

## **How to Remove Lorries from Cities – Freight Tubes**

**By Noel Hodson**

One of the biggest challenges for traffic removal in cities is how to move freight around cities. Even where general traffic is removed, goods still need to circulate. Freight Tubes, otherwise known as Foodtubes or 'The Transport Internet' are a prize-winning proposal, not yet in production, to replace lorries in urban areas. The system would load cargo into capsules, about the size of a large man, and send them through pipelines using Linear-Induction-Motors, guided by traffic-management software. In theory, freight tubes could be installed anywhere and linked together in circuits to enable a capsule to travel from, say, Rome to Aberdeen – without intervention at any stage. The energy costs per Capsule-Journey are less than £3. We have applied for \$10 million to build a full-scale prototype.

Our team have worked with TESCO, OCADO, CARREFOUR and other major carriers, on cargo road-traffic flows; resulting in a data-share agreement signed with the TESCO Transport Director. Their detailed data, when analysed, was used in talks with Croydon Borough Council, who experience two and sometimes three road-gridlocks each week-day, causing street-level pollution. The food, or more accurately, the "supermarket goods", for Croydon's 130,000 households, occupy 700 lorry and van journeys per day. Other non-household goods for factories, offices, colleges and institutions are estimated to double that number of goods-vehicle journeys; some being empty vehicles returning to depots. Replacing these vehicles with our proposed Transport Internet Freight Tubes would halve the traffic "footprint" on the roads and streets – effectively doubling the road-space.

The Transport Internet would remove half (50%) of all road, rail, air and sea cargo transport, by loading goods into lightweight 1 x 2 metre capsules – the same size as the "goods-cages" loaded onto lorries by Tesco, Sainsbury etc. – and sending them through 1.3 metre pipes; such as the oil, gas and water industries use globally. The green-energy cost saves more than 80% compared to equivalent traditional transport. The pipes are installed by boring machines in 100km loops well below existing services, even where necessary below the London Tube system – and the capital expenditure is far less than making and maintaining roads and streets of equivalent capacity. The cargo-capsules run day and night, weekdays and weekends, on electricity – silently, unseen and pollution free. The system concept won 2nd place in The St. Andrews Prize for the Environment 2008.

We have to eat. We have to have goods delivered. We can free our streets, motorways and public spaces by sending the good underground; freeing the surface, with clean air, for people. Ask your local council to install a Freight-Tube-Circuit immediately. How much? We worked it out for Croydon, about £300 million to serve 130,000 families. The Circuits link together to eventually serve all regions. The system to serve Greater London is set out in this Excel forecast.

Globally, there are 500,000km of such large-diameter pipes which go overland, through mountains, and under-seas and rivers. Freight-Capsule-Pipelines might alleviate the feared long queues of lorries at our ports, should Brexit prove problematic.

**CONVERT**  
**Lorries, vans,**  
**containers, roads,**  
**rails, fuel tanks**  
**and drivers...**

**Into pipelines and**  
**Cargo-capsules.**

**Free the surface**  
**for people.**

**Put freight**  
**underground.**



***“92% of the diesel or energy moves the vehicles.  
Only 8% moves the cargo. Reverse the equation!  
Clear the roads. Turn trucks into Pipelines”***

**EVERY LORRY  
Carries up to  
1,000 lbs of fuel...**

**... and a driver,  
who dines on  
ROADKILL,  
especially  
Hedgehog  
Sandwiches.**

**HGVs cause 80%  
of road surface  
damage.**





**STREET OF SHAME – Oxford Street is the most polluted street on Earth**



© Alex Lentati


**STREET OF SHAME – Oxford Street is the most polluted street on Earth.  
Freight deliveries contribute to the environmental damage.**

**Transport Economics Telework Environment**

**Reduce congestion by 3% To save 40% fuel.**  
CATRAL - ISLE DE PARIS

**2 hours queuing Reduces to 1 hour. Saving fuel, exhaust, noise, time & frustration.**

*La Route Peripherique*



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Copyright Noel Hodson 1997 & 2000 Telework Studies

**In 1997 Paris reduced congestion by just 3% and saved 40% pollution.  
FREE FLOW – THE TRANSPORT INTERNET replaces half the freight vehicles.**

## ENERGY SAVING PIPELINE CAPSULE GOODS TRANSPORT

"T



### THE TRANSPORT INTERNET™

Incorporating The - Foodtubes™ Project

ood".

