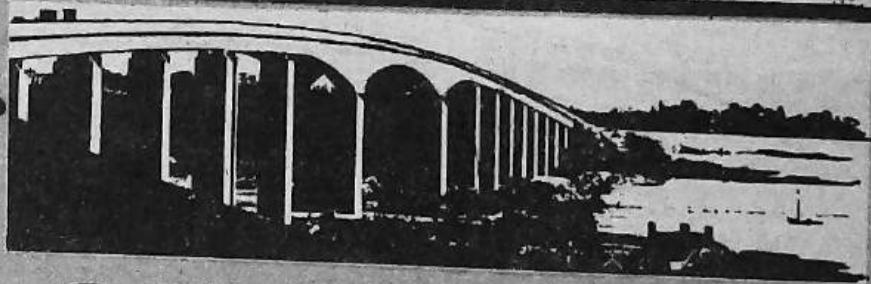


BRIDGING the ORWELL



Realisation of a vision

THE Orwell Bridge idea was born in a Cliff Quay office of Fisons at a meeting of the transport committee of the Ipswich Chamber of Commerce and Shipping in 1965.

At that time Ipswich had suffered another of many enquiries into its development, and in this one, a particularly silly idea was mooted, proposing to infill a section of the dock by the lock gates and run an internal main traffic route over it.

By Mr. H. C. Chandler, Ipswich

This would have the effect of isolating the inner dock area, including Cranfields, Pauls and Whites and the south-west quay. The uproar this suggestion created can be left to the imagination.

At this time also, I was chairman of the Chamber's transport committee, as well as Fisons transport manager, and on the particular day in question a very important meeting of this committee had been arranged with consideration of this suggestion high on the agenda.

During a routine lunch-time examination of our own shipping and transport position I had this matter very much in mind and from the bridge of one of the ships I had an excellent view down-river with the high ground at Wherstead in the background the view, south of Cliff Quay Power Station, showed up markedly.

The thought occurred a bridge somewhere around this area might provide the solution. The ability to pick up Felixstowe dock traffic and by-pass Ipswich was immediately apparent, plus the opportunity to spur off and pick up our own dock and industrial traffic.

It was fortunate at this time the Chamber's president was Mr. R. P. Ross who was also Fisons general works manager and was based at Fison's Cliff Quay offices. I put the matter to him and he approved.

We were also very fortunate in having a very strong transport committee in the Chamber, among its members were Mr. Peter Bamford, general manager of the Ipswich Dock Commission (now the Ipswich Port Authority). Captain S. Harvey then harbour master and Captain John Bain, the deputy harbour master. Captain Bain has now succeeded Captain Harvey who has now retired, as has Peter Bamford and myself.

A pre-committee meeting was held to discuss this new idea and each one liked it. It was put to the committee who endorsed it and it went forward as somewhat of a crusade.

The following year — 1966 — the Chamber issued its report on the consultant's proposals and under the presidency of Mr. N. Rogers the bridge concept was fully backed.

It therefore seems appropriate at this moment to put on record the part played by these earlier members of the Chamber, and their enthusiasm in pursuing the project.

Also, on behalf of all of us, we would like to pay tribute to the efforts of so many dedicated and professional people who have worked so hard over the years to make a reality of our earlier ideas.

Thousands to reap benefits of this new Ipswich by-pass

That 'thorn-in-the-side' for politicians and planners — the Ipswich traffic bottleneck — will be eased today when the Ipswich southern by-pass is opened by David Howell, Secretary of State for Transport

The official ceremony takes place at 11.30 a.m., near the Wherstead Road interchange at the Orwell Bridge.

It is followed at 1.30 p.m. with the public opening, when traffic will use the bridge for the first time.

This will be a great moment for thousands. It will include all those travellers to-and-from the east coast who have hitherto driven bumper-to-bumper along busy roads and congested town streets.

Now, not only transport drivers will benefit — in time and patience — but around-town drivers, home owners and all regional traffic will obviously notice a vast difference on many of the streets in Ipswich.

The Orwell Bridge is expected to carry some 11,000 vehicles a day, and when the western leg is completed and traffic from the Midlands is also carried, the figure is expected to be at least double.

This remaining portion of the bypass is expected to be completed in a little over two years, said Mr. C. D. Lewis, project manager for the southern by-pass and the Orwell Bridge for the Department of Transport.

The important spur

road, which will take London-bound traffic from the by-pass to join the A12 through Bentley Woods to near Capel-St-Mary, the eastern section; and the south-western link are as yet to be completed.

Completion dates vary, but by mid-1985 the entire southern by-pass of Ipswich should have reached fruition.

The bridge over the

the cormorants, seagulls and water life still thrive — and no doubt the people who enjoyed the river for fishing, sailing and bathing will continue to do so.

And to use the facilities of this largest pre-stressed concrete bridge in Britain there will be no toll charges. High as it is the winds of the north-east are not expected to create too many traffic problems.

"Most people here, because the winds are so cold, believe them to be a lot stronger than they actually are," Mr. Lewis commented "but compared to the high bridges and westerly winds in the west of England, and in Scotland, in relative terms, there should be no particular wind problems."

In the event that there may be, provision has been made to divert tall

vehicles and signs would be erected. The Suffolk police and the Department of Transport have worked closely together to anticipate all such eventualities.

Should there be fog, dense enough to cause problems across the bridge, the cats eyes are placed as close together as allowed, and again the police will be there to direct and help drivers.

