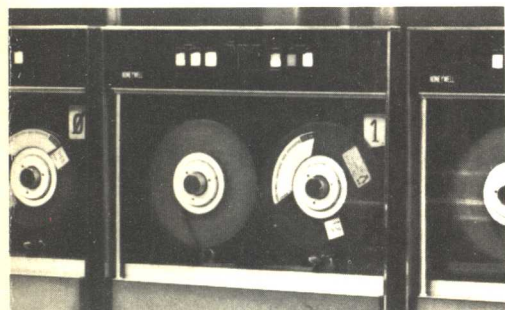
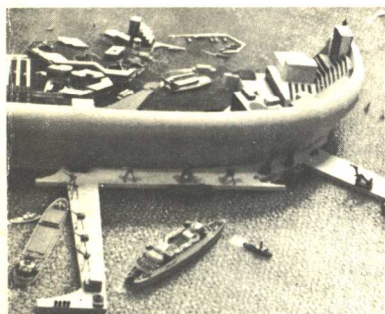


Success with English The Penguin Course



Outlook: Science at Work John Parry



687
375
32

Outlook: Science at Work

John Parry

Penguin Books

Penguin Books Ltd, Harmondsworth, Middlesex, England
Penguin Books Inc., 7110 Ambassador Road, Baltimore, Md 21207, U.S.A.
Penguin Books Australia Ltd, Ringwood, Victoria, Australia

First published 1970
Copyright © John Parry, 1970

Designed by Arthur Lockwood

Made and printed in Great Britain by
Butler & Tanner Ltd, Frome and London
Set in Lumotype Baskerville

This book is sold subject to the condition that it shall not,
by way of trade or otherwise, be lent, re-sold, hired out,
or otherwise circulated without the publisher's prior consent
in any form of binding or cover other than that in
which it is published and without a similar condition
including this condition being imposed on the subsequent purchaser

Penguin Education

Success with English The Penguin Course

General Editor

Geoffrey Broughton,
Lecturer in English as a Foreign Language,
Institute of Education, University of London

Collaborating Committee

J. A. Barnett,
Director of Studies,
Regional Institute of English, Bangalore

Thomas Greenwood,
Principal, Oxford Academy of English

John Parry,
previously with Schools Television,
British Broadcasting Corporation

Success with English The Penguin Course

Contents

Town and country page 8

A city at sea
Living under cover
An indoor town
Moving about towns
Transport for tomorrow

Getting about page 20

Hovercraft
Hydrofoils
A new lifeboat
Hovertrains
Steam cars
Jump high, jump low

Food and water page 30

Jam and pickle
Drying and smoking
Food decay
Bottles and cans
Refrigeration
Frozen eggs
Desalination

Plastics page 38

Plastic coats for sheep
The baby in the silver suit
Adjustable-focus glasses

Contents

Medicine page 46

New hands for old

Man or machine?