**PROPOSITION:** 92% of the energy only 8% is used to move the goods on road vehicles (HGVs) with light

distribution, processing and food-production centres – i.e. by changing the existing logistics industries - that billions of litres of fuel and up to 18% of the CO<sub>2</sub> added to the air each year, would be saved. No pipeline-capsule system on this scale exists. This project will create a new energy-efficient industry and reduce the costs of food and other goods.

ket goods, is spent on moving the vehicles; each of the concept that by replacing heavy trucks directly to and from loading bays in shops,

Civilization's heaviest, vital, daily cargo is water. Who would scrap water pipelines, put the water in tanks & bottles and transport it by road?

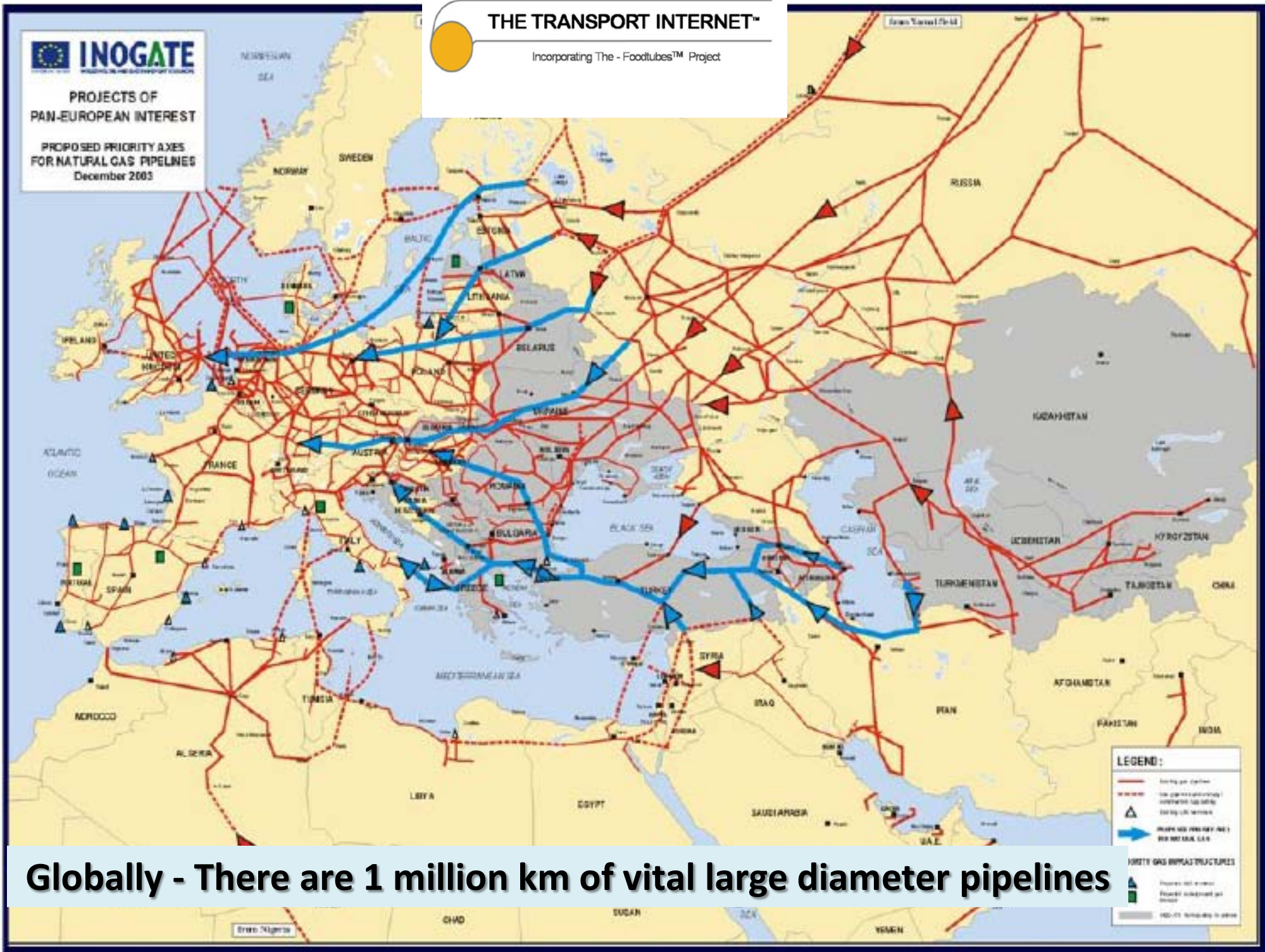
One of our most valuable and volatile cargos is oil (at \$88 a barrel) and gas – carried thousands of miles through difficult territories, in pipelines.

