

PARRY NEWS



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An Occasional Newsletter from JPM Parry & Associates Ltd (JPA),
Parry People Movers Ltd (PPM) and Pre Metro Operations Ltd (PMOL)

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'LIGHTWEIGHTING' - DOUBLE ACCEPTANCE BREAKTHROUGH

Weight-reduction shown to have vital role to play in transport and construction

Plant export orders begin while light railcar achieves over 99% reliability and punctuality in six months of passenger operation at Stourbridge

PARRY CONCEPTS for transport are on Britain's national agenda with their recognition in two influential documents pointing a way forward for parts of Britain's railways. At the same time it has become clear that a new approach which reduces the weight of raised and intermediate floors holds considerable significance for construction programmes overseas. The Parry companies are treating these emerging factors as the long-awaited justification of years of painstaking development effort.

DfT & Network Rail support

On 8th June the UK's Department for Transport published its consultation document on the new West Midlands franchise, including an explicit reference to the PPM experimental service at Stourbridge and the suggestion that high operating costs could be mitigated by adopting the lightweighting approach. Shortly afterwards, Network Rail published its Initial Strategic Business Plan for 'Control Period 4' (2009-

2014). This also recognises the value of lightweighting to the rail industry.

Since February, the Sunday operation using a PPM 50 light railcar on the Stourbridge Town branch has not missed a single run, achieving 99.5% punctuality in public service.

Halving construction material

The importance of the lightweighting approach in the structural use of concrete was pioneered initially in Kenya and Mozambique in work led by JPA's East Africa based director Nick Evans, and is now breaking through into far wider acceptance on the African continent. Orders for HIGH AND DRY equipment have been placed by customers in Nigeria, Benin, Tanzania, Namibia and Somalia with the same objective in mind: to reduce by as much as one-half the amount of concrete needed to build intermediate floors and flat roofs. Applications include raised platforms built into houses and schools (following the Mozambique example) in areas which are prone to seasonal flooding or tidal surges.

Waffle construction, page 4
Industry sees value, page 3

VIPs VISIT TO SEE PPM CONCEPT



Clockwise from top left: Chris Grayling MP, the Conservative Shadow Secretary of State for Transport (far left) with John Parry and Centro/WMPA representatives on board the PPM 50 railcar on 6th July; southern Africa agent Deva Pannoosami and His Royal Majesty the Ojumu of Ajiranland (Nigeria) visit Cradley Heath on 16th May; Lord Faulkner with JPA's Technical Services Director Caspar Lucas on 19th March; Chris Green visits Stourbridge on 7th April

PENNY DROPS AT THE WORLD BANK

Parry lightweight tile roofing listed as asbestos cement replacement

THE WORLD BANK has begun to take an active role in encouraging substitutes for asbestos fibre, once seen as having a whole range of useful industrial properties but later revealed as a serious hazard to human health. The disease asbestosis affects millions of people worldwide and so the use of the fibre is now banned in many countries. A major report has been prepared by World Bank consultants on the subject of finding acceptable substitutes for the use of asbestos in the manufacture of construction products such as drains, gutters, water storage tanks, pipes and — more widely — in the form of sheets for ceilings, partitions and roofing.

In May 2006, Parry Associates were requested to provide information on their manufacturing processes for producing lightweight microconcrete roofing tiles and to show examples of significant take-up by the market. The response supplied included the specification and use of Parry semisheets and Super Roman tiles for roof construction on thousands of school classrooms in west and southern African countries (see Parry News 42).

The draft report, which lists 'microconcrete [Parry] tiles' as one of twelve possible substitutes for asbestos cement corrugated roofing, began its internal review at the World Bank in early July.

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IN HIS LETTER of appointment to the new Secretary of State for Transport, the Prime Minister states his wish that Mr Douglas Alexander should give his personal attention 'to ensure that the Department's spending is effective and fit for purpose as we move forward'. He also observes that 'more people are travelling by rail than at any time in the past forty years, while performance continues to improve' [but that] 'the benefits transport can deliver must also be measured against its impact on the environment'.

In his first appearance before the House of Commons Environmental Audit Committee on 14th June, Mr Alexander stated that reducing carbon emissions was a 'personal priority'.