Pacemakers

Heart-lung machines

Kidney machines

A new heart

Communications page 66

Colour television

I saw him on the phone today

Communications satellites

Getting smaller

Computers page 76

Across the Atlantic by computer

The computer in daily use

Feeding the computer

Meet my friend

A national electronic brain

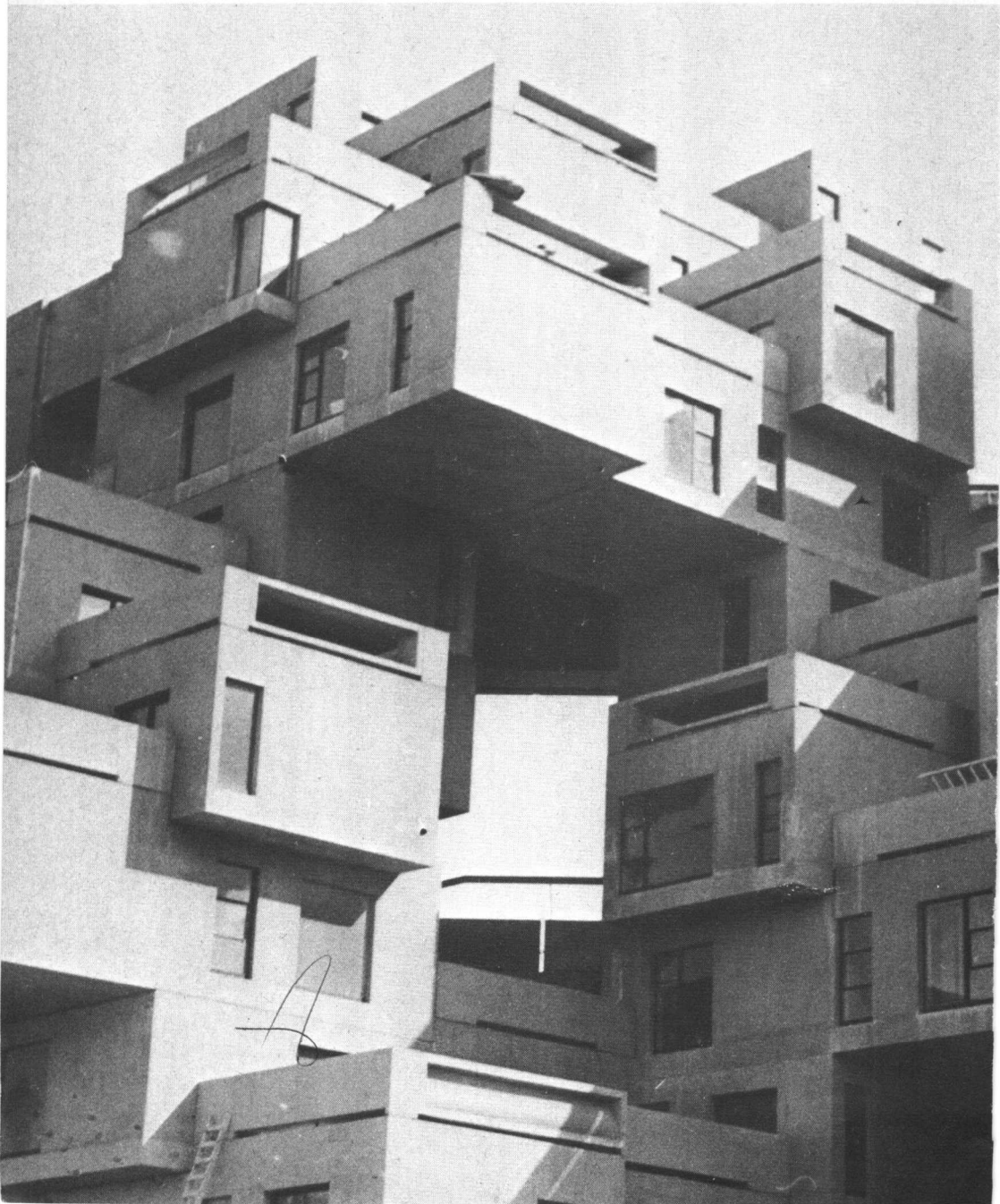
The computer and the motor-car

Take a letter, Miss Computer

Further reading page 90

Acknowledgements page 91

This collection of living units, built in Canada for Expo '67, may be typical of the townscape of tomorrow.



Town and country

There was a time when everybody lived in the country. At that time everybody was a farmer, growing his own food – everybody, that is, except the few men who were strong enough to make others grow their food for them and the people who specialized in certain types of work. Later, there were more specialists: shoemakers made shoes, tailors made clothes, merchants bought and sold, and men began to find it convenient to live together in towns, where they could trade with each other. Farmers brought their food to the towns and traded it for the goods made by the specialist workers.