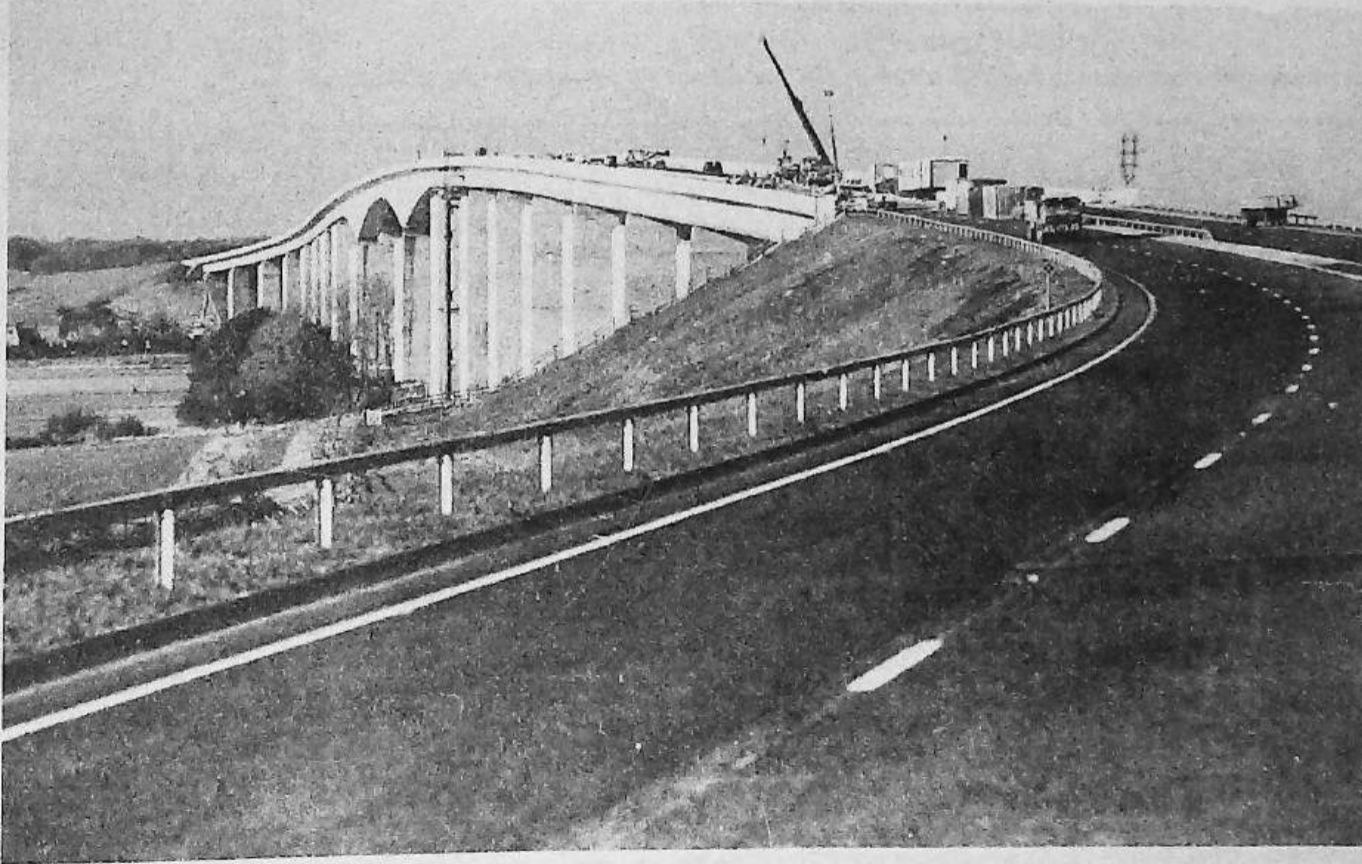
For years there have been hiccups between the planners and the general public but, all-in-all, this project has not only improved transport facilities, it has provided work for many hundreds of people and business for many local companies.

Few local people — young and old — ever expected to see a bridge over the River Orwell but it's here, it's lovely and it promises to be a great big blessing!

by Jocelyn Mann

Orwell has become the focal point, and what a stunning feature of the by-pass it is.

Despite rumours to the contrary it never did fall down! Its walkways are open to the public, its construction has not interfered with wildlife —



• The last finishing touches are applied to the surfacing on the Orwell Bridge in readiness for all the dignitaries and then the public who will come to see traffic moving and skirting Ipswich on the southern by-pass for the first time.

From the initial planning stages to the official opening it has taken 10 years. Not very long when the necessary public hearings, planning, building, earth-moving, dredging and weather are taken into consideration and now, finally, Ipswich has its bridge over the Orwell.

Completion of Britain's longest pre-stressed concrete bridge

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BRIDGING the ORWELL

A Bronze Age burial ground left untouched by earthmovers

THE NUMBERS 007 are indicative of more than just a fictitious agent. They identify a real Bronze Age burial mound that can now be seen close to the new A45 served by the Orwell bridge.

by Don Black

The numbers given by Suffolk County Council's archaeological unit identifies the mound in a Levington group of barrows, part of a prehistoric cemetery strung out along the Felixstowe peninsula.

Not one square inch of this, the most extensive ancient monument in Suffolk, has been touched by the earthmovers of modern man.

More significant than 007 is 011 in the Foxhall-Nacton-Bucklesham complex that has given its name to the massive Seven Hills interchange.

Prehistoric

The £10.2-million south-eastern section of Ipswich by-pass was diverted, without extra expense or harm to other

territory, so that this prehistoric mound could stay intact.

Few people knew it even existed when 011 emerged in highway engineers' original plans, which would have let the bypass earthworks destroy a slope created 3,500 years ago. Gentle pressure changed the plans.

Mr. Stanley West, who heads the unit, said the procedure was complex, but if the barrow had lost its western edge, Suffolk's best group of tumuli — after Sutton Hoo — would no longer be complete.

"We have always enjoyed good co-operation with the Department of the Environment and we had goodwill from the other interests," he said. "It shows that the real road developers need not be at odds with the historical background."

Field officer Mr. Edward Martin described the operation in this way, "The road was moved slightly to the

west, its angle altered almost imperceptibly, but enough to ensure that the barrow remained whole."

At one stage the new road between the Seven Hills interchange and Felixstowe was planned to run through a group that had disappeared altogether and whose existence had been discovered from aerial photographs.

That route was later altered for other reasons, but in the meantime that unit carried out a "paper rescue" on the site and found a cremation urn.

"We do not know who these mound-builders were, only that they lived between 2,000 and 1,500 year BC," Mr. Martin said. "One presumes that the ashes in them were those of important people."

"Treasure hunters in the past evidently thought so and the mound was dug into some two years ago without permission. It should be noted that these mounds have legal protection as

scheduled ancient monuments."

Mr. Martin describes 007 "as a nice big one" and, indeed, the mounds average 100ft. in diameter. But the one which has been saved from mutilation, 011, has bracken cover in woodland and hardly shows up in photographs.

It can be seen, however, by drivers going towards Ipswich on the section of road through Nacton that was part of the A45 and is still on the route to and from Felixstowe. This mound and others close by appear as low hillocks among trees in the angle between the old road and the new.

These are not the only "Seven Hills" in East Anglia. Another set (now reduced to three) can be found at Ingham/Great Livermere near Bury St. Edmunds and yet another near Brettenham in

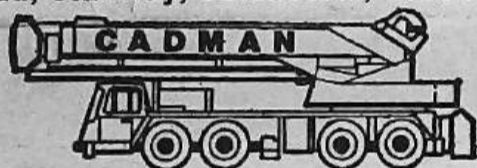
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• The Seven Hills interchange can be seen clearly in this aerial picture. It has been named from a nearby group of burial mounds, part of a vast prehistoric cemetery which is still quite prominent on the landscape.

The burial ground is in the Foxhall Nacton Bucklesham complex. Although it is not known who the builders of these mounds were, but it is known they lived some 2,000 years BC.

It seems incredible to the layman that these burial mounds could have survived for nearly 5,000 years and still be discernible to the naked eye, both from the air and from the ground. It is also astonishing these mounds have survived the development of land over that number of years and remained virtually undisturbed.