Our daily bread is as vital as water and as valuable as oil.



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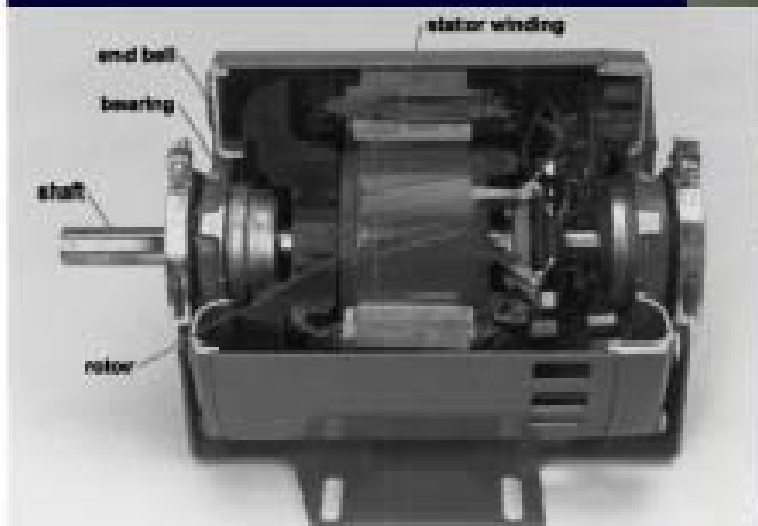
**If water came in trucks – every road would be gridlocked.**