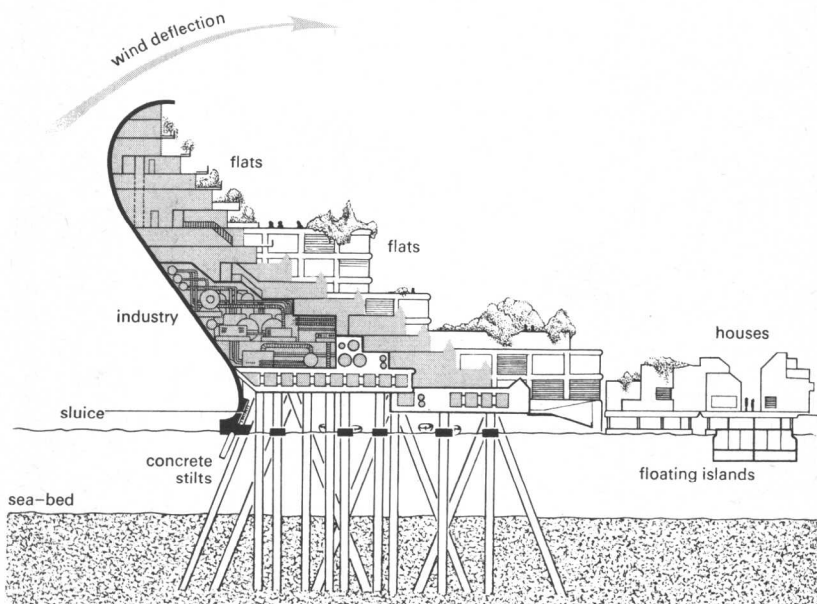
At first, towns were fairly small, but some of them became important trading centres and so became bigger. Even so, in 1800 there were probably only fifty towns in the whole world with a population bigger than 100,000 people. With the Industrial Revolution, big new manufacturing centres developed and the number of people living in towns increased. There are now more than nine hundred towns with populations bigger than 100,000 people, and some of these are very large indeed, with populations of more than 5,000,000 people. In many countries there are now considerably more people living in towns than in the countryside.

Towns are still growing as the population increases. And the world's population is now growing very fast indeed. The number of people in the world now is approximately 3500 million and, at the present rate of growth, this will increase to 7000 million in the next thirty years. In industrial countries, towns will continue to grow. More land will be used for houses and factories. Some people foresee a time when the whole of Britain is one great sprawling city.

A city at sea

One answer to the question of land shortage was suggested in 1968 by the Pilkington Glass Age Development Committee. The committee put forward detailed plans for a complete city, housing 30,000 people, to be built at sea. They made a model to show what the city would look like.

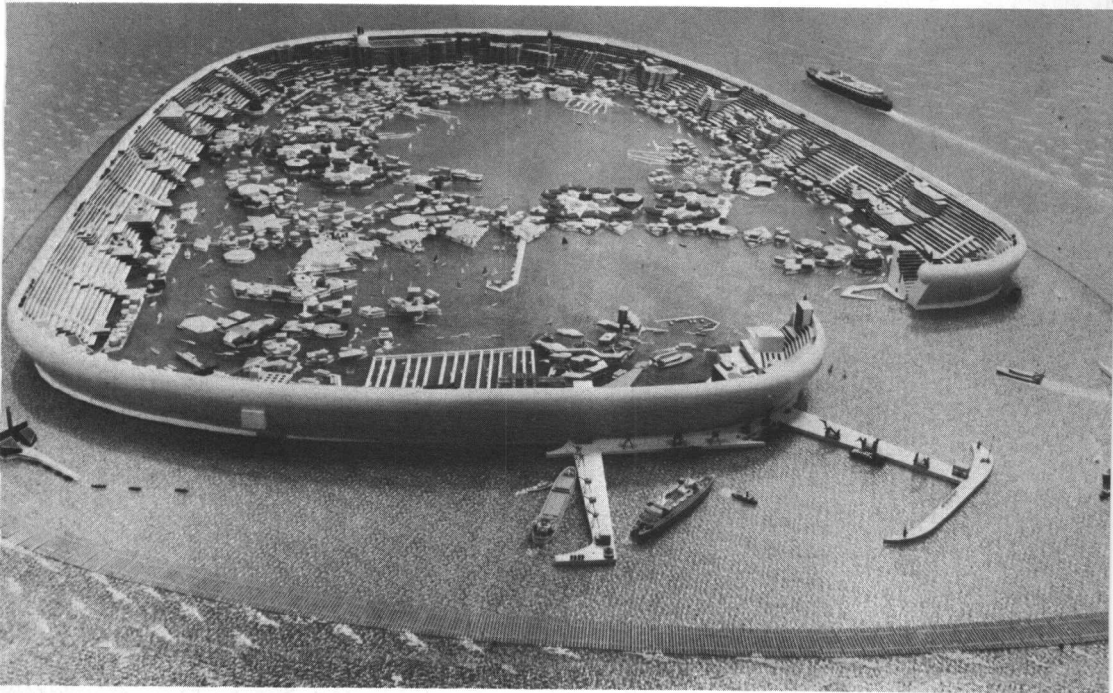
The suggestion was to shape the city like a harbour. The outer wall of the harbour would stand on concrete stilts resting on the sea-bed. Naturally this could only be where the water was fairly shallow. The people would live in flats in the fifty-metre high outer wall. The flats would all face inwards, and would be made of concrete and glass. The