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BRIDGING the ORWELL

Legends galore prevail

• from previous page

Norfolk (not the Suffolk Brettenham) as I found to my cost when I cycled there to see them in my youth).

Still more "Seven Hills" exist in Berkshire and Hampshire. "In not one of the groups does the number of barrows actually coincide with seven," Mr. Martin pointed out.

A special significance

The "Seven Hills" in Foxhall, Nacton and Bucklesham total no fewer than 14!

He suggests that either "seven" was being used as synonym for many or that "seven" had some special significance unrelated to the actual number of barrows.

Mr. Martin recalls that the number seems to have had a special significance for the Anglo-Saxons, who were responsible for most of our place names.

A breach of the peace by seven or more men was act of war and not an act of private violence. This also brings to mind the Biblical "seven years of plenty and seven years of dearth."

Similar magical or special links associated with seven can also be

traced in Celtic society. To Mr. Martin's list we can add more recent superstitions about seventh sons — and even the film "Seven Brides for Seven Brothers."

Whatever the reason for the name, we can now drive over or around the Seven Hills interchange, into which thousands of tons of concrete have been poured. Costains Civil Engineering were the contractors, C. H. Dobbie and Partners the consulting engineers.



• This is the other 007 — a Bronze Age burial mound alongside the new A45 between Ipswich and Felixstowe. It was fenced round during highway construction "in case of mishap".

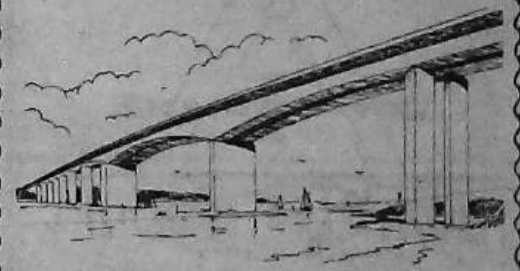
Such certainties as these contrast with a legend that the Seven Hills, near Ipswich, was the place of a battle in 1010 between the Danish army of Thorkel the Tall and the East Anglian army of Earl Ulfketel.

This siting is given on Bartholomew's half-inch

map of Suffolk published in 1972, but has never been substantiated.

The Danes did land at Ipswich in 1010 and did lots of damage. "They get blamed for everything," comments Mr. Martin. "But I don't think they did anything wrong at Seven Hills."

Congratulations to all involved with the Orwell Bridge project



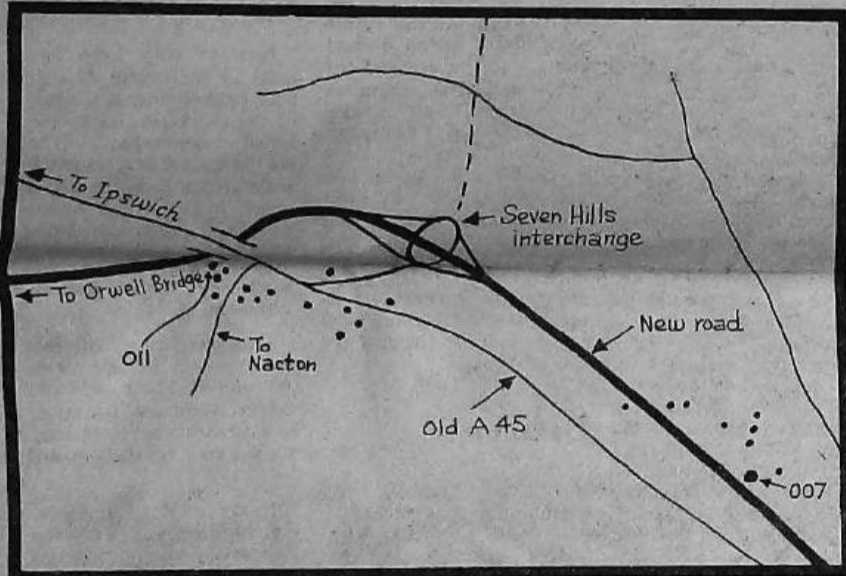
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BRIDGING the ORWELL



Traffic congestion will, hopefully, be a thing of the past.

Springboard to development

SINCE the war, the expansion of Ipswich has been hampered by the lack of an efficient communication system round and within the town. In the early 1960's the Vincent Report was the first of many expansion planning reports on how and where expansion would happen.

With monotonous regularity, these reports were prepared, reported on, studied, debated and then consigned to files or waste paper baskets as Whitehall policies changed.

Many years after the Vincent report, the situation started to be resolved when it was finally decided that the Ipswich bypass would be south of the town.

Shortly after this it was decided that the River

Orwell should be bridged and not tunnelled under. In 1980 the exact route of the southern bypass from the A12 to the A45 was decided after a public inquiry. Subsequently decisions have been taken about the

remainder of the bypass network, except the western section where the Secretary of State's decision is awaited.

So, at long last the major part of the bypass and the bridge are constructed — on time — without any major strikes or holdups and now form an exciting and imposing addition to the port and river landscape at Ipswich.

Even those who were vigorous protagonists of the Orwell tunnel must now be impressed by the scale and majesty of the bridge.

Over the last few years there has been a standstill in the development and progress of property development generally in Ipswich and its immediate area. Prestige offices have remained unlet, industry has been in difficulties due to the recession, town centre schemes have not materialised. The house market in and around the town has been in the doldrums.

Is Ipswich then poised for exciting development? Hopefully yes, because the advent of the bypass and the bridge will be the springboard for development; at long last the appalling traffic congestion is coming to an end and by 1985 the town will be bypassed. Communications will be very good to the Midlands and Felixstowe, much improved to London, but still indifferent to Norwich.

How will these new circumstances affect different types of property?

Despite the fact that the

Ipswich area is well located for communications with the continent, and the area has an extremely good record for labour relations, it is very likely that there will be only a slow increase in manufacturing industry.

Not only are grants available in more depressed areas of the country, but Suffolk also does not have the same reserve of unemployed skilled labour.

We anticipate that the greatest demand will be for warehousing with a gradual increase in the demand for light industrial premises established to take advantage of European markets.

Ipswich is going to become increasingly important as one of the gateways to Europe, one only has to see the developments which have taken place near Felixstowe Docks to realise what huge potential there is for this purpose.

Offices

Although there is still much unlet prestige office space in Ipswich, with further schemes in the planning stage, we do not see an immediate revival of the office market until the recession ends.

It is possible that more national concerns will relocate themselves out of London and come to Ips-

wich where living and working is so much more pleasant, and where rents and other costs are so much cheaper.

High rate and rent costs have caused many concerns to move out and Ipswich, with its advantages mentioned above, must attract some of the firms who have taken that decision.

Retail shops

Not so very long ago rents in the centre of Ipswich peaked but, as a result of the recession, have now fallen somewhat. The sharp increase in rents in the main trading area was a result of a limited supply of good shops not being able to match the large demand for space in Ipswich by many multiple retailers.