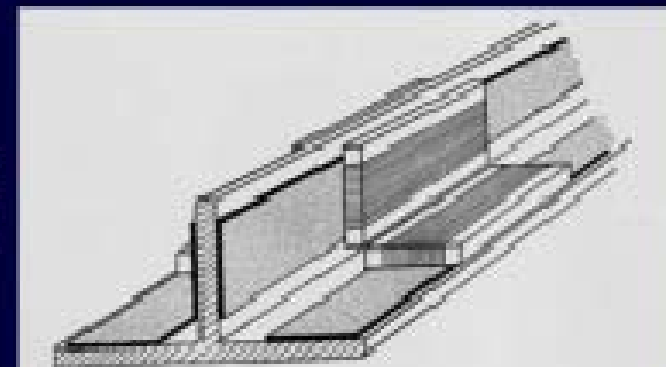
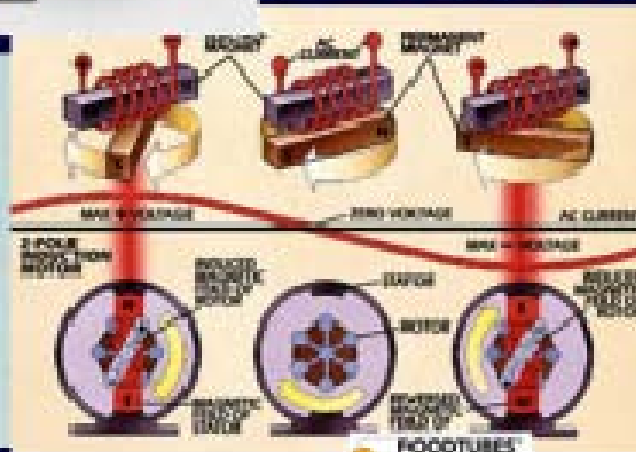
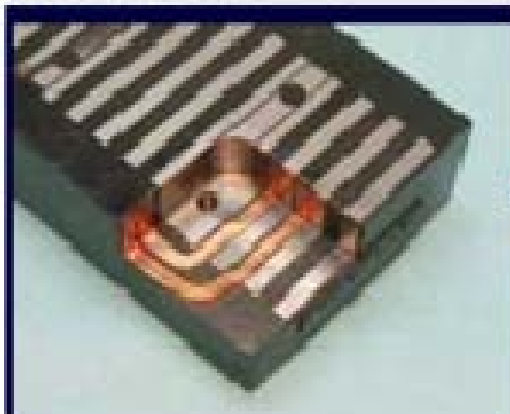
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Linear Induction  
Motor.  
A LIM  
is an electric  
motor  
flattened out.



Instead of going  
round & round;  
it pushes things  
forwards (and  
backwards)



**LIMs are  
very reliable  
& powerful.**

**0 to 100 kph.  
in 2.2 secs**

**LIMs are  
used in  
exciting  
ways.**