Rumbling away quietly in the background – so quietly that even the sounds of birdsong in trees on the far side of the track can still be heard – is the PPM 50 light railcar on the Stourbridge branch line in the West Midlands. The vehicle is delivering well-documented results – over 1000 return journeys, with 99% punctuality and reliability, using less than a quarter the fuel of the conventional heavy weight Class 153 diesel which runs during weekdays. How about *that* for reduced impact on the environment?!

One-quarter the weight of the heavy rail equivalent and costing considerably less to crew, lease and maintain (while still keeping to the same service frequency), the PPM 50 railcar has to be



considered as both 'effective and fit for purpose', to quote Mr Blair. And the passengers like it.

But are Department for Transport officials hammering on our door, asking how to exploit the opportunities revealed by the Stourbridge service? If they are then they must be using feather dusters, because we cannot hear a thing. Subjects such as climate change are spoken about with great eloquence by people with a bit of money in their pockets like pop stars, celebrity scientists and senior government figures. But there is too much finger-wagging and hand-wringing and not enough rolling-up of sleeves. The sad fact is that they don't spot an important

opportunity unless it arrives with an expensive PR fanfare.

Time, as well as other resources, is being wasted; the railcar concept which is delivering such spectacular results at Stourbridge is a world product, needed in cities overseas where the environment deteriorates daily due to dawn-to-dusk traffic jams, from which tonnes of carbon emissions enter the atmosphere.

As the third example of a 'lightweighting' agenda – joining concrete roof tiling which is half the weight of the mass market product and a coffered floor system half the weight of a solid slab – PPM technology is the breakthrough that makes suburban railway construction a real possibility for economies which long ago ruled out LRT or heavy commuter railways as totally unaffordable.

By merging the lightweight concepts and with a fourth lightweight technology – shallow section street tramway track – in gestation, we can address the export market with a strong coherent theme. Our overseas markets would treat lightweight suburban rail as a natural follow-on to other products provided by Parry Associates, a firm that has worked in these markets since the 1970s. Without wishing to sound too impatient, should the sclerosis in transport decision-making in the UK turn out to be so severe that the opportunity may be lost, the export business may pick up the transport baton and run with it over the hills and far away.

Cradley Heath, July 2006

ASSOCIATES, AGENTS AND REPRESENTATIVES

BOTSWANA

Mr Tiedze Bob Chapi
TEC (Pty) Ltd
PO Box 20727, Monarch
Francistown, Botswana
chapi@botsnet.bw

EASTERN EUROPE BSTO

Suite 204, Banderway House
156-162 Kilburn High Road
London, NW6 4JD, UK
Tel: +44 20 7624 0103
ios@bsto.demon.co.uk

GAMBIA

Mr Maurice Phillips
Safari Gardens Hotel
PO Box 4590, Bakau
Fajara Via Banjul, Gambia
Tel: +220 4495 887
geri@qanet.gm

KENYA

Mr Nick Evans
4th Ngong Avenue
PO Box 45156, Nairobi, Kenya
nevans@kenyawebsite.com

Mr Solomon Mwangi
COMAC Ltd
PO Box 1025-00502, Karen, Kenya
solomon@nbnet.co.ke

LIBERIA

Mr James Peters
Petrico
PO Box 20-5544
1000 Monrovia 20, Liberia
Tel: +231 6529501

MALAYSIA

Mr Tony Barry
10 Jalan Beka
Bukit Damansara
50480 Kuala Lumpur, Malaysia
tbarry@evaluateco.com

SENEGAL

Fibro-Mac
Domaine Industriel
BP 5872, Dakar-Fann, Senegal
Tel: +221 825 7354
Fax: +221 824 1394
fibromac@hotmail.com

SIERRA LEONE

Mr Senesi Fawundu
The Concrete Products Co.
100 Bo/Koribondo Road
PO Box 171, Bo, Sierra Leone
Tel: + 232 76639755
theconcreteproducts@yahoo.com

SOUTHERN AFRICA

Mr Deva Ponnosami
Southern Marketing Services
28 Crest Road, Croydon, CR2 7JQ, UK
Tel: +44 20 8651 4212
Fax: +44 20 8651 3377
deva@southernmarketing.co.uk

and

Suite 501 Station Building
'Tourist Junction', 160 Pine Street
Durban 4001, South Africa
Tel: +27 31 304 1717
Fax: +27 31 304 3016
info@eldbn.co.za