However, part of this demand will be met with the development of the Tower Ramparts site and, as a consequence, pressure should ease on the upward trend.

Rents will, however, still increase as the improved communications will result in more shoppers demanding more extensive retail services, and retailers of all types will vie for representation.

(Submitted editorial by Simon Wallis and Tony Box, of Strutt and Parker).



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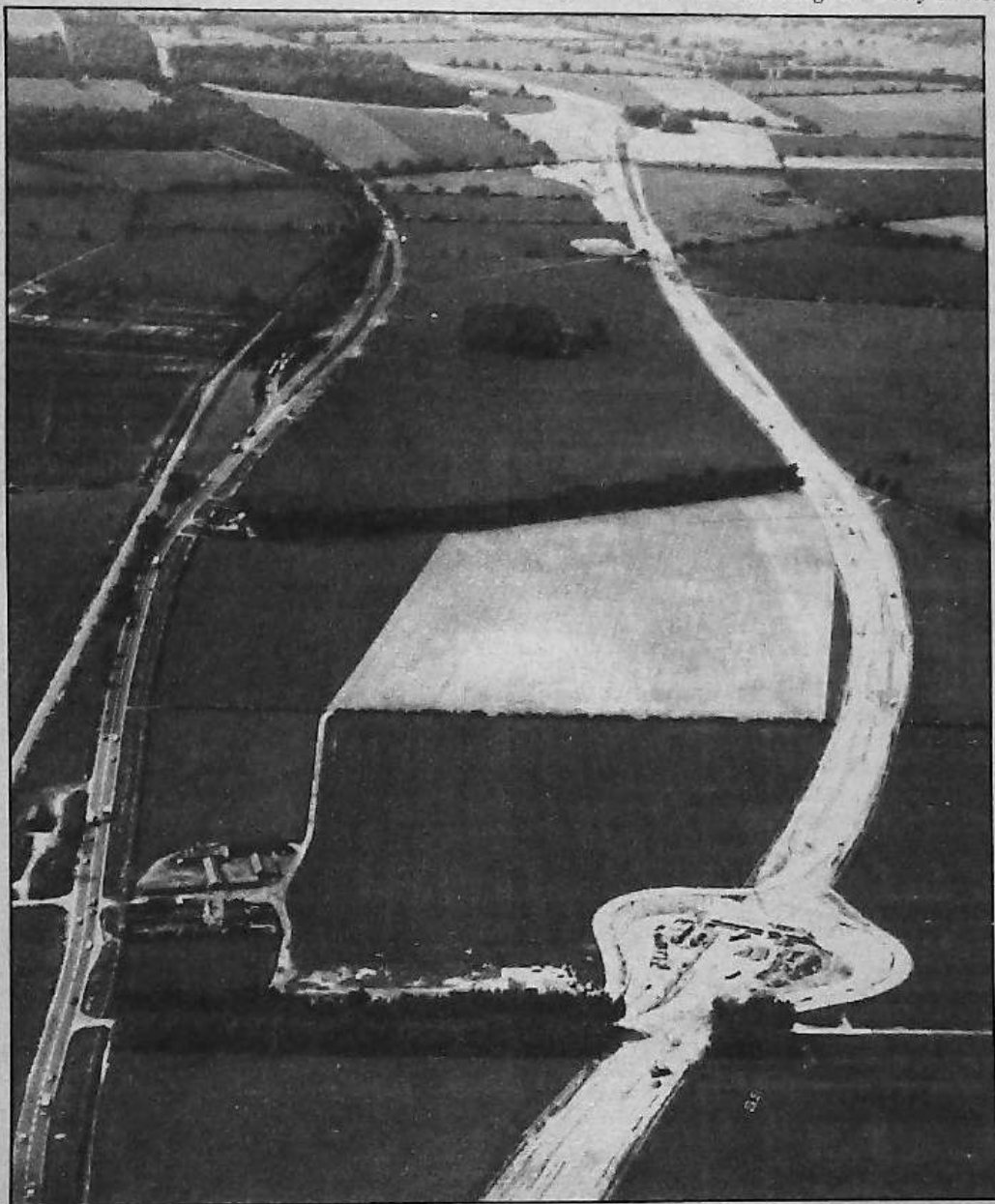
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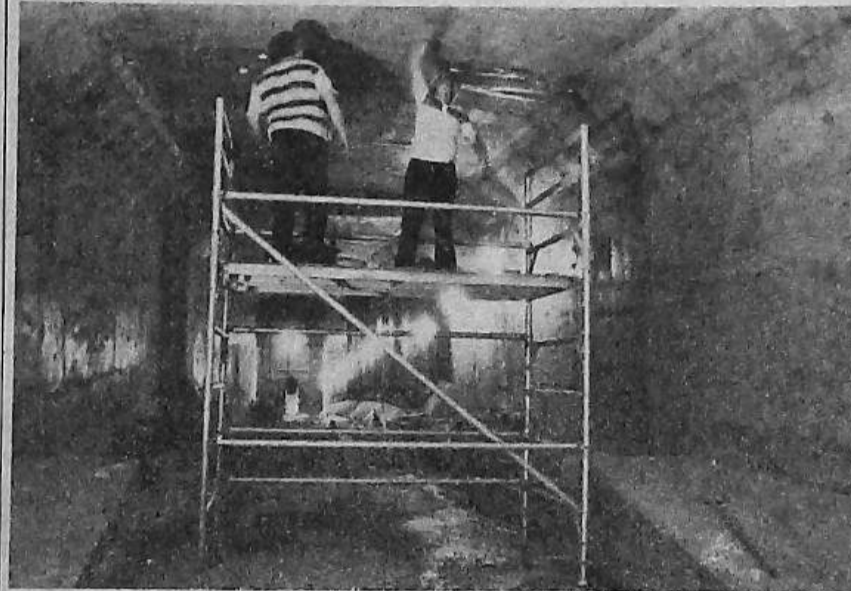
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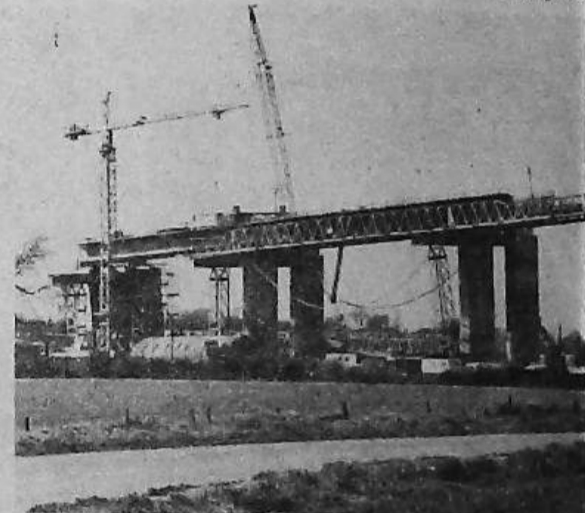
The earth-movers begin...