**THE TRANSPORT INTERNET™**

Incorporating The - Foodtubes™ Project



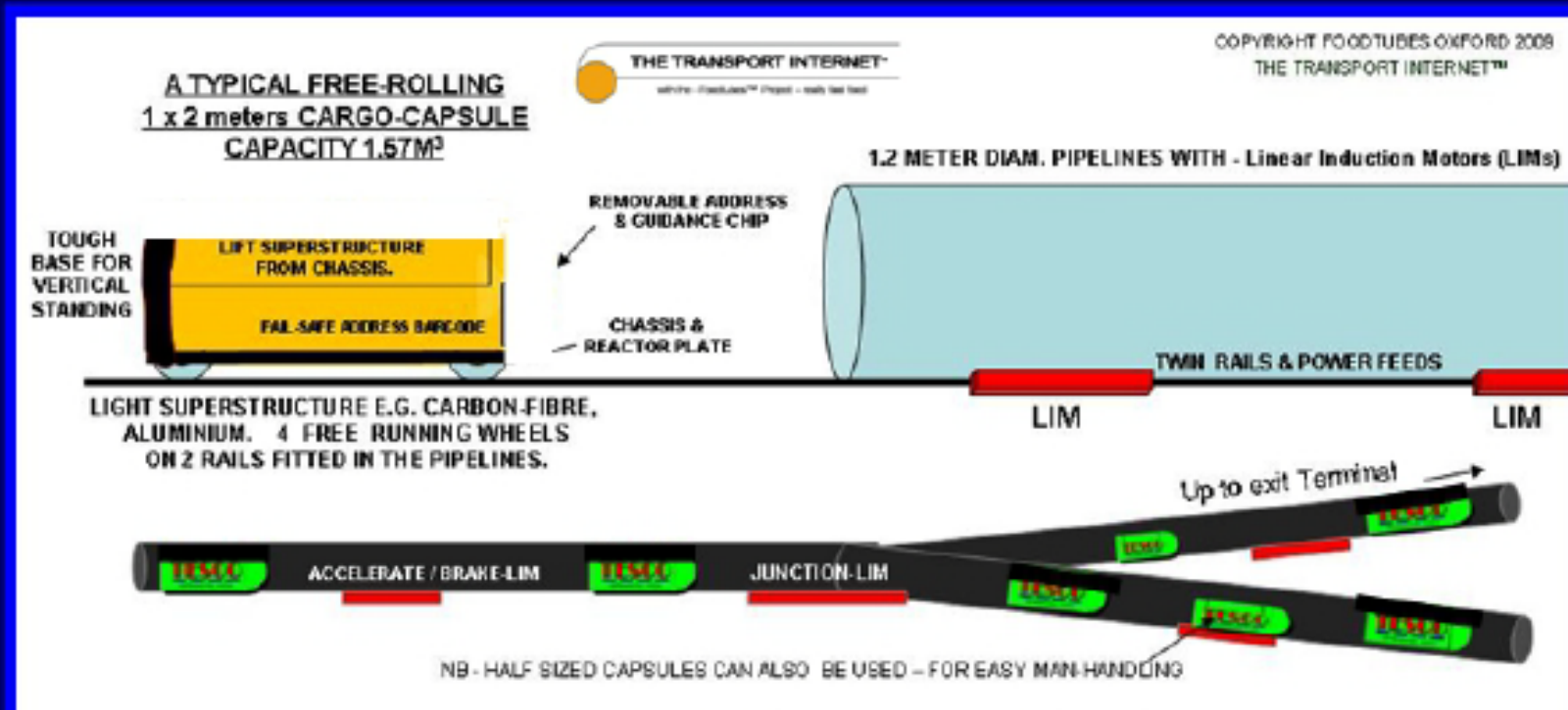
A collage of images demonstrating LIM technology. The top left shows a roller coaster launch track. The top right shows a roller coaster car full of people. The middle left shows a high-speed train. The middle right shows a transit train. The bottom left shows a water slide. The bottom right shows a water slide. A red arrow points from the text 'LIMs are used in exciting ways.' to the roller coaster launch track.

