge of managing a series of temporary exhibition spaces. The walls are adorned with a veritable constellation of greetings in all of the languages of the world, all with one message: welcome.

Comfort and safety

The stops were designed to offer

PHOTO 3



passengers the kind of comfort and safety features they wanted, such as bright spaces, larger platforms, and pleasant surroundings. By day, each station is characterised by a triumphant, beautifully-lit 25-metre high space in

PHOTO 4



PHOTO 6



PHOTO 5

which a "metal serpent", a suspended passageway built by the Eiffel Company, carrying electricity cables, video cameras, and lights, guides passengers from the mezzanine to the platforms.

In order to prevent accidents and suicide attempts, the platforms on Line 14 are protected by transparent Plexiglas doors which only open as the train arrives, offering a very high standard of safety. All taken care of by 240 virtually invisible employees who work almost round the clock from five a.m. until one a.m. to ensure that everything goes smoothly. The architects in charge of the project have decorated Line 14 very creatively indeed and designed the stations using high quality, low maintenance, vandal-proof materials. Of the total of seven stations, six were floored with

reconstituted marble installed using GRANIRAPID, KERAPOXY P, and MAPEFLEX PU21, all very technologically advanced systems.

A fast, quality finish

In order that the stations could go into service immediately and be able to cope with the 62,000 passengers per hour that would pass through them, over 17,000 square metres of 30X30 and 60X60 cm marble was installed using GRANIRAPID, a fast-setting two-component shrinkage-free system with rapid hydration which also offers excellent adhesion to all the most difficult substrates, plus good resistance to impact, vibration, temperature changes, wear and tear, and dilute chemical agents (photos 1

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and 2). Because of the restrictive nature of the project which required joints to be filled with an exceptionally adhesive product with top class chemical and mechanical resistance which would also be easy to clean and work with at low temperatures, it was decided to use KERAPOXY P, a two-component, acid-resistant epoxy sealant (photo 3). The expansion joints were sealed using MAPEFLEX PU21, a two-component, self-levelling polyurethane compound which once dry (i.e. within around 24 hours), becomes elastic and heat and water-resistant (photo 4). MAPEFLEX PU21 also offers excellent mechanical and scratch-resistance properties. It remains almost unaffected by a wide range of temperatures (-30°C/+80°C). The combined KERAPOXY P and MAPEFLEX PU21 system guaranteed flooring that was also highly resistant to static electricity and the associated phenomena. The Météor rapid transport system stations also offered us the perfect opportunity to perfect our products and processes and thus contribute to rapid technological progress (photo 5 and 6).

The technical Data Sheets for the products mentioned in this article can be found in Mapei binder no. 1, Ceramics Line.



TECHNICAL DATA

Météor (Metro Est Ouest Rapide):
Paris (France)

Year: 1998

Commissioned by: RATP (Parisian Transport Body)

Design and direction: Bernard Kohn, architect

Materials: Reconstituted marble (30X30 and 60X60 cm), Quarella

Marble-installation products:
GRANIRAPID
KERAPOXY P
MAPEFLEX PU21

Tile laying company: Kuhn de Troyes

Mapei co-ordinator: Philippe Latrace