SOUTHERN SUDAN

Mr Aniek Tong Atak
ACBS Ltd
20b Ainsworth Way
St John's Wood
London, NW8 0SR, UK
aniekatak@aol.com

SRI LANKA

Mrs Esther David
HDL Development Ltd
78 Canal Road, Hendala
Wattala, Sri Lanka
Tel: +94 21 222 3877
hebdavid@slt.net.lk

TANZANIA

Mr Peter Jones
Kibena Village
PO Box 476, Njombe, Tanzania
Tel: +255 (0) 26 278 2148
wirralwirral@yahoo.com

THAILAND

Mr Geoffrey Wheeler
CVBT
Km 147 Thaninogkhai Road
Group 5, Ban Thin,
Tambon Ban That,
Ampher Phen
Udon Thani 41150, Thailand
Tel: +66 42 248423
cvbt@loxinfo.co.th

UGANDA

Mr John Magnay
MAGRIC (U) Ltd
Plot 103, Jinja Road
PO Box 3218, Kampala, Uganda
Tel +256 41232100
Fax: +256 41244606
jmagnay@infocom.co.ug

ZAMBIA

Mr David Fisher
Shadzam Engineering Supplies Ltd
Postnet 208 Kabulonga
Private Bag E835
Lusaka, Zambia
Tel: +260 95 749313
davidbf2003@yahoo.co.uk

TRANSPORT INDUSTRY RECOGNISES VALUE OF LIGHTWEIGHT RAIL

Network Rail's strategic plan notes advantage of lighter axle load vehicles to reduce maintenance costs

IN JUNE, Network Rail published its Initial Strategic Business Plan for 'Control Period 4' (2009-14). It says: 'Two key issues that will drive rolling stock design in the future are the expectation of reduced journey times and a requirement to become more energy efficient. On the surface these are conflicting requirements, but they are achievable if we can make trains lighter. Lighter trains can deliver improved acceleration and braking, reducing journey times between stations and using less energy.'

Network Rail has a great interest in savings which can be achieved by using lighter rolling stock causing less damage to rail lines and bridges. The Plan continues: 'Working with stakeholders throughout the industry we will be reviewing the way standards drive costs on community rail lines and whether there are any opportunities to reduce the subsequent costs. A number of options are being considered including use of lighter vehicles. As this will mean mixing heavy and light vehicles on the network, we will be undertaking work to understand how this approach can be managed and to understand the changed risk profile.' The experimental operation at Stourbridge shows the way. The plan notes however that for the introduction of lightweight vehicles to be effective, track conditions will need to be better than previously was the case. Earlier the same month, the UK's Department for Transport (DfT) published its consultation document on the new West Midlands franchise. Referring to the Stourbridge Town branch, it identifies that 'operating costs are high and it is possible that alternative options for providing a rail-based service would represent better value for money. The line currently hosts the innovative "Parry People Mover" light rail vehicle which operates an experimental Sunday service. Light rail solutions such as this could represent a way forward for the route.'

These policy statements recognise the benefits to be gained from innovation and greater efficiency in Britain's railways. The opportunity exists for better passenger services to be achieved while reducing both operating costs and environmental impact. Network Rail track access charges are a major outgoing for operators and will be reduced if maintenance costs come down with the adoption of lightweight rolling stock on certain lines.



*Precursor of a lightweight future.
PPM 50 on the Stourbridge Town branch*

The importance of these developments is beginning to filter through to political leaders: newly appointed Secretary of State for Transport Douglas Alexander has expressed an interest in seeing for himself the Stourbridge set-up, and on 6th July there was a highly positive visit by Mr Alexander's opposition 'Shadow' on the Conservative front bench, Chris Grayling MP, who commented that the technology could be used to advantage all over Britain on branch lines and for reintroducing weekday services on certain heritage railways.