**FOODTUBES™**

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**LIMs – Reliable electronics since 1890**

**LIMs can launch planes from aircraft carriers**



Suitable Cargos of 5 kilos up to 1.5 tonnes – include:

Farm produce, Wholesale foods, Foods in production, Ready-for-sale-retail food. Waste & packaging to recycling centres. Factory supplies. Goods in the course of production. All suitably-sized ready-for-sale goods, e.g. clothing – toys – electrical – books – household goods etc. Passengers' luggage to & from airports etc. Amazon and other Web sales to distribution hubs. Parcel / postal / mail distribution centres such as Royal Mail, TNT etc. Files for archives etc. Circuits enable delivery of precise quantities of Just-in-Time-Stocks, are highly competitive with Road, Rail, Air & Sea transport and earn operating profits of more than 50%.

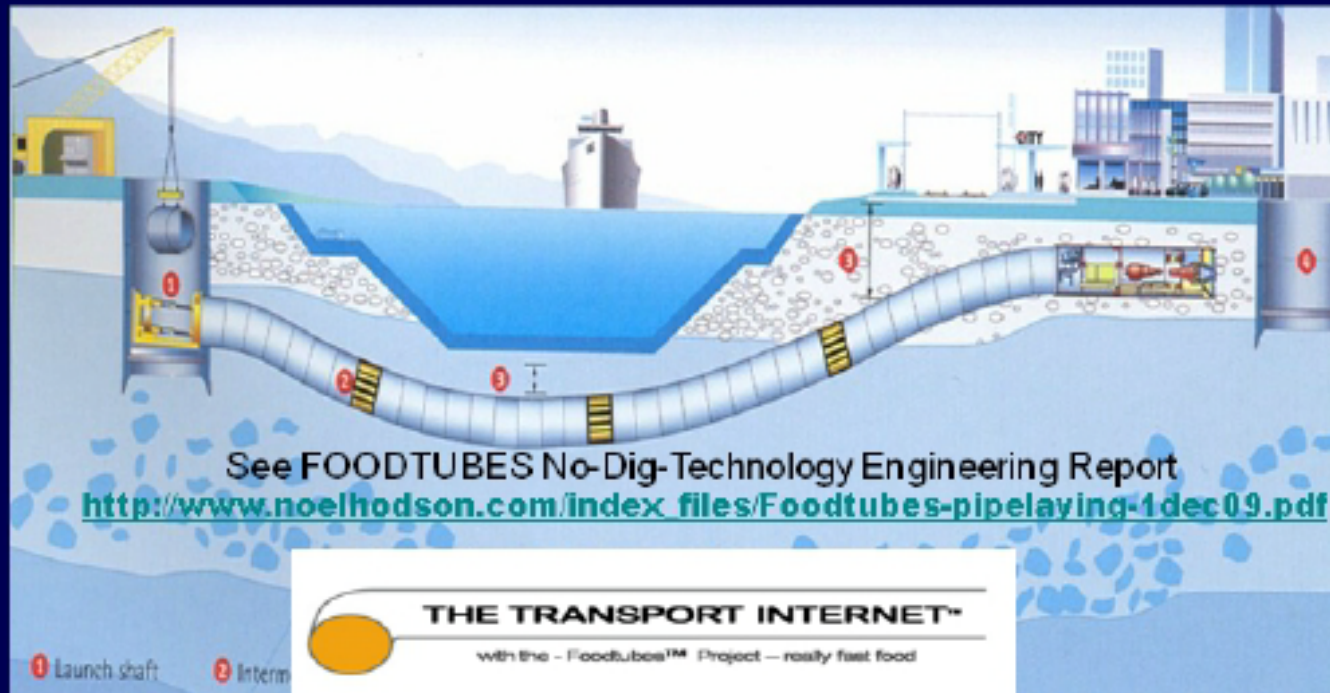
FOODTUBES is pollution free and when fully implemented will every year save 8% or more of manmade CO<sub>2</sub>.

A typical pipeline Circuit will be 150km, with 400 Terminals to & from ports, transfer depots, farms, factories, supermarkets, shopping malls & streets, covered-markets, schools, offices, colleges, military-camps and recycling centres, etc. Pipelines could carry cargos from coast to coast, undersea and link continents. All circuits will be connected. Speeds will vary. Specialist capsules will include: refrigerated, moisture-free, short-capsules, sealed-waste, security-capsules, etc. Circuits & Lines will serve Dense-Urban, Urban, Rural and Wilderness areas.

LIMs instead of Pneumatics: No moving parts such as gates, valves etc.

## CAN IT BE DONE - TODAY ?

**YES! Its not rocket science – NO-DIG, trenchless installation**



## NO DIG TECHNOLOGY

Oil, Water, Gas and other pipeline companies – and all civil engineers – see no particular difficulties in installing Pipelines. Russian energy company GAZPROM laid and maintains 250,000km of wide bore pipes.

# Croydon, LONDON, UK – 130,000 households.

To feed Croydon needs 700 van & lorry journeys – every day.  
OR ! One pollution free pipeline with 400 exits to shops, colleges & offices.



**FOODTUBES™**  
The transport internet – really fast food

**AN 80 Km LOOP WILL REDUCE CROYDON'S DAILY GRIDLOCKS**

45 cargo-capsules equal one 44 tonne, 6 axle HGV.

