



Olympic Metro Athens

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# Metro Athens The Solution to Traffic Congestion in the Greek Capital



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Athens is not only the capital of Greece. With over 3.3 million inhabitants, it is – even without its suburbs – one of Europe's largest cities as well. Automobiles make up roughly 75% of the overall traffic volume. Between 1970 and 1986 urban public transportation doubled, while the number of cars rose fivefold. And the demand for faster and safer transportation is still increasing.



The problems created by this demand can only be solved by installing additional urban transit systems. A step in this direction was the introduction of exclusive traffic lanes for the city's buses. Still, new and expanded mass transit services are needed to provide the necessary transport capacities.

Only an efficient mass transit system can save the Greek capital in the long run from a total traffic collapse. So it's no wonder that the construction of such a system is subject to very high standards.

Modern, powerful, and spacious vehicles will help the city to cope with its extreme traffic density.

For Athens, the subway constitutes the ideal transit system.

## A Metro for Athens – So Traffic Can Get Moving Again

Reducing private transportation in a historically significant city such as Athens, without sacrificing more space, is only possible with an underground rapid transit system – a metro. The relatively short distances between subway stations have to be covered in minimum time and with maximum safety.

Subway technology is noted for its exceptional flexibility. Passenger capacity can be readily increased by deploying extra trains and raising the frequency (i.e. shortening the headway). When metro lines 2 and 3 start revenue service, they will carry up to 76,000 passengers every hour. A variable timetable is envisioned; that means around-the-clock operation can be provided if necessary.

Although designed for a top speed of 80 km/h, Metro Athens will still be extremely fast at an average cruising speed of 30 km/h. Environmental aspects are catered to as well; system power consumption has been cut by as much as 40% thanks to the recovery of brake energy.

The strengths of Metro Athens:

- Performance capability,
- Cost-effectiveness,
- Safety,
- Comfort,
- Punctuality,
- Reliability,
- Environmental compatibility.

The concept for the construction of these new lines is firmly based on the good field experience and public acceptance with respect to the existing metro line 1 operated by ISAP.

## Know-how and Competent Partners – Vital Factors for any Turnkey System

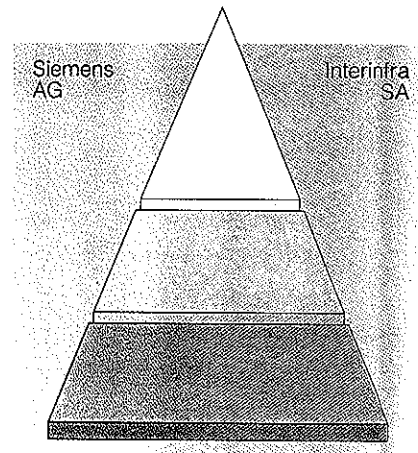
The winning bidder in the international invitation to tender for the turnkey construction of lines 2 and 3 was Olympic Metro Athens, a group of 25 suppliers from Greece, France, and Germany under the leadership of Siemens AG and Interinfra SA.

The contract was awarded by the Ministry of Environment, Urban Development and Public Buildings, who assigned responsibility for realization of the project to Attiko-Metro Ltd. (under Bill No. 1955 dated July 18, 1991).

The two leaders of the group combined their general contracting know-how to form a well-balanced scope of delivery and services. As a result, the various supply lots have been integrated into one complete, fully operational, turnkey metro system.

## Project Management – Experience and Computer-Aided Planning Ensure Success

Project management has been placed in the hands of specialists to coordinate the activities of all the group members. Vast experience gained internationally in the construction of turnkey mass transit projects and computer-aided planning are conducive to short construction periods and minimum inconvenience to the citizens of Athens.