Workmen inside the main span of the bridge. It's used for a water main and emergency electrical and telephone lines.



NOVEMBER 1979. The first stages of the bridge foundation



Beginning to take shape — the first leg of the 18-span structure impressive enough to quieten local people who are not convinced



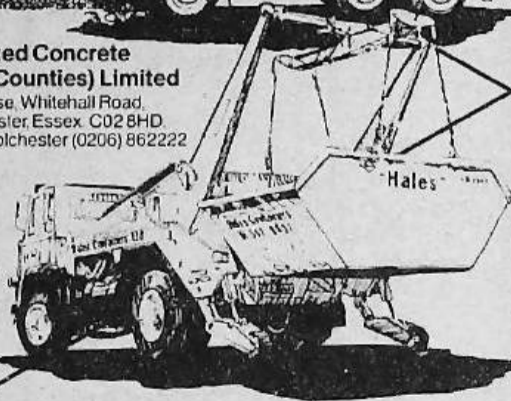
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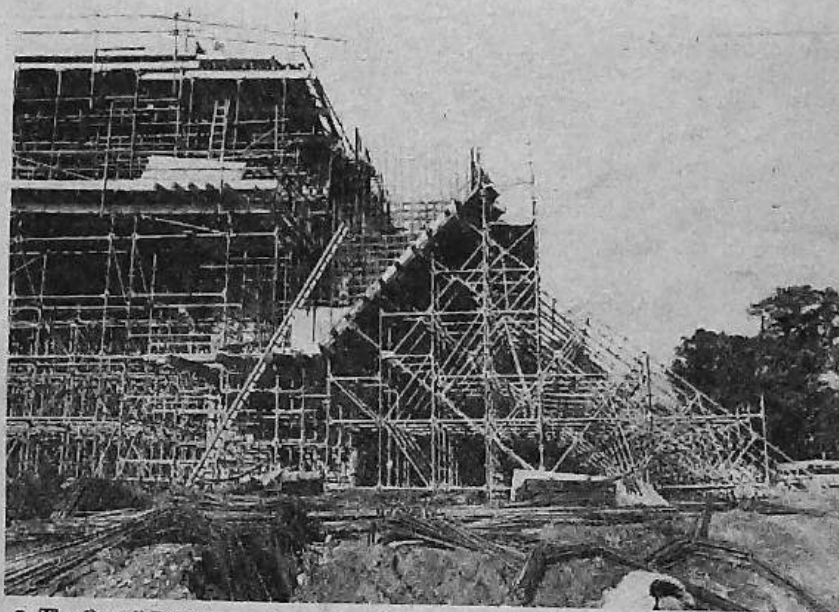
BRIDGING the ORWELL



Work is underway, still a long way to go and not yet even at this time they want a bridge across the Orwell.



By the autumn of 1980, work on the west bank piers was well under way. To support them, foundation piles were driven, up to 131 feet below ground-level.



• The Orwell Bridge spanning of the River Orwell brought considerable involvement for Kwikform Ltd., of Birmingham, on the construction of the 19 viaduct piers using a conventional shutter and scaffold system, in which Kwikstage fast wedge fixing and versatility have been instrumental in saving vital time.

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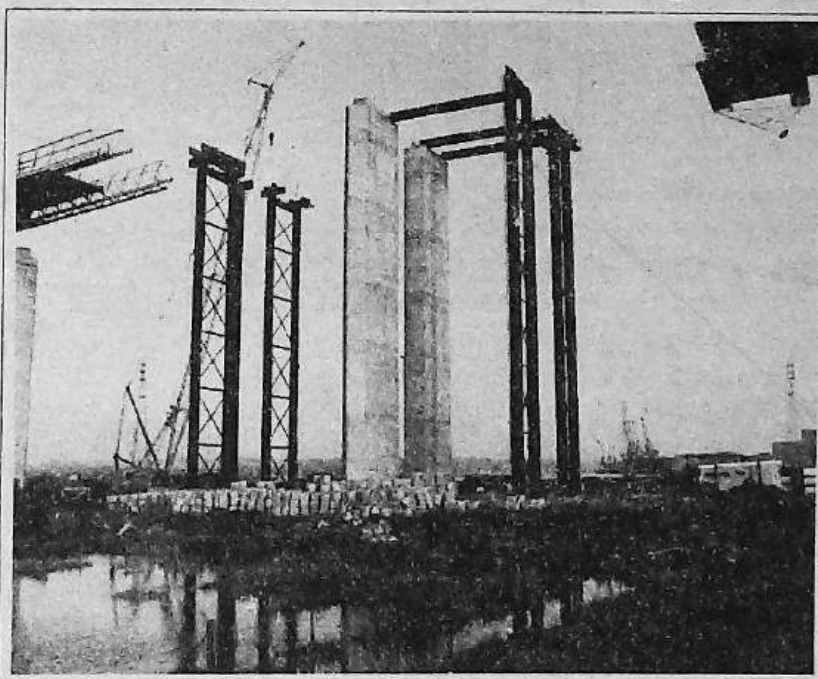
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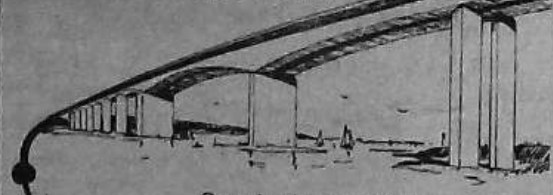
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BRIDGING the ORWELL

More than a graceful arc — a Important link in the mains system

By Don Upshaw

THE Orwell Bridge is already a prominent feature of the Suffolk landscape cutting across the River Orwell in a graceful arc.

At a single glance one would reasonably think that the bridge has but a single purpose, to allow thousands of cars and heavy vehicles to by-pass the streets of a congested Ipswich town.

But the bridge is in effect both a viaduct and an aquaduct as it carries a special 700 millimetre (27 inch) pipe that can cope with a flow of up to eight-million gallons of purified and treated water for domestic and industrial use in Ipswich and its environs each day.

The construction of the Orwell Bridge has afforded the Anglian Water Authority the opportunity

of establishing an important link in the system of mains required to carry water from the newly established Alton Water Reservoir (named after Alton Hall which stood on the now flooded site) to Ipswich, Felixstowe and the surrounding areas.

The new main provides a direct connection from Wherstead Service Reservoir, now under construction, to the new Rushmere Service Reservoir and forms part of a ring — a main system around Ipswich which itself connects together both Alton Water and the already established services of the district.

Alton Water is an important new development.

Historically Ipswich has obtained its water from boreholes sunk into the porous underground chalk to tap the water held within it.

The groundwater

pumped to the surface for treatment could not, in the end, meet the demand made by consumers. Other sources had to be examined.