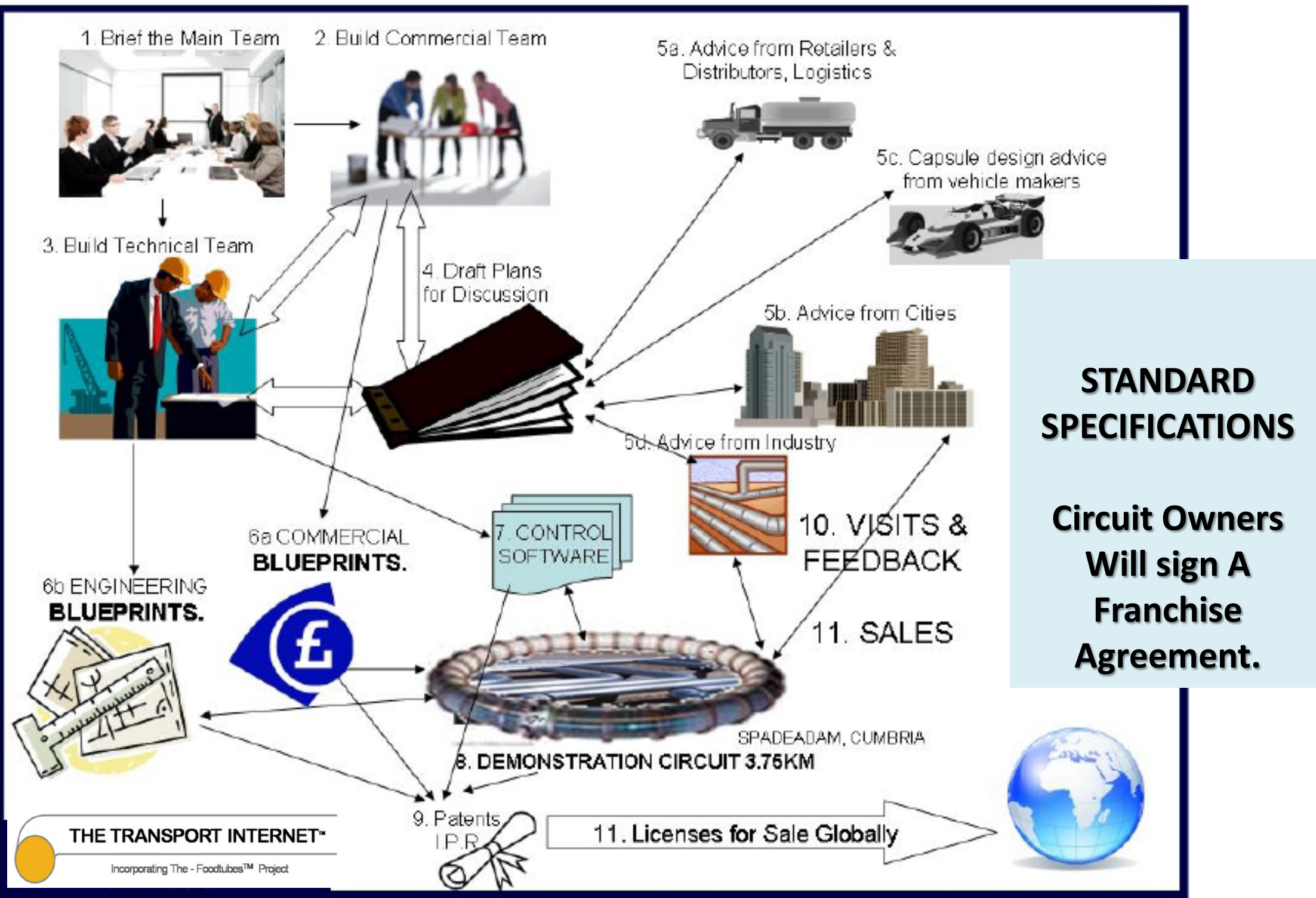


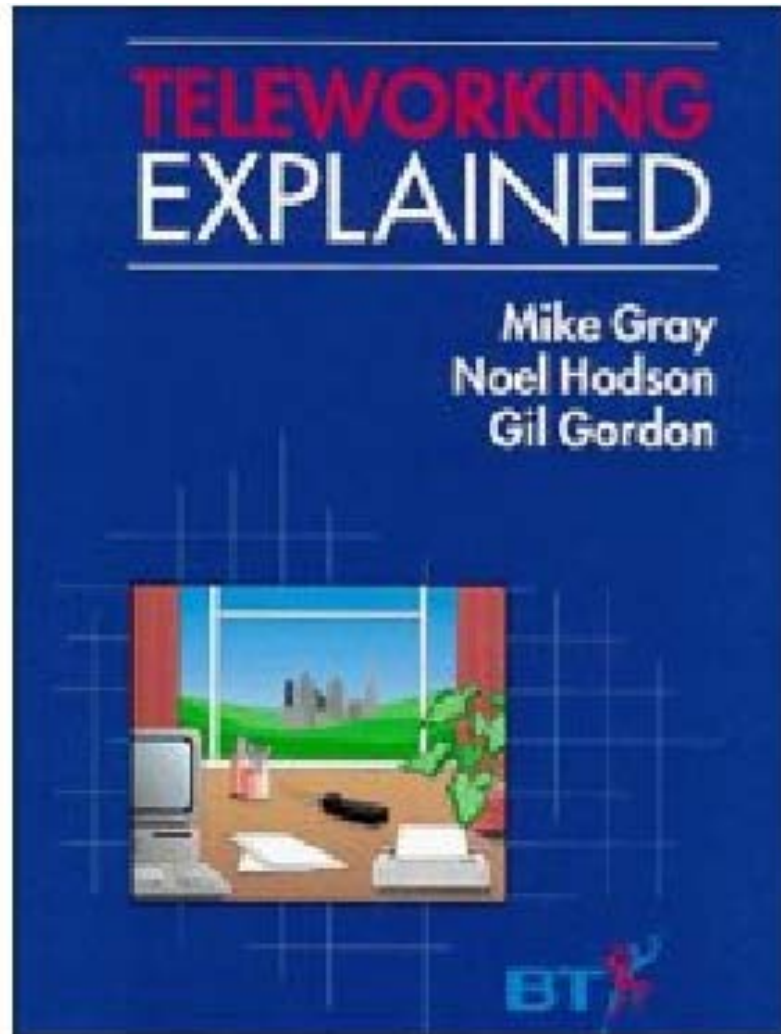
**THE TRANSPORT INTERNET™**

Incorporating The - Foodtubes™ Project



**Farm to Plate – SIZE MATTERS - some Cargo-Capsules will be manhandled**





## **TELEWORKING/ TELECOMUTING**

**Started at 0% in 1987.  
Today 16% of desk days are  
worked at home.**

**Our motive was to reduce  
commuting  
Traffic.**

**THE TRANSPORT INTERNET  
Will reduce freight  
Traffic.**

SOLO CAPSULE  
JOURNEY PRICE  
(EXCL VAT/SALES  
TAX)  
  
STERLING

\$5  
£3

Commercial  
EXCEL  
Model with  
50 variables.  
  
Test on WWW.

		GREATER LONDON	
		PROFIT & LOSS	
		-	
Total Revenues		\$2,314	MILLION
IRR calculation		22.35%	
Operating Profit		\$1,746	MILLION
Profit Margin		75%	
DEPRECIATION & MAINTENANCE		\$135	MILLION
DEPRECIATION		2%	
PEOPLE EMPLOYED		558	
VALUE ON P/E BASIS		\$17,434	MILLION
		CO <sub>2</sub> SAVED	
TRANSPORTERS	25%	2.5	MILLION TONNES
TRAFFIC DECONGESTION	60%	6.1	MILLION TONNES
ROAD RAIL MAINTENANCE	15%	1.5	MILLION TONNES
REDUCTION OF CO <sub>2</sub>	100%	10.2	MILLION TONNES

Greater London circuits  
Annual Profit - \$1.7Bn  
CO2 saved 10.2 million tonnes.  
\*\*\*\*\*  
Reality Test.  
\$2 Cost per cargo-capsule journey  
due to fuel efficiency, exceeding  
Shell's 2,565 miles per gallon car  
Shell Eco-marathon Americas in Houston.