glass would be specially made and coloured to control the heat and glare from the sun.

The water inside this man-made harbour – the planners called this water the lagoon – would be calm. On it would be floating islands carrying more buildings: a hospital, two theatres, a museum, an art gallery and a church. On one of the islands would be a desalination plant, to take the salt out of sea water and turn it into fresh water.

People living in the city could move around the lagoon on small boats driven by electricity, so there would be no petrol or diesel-oil fumes. There would be jetties outside the main wall for ships bringing supplies. People could also travel to the mainland by hovercraft or helicopter.

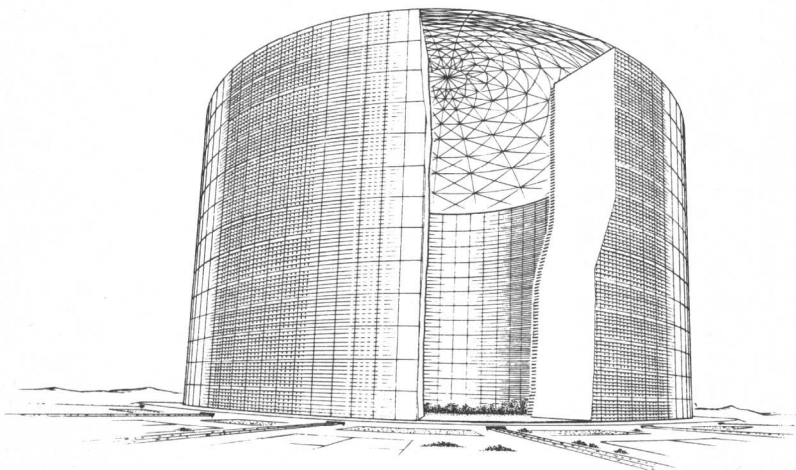


Living under cover

We do not usually think of the cold regions of the Arctic Circle as suitable places for building new towns. But in Soviet Russia, scientists at the Institute for Northern Architecture are studying the problems of living in the far north. How can architects and town planners overcome the problems of living in a region where night lasts for several months, and where the temperature may be between -40°C and -50°C ?

Their answer is to build a town under cover, so that the people living there need never go outside into the cold. One idea suggested by the Institute for Northern Architecture is to cover all paths and roads between buildings. A town based on this idea would look like any ordinary town, except that people would move from one building to another along heated, covered passages. For a walk "out of doors", they would go to a park in the centre of the town: it would look like any park in a temperate climate, with the usual trees, grass and flowers, but it would be protected from the arctic weather because it would be covered completely by a large dome.

Another idea is to build blocks of flats in a circle, so that they form an outside wall for the dome which covers the whole of the centre. The centre would have an artificial climate, controlled by infra-red rays, in which temperate trees and plants could grow.



An indoor town

Winter in Upper Minnesota is hard. Slowly people are moving away from this region and settling in parts of the United States where the climate is more pleasant. There is, however, a plan which should make life in Upper Minnesota much more acceptable.

The idea is to build a town which will have its own climate. In this town it will always be pleasantly warm, and the air will always be clean.