Engineers devised a scheme to pump water from the River Gipping at Sproughton through a four mile underground pipeline to Tattingsstone where a natural valley provided the ideal site for a reservoir.

The scheme was approved by Parliament a decade ago and work began the same year, 1972.

A maximum of

30-million gallons a day can now be pumped from the River Gipping to Alton Water Reservoir which has a 390-acre surface area and can hold up to 2,100 million gallons of water.

The water in Alton Reservoir, being surface supplied, has a higher concentration of nitrates and phosphate than from a ground or borehole supply.

The current prototype treatment plant has been devised and tested to deal with the chemicals in solution. A larger capacity treatment plant will be built to cope with increased demand from Alton Reservoir.

The Orwell navigation channel would have had to be kept open while the new main was laid and so another channel would have had to be dredged while work was carried out.

Placing the pipe in the bridge has its advantages with the pipe being readily

accessible for any necessary repair work. A pipe laid across the river bed would have been very difficult to repair.

The main pipe has been laid in the central reservation of the approach roads and in the south east box sections of the bridge.

The overall design was the end product of joint consultation between the staff of Sir William Halcrow and Partners (consultants for the bridge), C. H. Dobbie and Partners (consultants for the approach roads), and the Anglian Water Authority.

Further, the design was the subject of an agreement between the Department of Transport and the AWA regarding access for repair and maintenance and other similar requirements.

In the approach roads the pipe is laid in 700 millimetre diameter ductile iron

• continued next page

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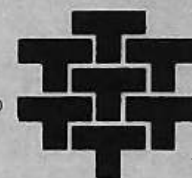
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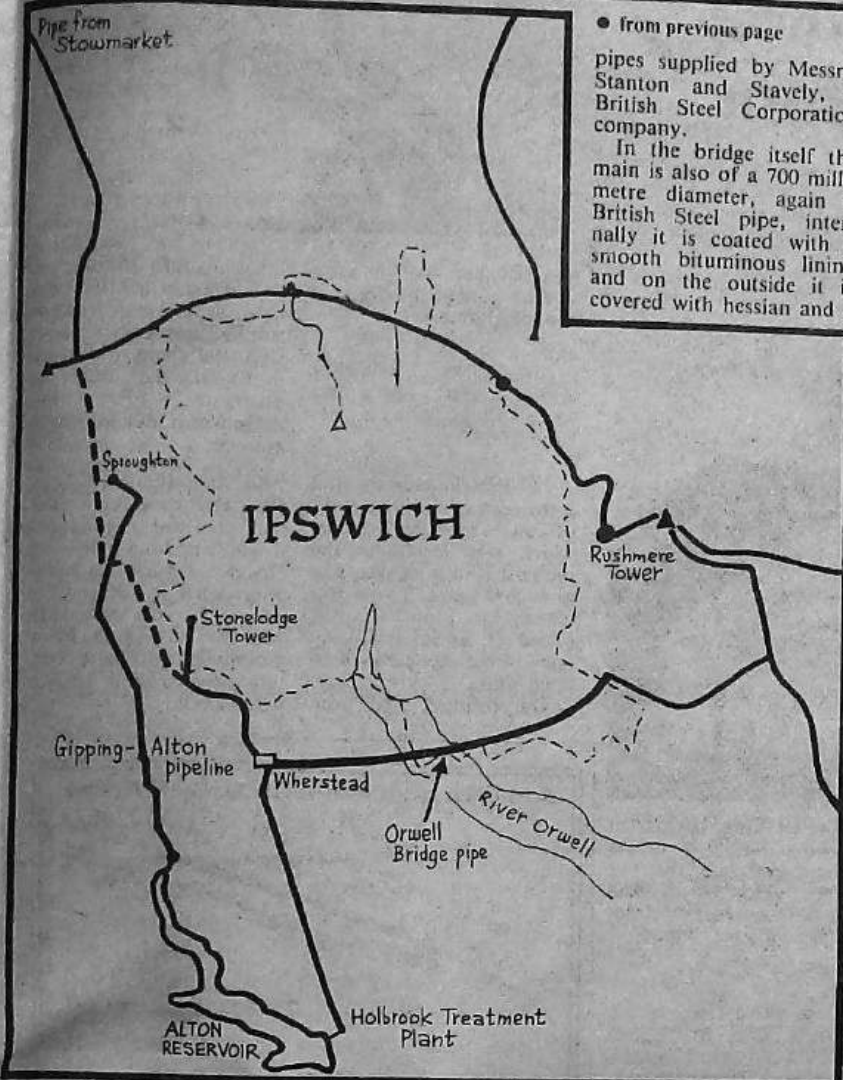
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viaduct and aquaduct, too



• from previous page

pipes supplied by Messrs. Stanton and Staveley, a British Steel Corporation company.

In the bridge itself the main is also of a 700 millimetre diameter, again a British Steel pipe, internally it is coated with a smooth bituminous lining and on the outside it is covered with hessian and a

bituminous material to prevent corrosion. Johnson Couplings are used as the joints in the bridge to afford a measure of flexibility.

Each end at the point where the pipe emerges from the bridge there are fitted special stainless steel bellows.

The purpose of these bellows is to absorb and deal with the differential between the bridge and pipeline when the ambient temperature varies.

The bridge itself will contract when temperatures fall, and expand when they rise.

The pipe itself will not be subject to contraction and expansion as the water rushing through it will not vary in temperature as much as the outside air.

But the bellows have had to be installed because of the temperature induced motion of the bridge.

Stevin Construction, the main contractors, laid the pipe in the bridge, on the north east approaches it was laid by Costain Civil Engineering and on the south western side it was laid by the Cementations Company Ltd.

The work on the sections of the main outside the roadline, required to connect to the existing system, was carried out by Messrs. Edward Thompson Ltd., a local company from Eye.

The estimate final cost for the mains pipeline in

and connected with the Orwell Bridge is £805,000.

Half of that is the water authority's contribution to the strengthening costs of the bridge itself and the other expenses engendered by its presence.

At the time of writing, the final sections of the main are being worked on and it is anticipated that it will be completed and ready for final filling, hydraulic testing and sterilisation when the bridge is open and ready to carry road going vehicles away from and past Ipswich.

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Collier and Catchpole Limited are proud to have been associated with the construction of the Orwell Bridge since the first few days when the Dutch staff of Stevins arrived at the Lodge Cottage (their first cramped office) on the Strand.

As a company specialising in supplying both the building and civil engineering industry and are fortunately close to the construction site, it was natural that the company worked hard to satisfy the daily needs of the contractors.

During the first few days Collier and Catchpole supplied much of the drainage and over site construction materials including the fencing and concrete posts for the Pipers Vale approach on the East Bank.

The requirements of Stevins was for a fast and

knowledgeable service. We believe that Collier and Catchpole Limited satisfied those demands — proved by the continuity of orders received almost daily — right through to the current period.