- 1 Project management and coordination
- 7 Supply lots
- ▣ 25 Suppliers

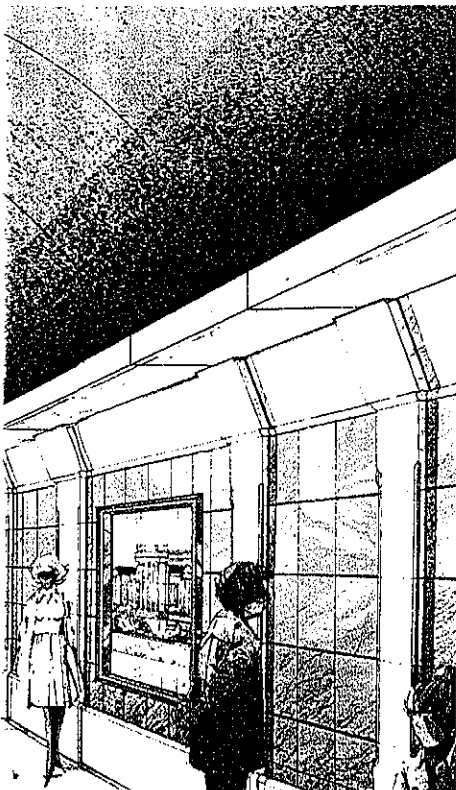
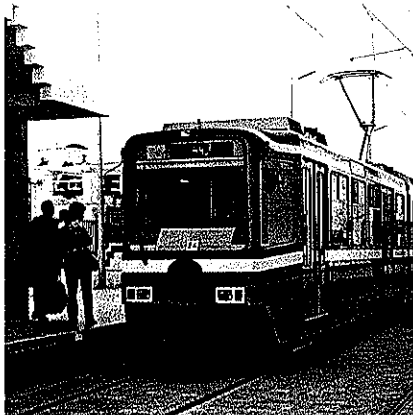
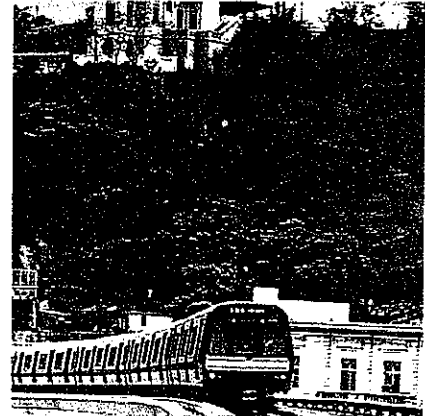
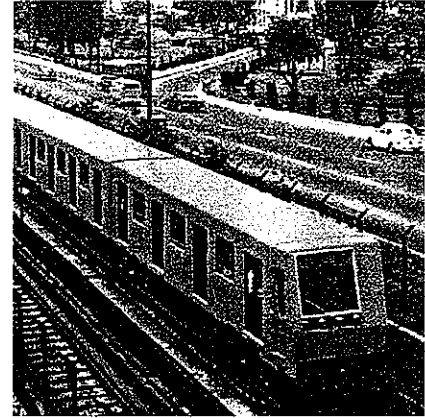


# References

We plan and manage projects, integrate systems, assure quality, secure financing, and train future operating personnel. In the process, the complex parts become a complete turnkey system, the countless ideas a uniform concept. In the end, everything fits together because everyone has pulled his weight – that's success through synergy.

And we've proved it in Athens, Tunis, Medellin, Cairo, Atlanta and Caracas. Supply and installation are one thing, but determining the sum of the whole is something else.

Because project management gives us the overview from preliminary design to ultimate completion – the very basis of our working with you.





# Group Members and Activities at a Glance

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## **Engineering Works**

Sogelerg Ingénierie  
DE-Consult  
A.D.K.  
Hamburg-Consult  
Société Générale de Technique et d'Etudes  
Berliner Verkehrs Consulting  
Lahmeyer International

## **Civilworks and Trackworks**

Sogea  
Hochtief AG  
Spie-Batignolles  
Meton SA  
Aegek SA  
Domika Erga  
Dumez International  
Cegelec

## **Electromechanical Works**

Siemens AG  
GEC ALSTHOM  
MAN GHH  
Cegelec  
A.E.G. Westinghouse  
Spie-Batignolles  
Siemens AE  
Siemens Viomichaniki AE  
CGA HBS  
JS Telecom  
CSEE Transport

## **Overall Coordination**

### **Group Leader**

Siemens AG  
Transportation Systems Group  
Werner-von-Siemens-Str. 50  
P.O.Box 3240  
W-8520 Erlangen

### **Co-Leader**

Interinfra SA  
16, rue de la Baume  
F-75008 Paris

## Chengdu seeks metro funds

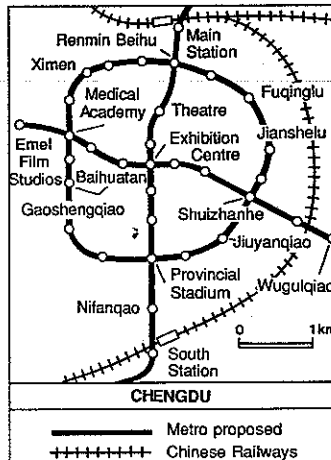
THIS MONTH sees the formal unveiling of plans to build a three-line metro network in Chengdu, capital of China's Sichuan province. The 20 km network is costed at 17.8bn yuan, of which the initial phase is expected to require 8bn.

A feasibility study being drawn up by the city for approval by the State Planning Commission envisages construction of three lines. A 5 km north-south route linking Chinese Railways' Main and South stations would connect in the city centre with a 6 km east-west route from Wugulqiao to the

Emel Film Studios. The third route would form a ring beneath the main orbital boulevard surrounding the central area. At a later date the metro would be connected to the airport and peripheral industrial zones by surface light rail lines.

Vice-Director of the Chengdu Planning Commission Zhou Lirong anticipates that the metro will be funded by a mix of public and private finance. 'We will link property development and subway construction in order to raise the rate of return for foreign investors', she said.

Initial soundings will be taken



among property developers at an international trade fair in Hong Kong later this month. □

## Docklands picks prime contractor

ON MARCH 11, London's Docklands Light Railway announced that Brown & Root Projects Ltd had been chosen as Prime Contractor to manage its upgrading and expansion programme. Under the £30m three-year contract, a joint venture of Brown & Root and Booz, Allen & Hamilton (BBJV) will oversee completion of DLR's 8 km Beckton extension, installation of Seltrac signalling and automatic train control, and commissioning of the 70 B90 and B92 cars. The last of these was handed over by Bombardier Eurorail at Brugge on March 10. DLR staff will be left free to run the railway.