The planners want to build this town under a series of domes. Each dome would be three kilometres in diameter, and one and a half kilometres high. In 1967, they estimated that these domes would cost about \$80 million each to build. In winter the streets under the dome would be free from snow. Snow clearance is an expensive item in Minnesota, and it was estimated that the money saved on snow clearance would pay for the domes after ten years. A town housing about a quarter of a million people would need six domes.

There would be no private cars inside the domes. Instead, people would travel by means of small electric vehicles running on tracks. The tracks would be laid along every road. A man would get into a vehicle, drive to his destination, and then leave the vehicle for someone else to use. There would be no parking problems.

Moving about towns

Engineers are studying new methods of transport, such as the electric cars of the Minnesota plan, for today's towns and cities, as well as for the new towns of the future. Everyone knows the problem. Each year there are more cars on the road. Walking through a city now is a matter of squeezing between parked vehicles at the side of the road – often on the pavement itself in some countries – and risking death at every crossing.

In the centres of most cities, drivers may park their cars only at certain places on the street (often with parking meters controlling how long each car may be left) or in off-street car parks. Parking restrictions help to keep the streets clear for moving traffic, and they also stop many people from bringing their cars into city centres. When parking restrictions are made, it is also necessary to improve public transport, although in many towns it is hard to see any sign that such an improvement is taking place.

Town and country

However, in London a new underground line, the Victoria Line, has already been built to extend the underground railway system. In Germany the expansion is still greater. New underground systems are being built in Cologne and Munich, and the present systems in Berlin and Hamburg are being extended: altogether, twelve German towns are improving their underground systems.

At the same time, the system of roads in cities is being changed. Roads are no longer on one level only, but cross each other by means of flyovers and go under buildings by means of tunnels. What of the buses that move along these roads? In most countries they still have both a driver and a conductor. But the need for the conductor is slowly disappearing and in the latest one-man London buses passengers pay their fares to a machine which controls the entrance.

Will the need for the driver also disappear in time? Shall we see buses which "lock on" to an automatic guidance system under the road? Perhaps the need to improve public transport in modern cities will help to make this possible in the not-too-distant future.

A London traffic warden checks that cars do not remain too long at a parking meter.



16

Moving about towns



The Santa Monica Freeway flyover, Los Angeles, California.
Cars can move freely, but is this a city for people?

415

Transport for tomorrow

One thing is certain about the public transport of the future: it must be much more efficient than it is today. The time is coming when it will be quicker to fly across the Atlantic to New York than (for the London office worker, at least) to travel from home to the office. The two main problems are what vehicle shall we use and how can we plan our use of it?

There are already a number of modern vehicles which are not yet in common use, but which may become a usual means of transport in the future. One of these is the small electric car: we go out into the street, find an empty car, get into it, drive to our destination (either freely on a road as in a present-day car, or along rails), get out and leave the car for the next person who comes along. In fact, there may be no need to drive these cars. With an automatic guidance system, it will be possible for us to select our destination just as today we select a telephone number, and our car will move automatically to the address we want. Payment for the journey could be made either indirectly through taxes (in other words, the journey would be “free”), or directly by means of a credit card.

Long journeys in private cars could also use automatic guidance systems. We can imagine a time when laying down the necessary equipment for a guidance system will be part of the normal motorway construction work, just as railway tracks have been laid down in the past. Arriving on the motorway, a driver will select the lane he wishes to use, switch over to automatic driving, and then relax – dream, read the newspaper, have a meal, flirt with his passenger – while the car does the work for him. Unbelievable? It is already possible. Just as in many ships and aircraft today we are piloted automatically for the greater part of the journey, so in the future we may also have this luxury in our own cars.

On the other hand, we may not wish to bother with car ownership at all. Their use may be forbidden in towns, and they may be so much slower and more inconvenient for longer distances that private ownership of them may disappear. They will not, of course, be replaced entirely in towns by the guided, self-drive taxi. Underground railways will still take care of the longer, cross-town journeys and of commuter traffic.

Imagine an escalator leading into one of the future underground railway systems. The steps on this escalator are enclosed on three sides by low walls. As the step moves downwards, a gate closes behind us, so that we are in a compartment large enough to take two standing passengers.