After the start of the building of the bridge by Stevin Construction BV, the two other linking contracts were placed with Costain Civil Engineering Limited and Cementation Construction Limited for the construction of the roads leading to the bridge. Collier and Catchpole

Limited are again proud to have been suppliers to both of these contracts. Colin Harrison, a director of the company said that it was due to the considerable efforts and knowledge of Bill Gardiner — the yard foreman — and his team of drivers and yard staff, that the operation of supplying the daily needs of the three main contractors and many of their sub contractors, had gone so smoothly.

Also that Derek Cutting — the company's Suffolk representative — was now involved with the supply of concrete rings and gullies for the extension of these contracts — the Seven Hills to Martlesham bypass — being constructed by Roadworks (1952) Ltd.

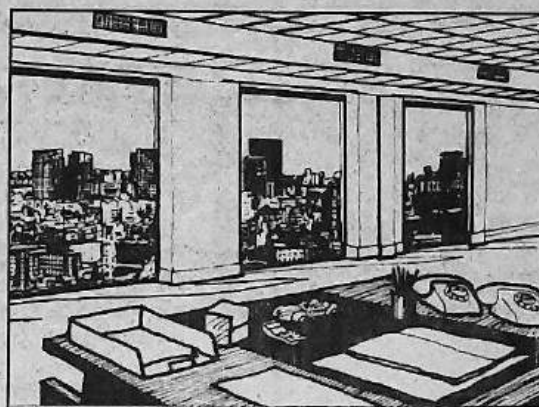
A final comment of Mr. Harrison said that because

of the increased business obtained from these contracts, during a period when the construction industry had been generally depressed, Collier and Catchpole Limited had been able, at their Ipswich premises, to take on three extra employees — one of whom was from the Manpower Services Commission Youth Opportunities programme.

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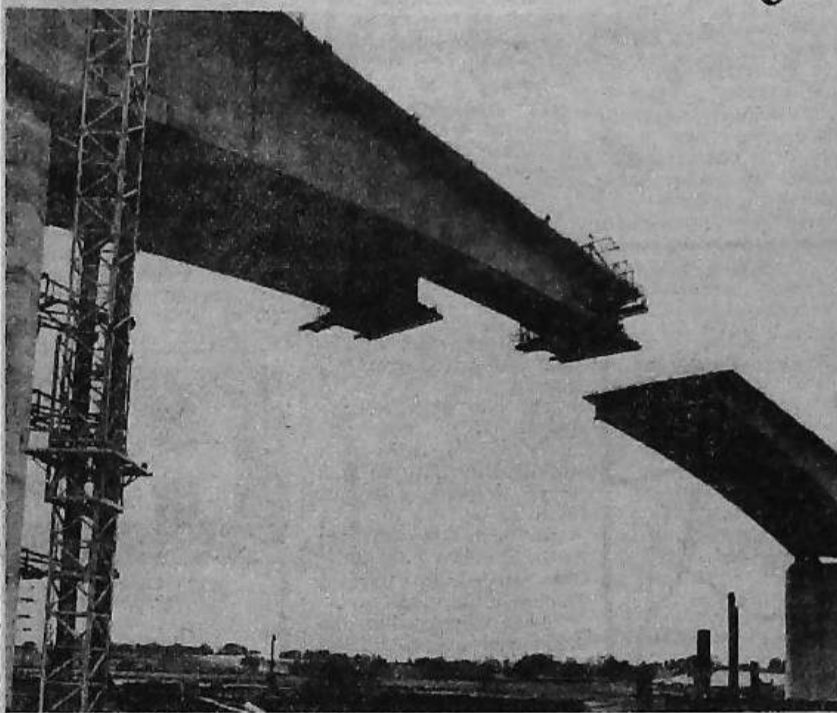
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BRIDGING the ORWELL

Making ends meet



MOST of us who have watched the building of the Orwell Bridge have done so with interest and a great deal of speculation, but for the men who did the building there were only a few surprises.

With several years of planning behind the project it seems inconceivable that mistakes should be made in the building but this is just what was thought when a bystander measured up with his eye and found that the two ends couldn't possibly meet.

It caused a great deal of amusement to everyone on the site when reporters insisted on seeing for them-

It looks like two versions of the Orwell Bridge taken from different angles, but the photograph top right is of the Gulliana Bridge in Benghazi, a smaller construction than our own Orwell Bridge below. Both were built by Sir William Halerow and Partners, with pre-stressed concrete box girder superstructure erected by the balanced cantilever method.

selves, that the sections would meet in a curve, according to design.

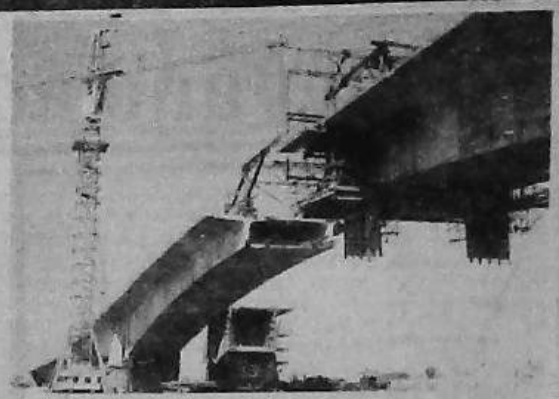
Mr. Sydney Telford is coming close to the end of his term as chief site engineer on the bridge project. He heads a team of 23 — engineers, technicians and inspectors — whose job it has been to supervise and monitor the progress of the building, a mammoth task in itself.

He and his team are employed by Sir William Halerow and Partners, a firm of consultant engineers who have been involved in many bridge and dam projects here and abroad, including a smaller version of the Orwell Bridge in Benghazi.

Mr. Telford was full of praise for the contractors "Ipswich was spared a great

deal of disruption, it was Stevin's policy to by-pass the centre of the town when bringing in materials. As many of the materials as possible were bought locally, which gave a boost to local businesses".

In Halerow's site headquarters there is a collection of items which came to light during the initial excavations including a large piece of stone which stopped the entire operation for some time. "We were drilling through chalk when we found we could go no further. Not knowing what the obstruction was we called a halt, there was the possibility that it was an unexploded bomb, so a diver went down to investigate," said Mr. Telford. It turned out to be Sarsen stone which is often found



in chalk, and is of the same composition as the stones at Stonehenge.

Among the collection also are sharks teeth and whelk shells with a left hand spiral.

The most interesting find is the copy of the indentures of an apprentice doctor which was found in the mud, still in a canvas bag after 200 years. The workman who found it just tossed it aside and only later in the day decided to open it up.

The contract had been

torn into four and one can only imagine that the young man, having completed his studies, left Ipswich on a ship and thankfully threw overboard the chains of apprenticeship. The document is now in Ipswich museum.