BBJV must improve DLR's operational reliability to at least 97%. Payment milestones include a 30-day System Performance Demonstration after two years and a 2 million train-km Extended Reliability Trial which will take six months. The ultimate reliability target is 98.5%.

The Beckton extension is expected to open in October as a shuttle from Poplar. The line is being equipped with Seltrac, and through trains cannot start until the initial network is converted in March 1994. A series of weekend shutdowns will be needed to test the new signalling before the changeover.

Royal Assent is due shortly for a 4.5 km extension to Lewisham, and DLR Chairman Sir Peter Levene is hopeful that a private finance deal can be put together to fund the £130m scheme. □

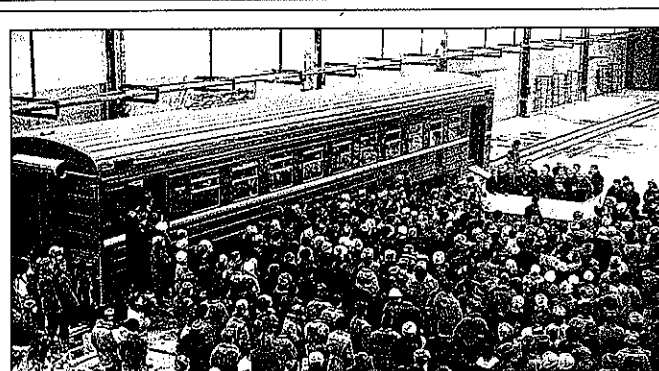
## Two-year Stadtbahn upgrading

PASSENGERS using the elevated east-west Stadtbahn in central Berlin face two years of disruption whilst the route is reconstructed in 1994-95. S-Bahn trains will continue to run, but long-distance services from the west will terminate at Zoo and those from the east at Hbf.

Plans unveiled last month envisage the main line tracks will be out of use for 12 months. After this they will be used for a year by S-Bahn services whilst the

parallel local tracks are replaced. During this time trains will not call at stations with only S-Bahn platforms.

Because of the Stadtbahn renewal works, InterCity Express trains will not run to Zoo in May as planned. ICs from Hannover via Magdeburg will be routed around Berlin's southern ring to Lichtenberg via Schönefeld Airport, with a connecting shuttle from Lichtenberg to Hbf and Zoo. □



Railways Minister Gennady M Fadeev was at the ceremony held at the Demikhovo Machine Plant to mark completion of its first four EMU cars (RG 3.93 p125). Also present were Moscow Railway President J Paristy and G Khiza, Vice Prime Minister of the Russian government

## Meinfesa scoops Valencia order

FERROCARRILS de la Generalitat Valenciana has awarded a letter of intent to GEC Alsthom subsidiary Meinfesa for supply of 18 three-car trainsets for Valencia metro Lines 3 and 5 which are now under construction. The 8.2bn pesetas order was announced by Valencia's Director of Public Works & Transport

Eugenio Burriel on February 23, when he unveiled a mock-up of the vehicles.

FGV selected Meinfesa in the face of three alternative bids from CAF. Meinfesa, which is to be renamed GEC Alsthom Transporte, has several factories in Valencia, and around 80% of the work will be done locally. □

## Calcutta progress

ANOTHER 1.6 km section of the long-delayed Calcutta metro was expected to open last month. Railways Minister C K Jaffar Sharief announced in February that the Belgachia - Shyam Bazar section was almost complete, and that the 6.5 km gap between Esplanade and Belgachia would be plugged by March 1995. The first section of line opened in 1986, but tunnelling problems under the city centre have put completion back by five years.

A southern extension from Tollyganj to Garia and construction of a second route linking Sealdah and Howrah main line stations have been recommended by Rail India Technical & Economic Services in a study of ways to improve metro patronage. □

## Airport extension

TRAINS began running to Fukuoka airport on March 3 when the Japanese city opened a 3.3 km extension of metro Line 1 from Hakata. Journey time between the airport and the JR interchange at Hakata is just 5 min, and air passengers can reach the city centre in 11 min.

As well as the metro service, Line 1 carries through trains from JR's Chikuh line every 15 min, providing a direct link to Nishi-Karatsu.

★ Osaka opened a station at Tengajaya on its Sakaisuji metro line on March 4 to serve parts of Nishinari Ward, 1.5 km beyond the station at Dobutsuenmae. □

## T-bane buys LZB

STORSTOCKHOLMS Lokalfrik has awarded a DM90m contract to Siemens AG for renewal of cab signalling and train control on the Green metro line in the Swedish capital. Replacement of equipment dating from 1950 is to be completed by 1997.

SL has chosen Siemens' LZB 700 continuous ATC, which can cope with closer headways than the present system. Six interlockings and a new control centre will be built, and the trackside equipment installed without interruption to train services. LZB is expected to cut average journey times and reduce operating costs. □