By the middle of next year the contractors and their men will be gone, and it won't be long before the Orwell Bridge and its approaches will cease to be a topic of conversation but a vital part of everyday life, a monument, to 20th Century Ipswich, and the men who built it.

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BRIDGING the ORWELL

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to the
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and next
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Some 50,000 walkers enjoyed the view from the Orwell Bridge last Sunday and, as a result local charities will benefit from several thousand pounds which were raised.

Despite rumours to the contrary the walkways may be used by pedestrians after the bridge has been officially opened. Perhaps not an attractive idea during the week when heavy container lorries will be spinning along, but it might be an appealing idea during weekends, especially during the summer months.

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These pictures of the Orwell Bridge will be the constituency symbol used from now on by Mr. Amedee Turner, member of the European Parliament for Suffolk and Harwich. They have been painted and drawn by Mr. Ken Cuthbert (right), a Felixstowe artist and art tutor, who was photographed with Mr. Turner (left) on Saturday in the Woodbridge gallery of Mr. Denis Taplin.

"I regard the Orwell Bridge as a sort of 'talisman' for Europe in Suffolk and Harwich", said Mr. Turner. "It is, I believe, our biggest man-made object."

Conservative branches will be distributing some 15,000 copies of a leaflet featuring Mr. Cuthbert's drawing of the bridge. European Community money repaid to Britain contributed £10,772,560 — precisely 51.85 per cent — of the bridge's £20,675,917 cost.

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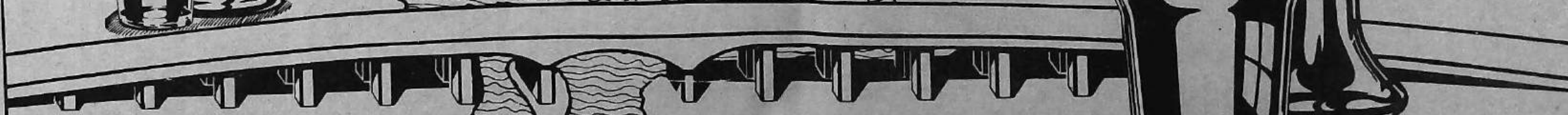
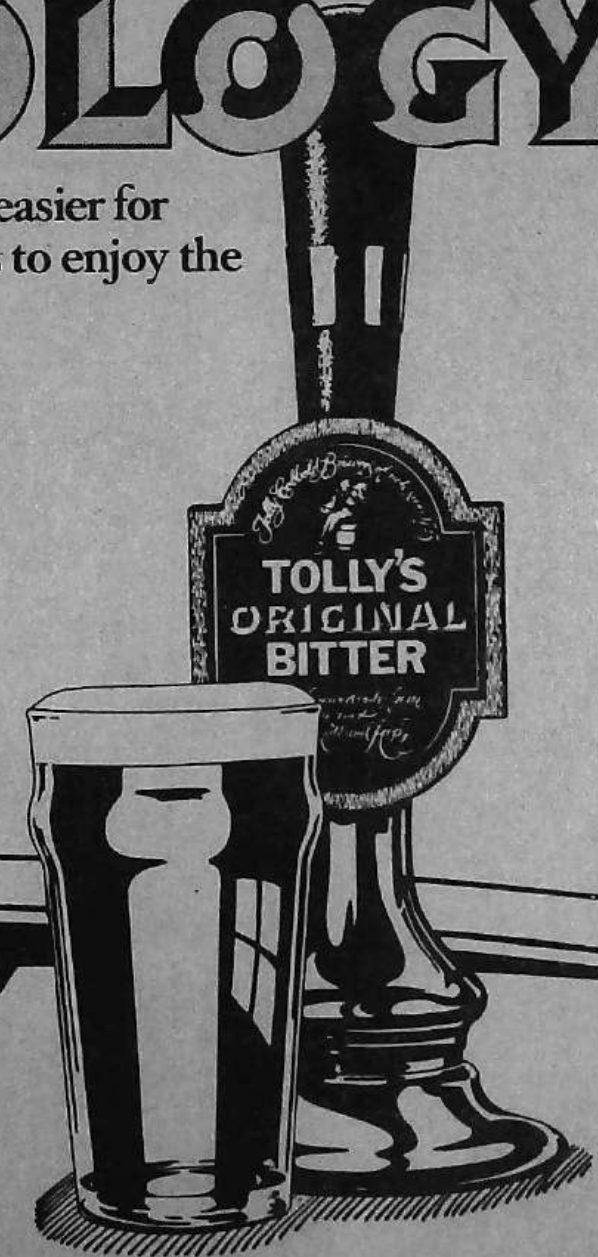
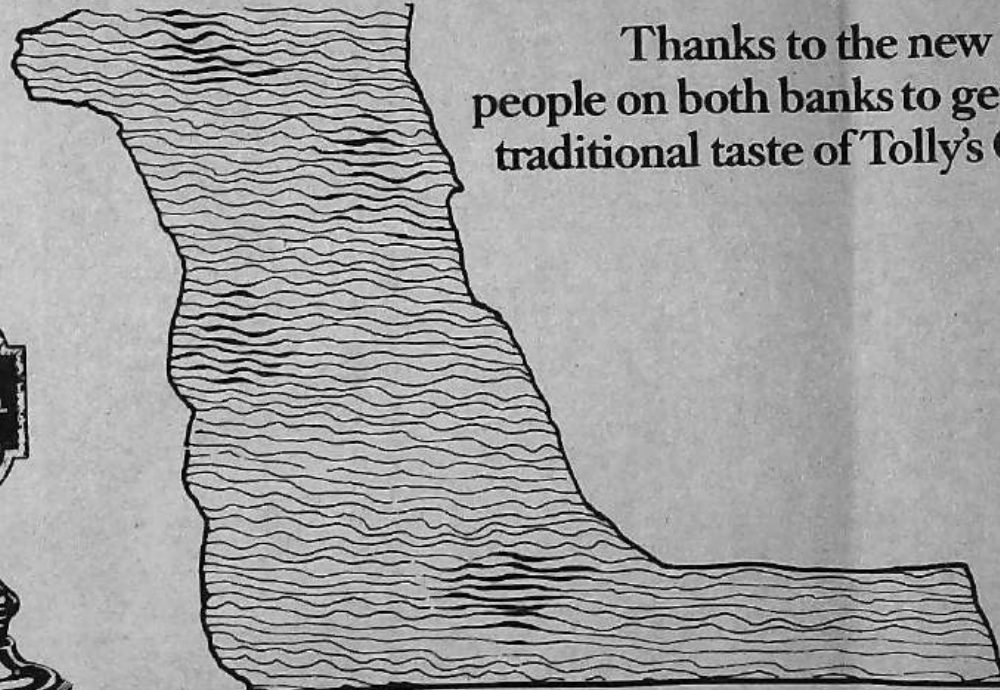
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