Stourbridge: six steps to success

The early adoption of PPM lightweight, energy-saving technology on the Stourbridge

Town branch requires commitments by the following outside organisations:
- The Department for Transport, in charge of the rail franchising contracts;
- The West Midlands Passenger Transport Authority and its executive Centro;
- Central Trains, the franchised train operator currently running the service;
- Pre Metro Operations, as subcontract operator, would have to be ready for a significant expansion from Sundays-only service provider to a full week operation;
- The safety authorities, principally HM Railway Inspectorate, need to be satisfied that risk-control measures for Sundays will work equally well during the week;
- Arrangements for rolling stock leasing need to be provided by the major rail industry companies or new entrants to the market. All of the above requirements are looking attainable at the time of writing. With the successful and approved Sunday operation demonstrating that lightweight suburban rail works at Stourbridge, discussions have commenced with all the key players regarding the potential adoption of this technology even before the end of the current Central Trains franchise in November 2007.

Making the case for lightweight rail

It is understood that Central Trains have found that a business case may exist even for less than a year's operation, revealing the potential for PPM operation from the start of 2007. The train operator has held discussions with Centro and the DfT and all parties are in agreement to proceed with a full evaluation. Meanwhile, a rolling stock leasing company has visited Stourbridge with a possible view to providing finance towards the construction of two 'productionised' PPM 50 railcars (see page 8) for a full service. WMPTA chairman Cllr Gary Clarke has written expressing the support in principle of the Authority for the proposal.

VISITORS ASSESS STOURBRIDGE RAIL SERVICE

THE LAUNCH OF passenger services by Pre Metro Operations Ltd, running a PPM 50 Light Railcar on Sundays on the Stourbridge Town branch, has brought many visitors to the West Midlands wanting to have a look at the reality of lightweight rail transport. On 6th July Stourbridge played host to the Shadow Secretary of State for Transport, Chris Grayling MP. Mr Grayling met with Cllr Keith Chambers and Cllr Angus Adams from the West Midlands Passenger Transport Authority and Robert Smith of Centro. During a subsequent meeting at the Parry offices in Cradley Heath (also attended by representatives from road transport firm Keltruck), Mr Grayling expressed his support for the lightweight rail concept, which he saw as having great potential for public services on both existing branch lines and some heritage railways.

'An impressive vehicle'

On Sunday 19th March, Lord Faulkner of Worcester came to Stourbridge to see the operation in public service at first hand. With over twenty years' experience in the rail industry — he is currently treasurer of the All-Party Parliamentary Group, chairman of the Railway Heritage Committee and vice president of Transport 2000 — Lord Faulkner was very interested in experiencing for

himself this new form of rail service. 'The PPM is an impressive vehicle, which could provide popular, cost-effective public transport in rural areas and conurbations — particularly where it's possible to reopen freight lines to passenger services,' he said.

'We ignore this opportunity at our peril'

The following month Stourbridge hosted Chris Green, whose CV includes heading up ScotRail, Network SouthEast and InterCity prior to railway privatisation and more recently chief executive of Virgin Rail Group, director of Network Rail and chairman of the Railway Forum. Having seen the PPM railcar in action, he said: 'The Parry People Mover is the technical breakthrough that we have been waiting for. It offers Community Railways the chance to dramatically reduce both their train and infrastructure costs on the most lightly used lines. We ignore this opportunity at our peril.' Other visitors to Stourbridge have included respected rail journalist Alan Williams, who writes in Modern Railways magazine, representatives from passenger transport executives both in the Midlands and elsewhere, and visitors from Nigeria who see the potential for PPM-style transport to improve quality of life and economic development in West Africa.

SCOTTISH CHARITY EXTENDS POTTERY IN TANZANIA



A trainee making a clay pot in Songea

RUVUMA DEVELOPMENT Association, a charity based near Edinburgh in Scotland, has sent potter Alice Macfarlane to its project based in Songea, Tanzania, which already has an established pottery training workshop where local staff will learn the process of making clay roof tiles using a plant purchased from Parry Associates. Ms Macfarlane attended a short course in this procedure at our workshop in Cradley Heath prior to flying out to Tanzania.

HIGH AND DRY: LIGHTWEIGHT FLOOR SYSTEM USING PRECAST WAFFLE FORMS

'Simplify and add lightness,' said carmaker Henry Ford nearly a hundred years ago, referring to the world-beating 'Model T' design

The same could be said about concrete floors...



PRECAST WAFFLE FORM technology is the latest 'lightweight' construction system pioneered by Parry Associates' East Africa based director Nick Evans, a structural engineer. In-situ pouring of concrete requires a complete floor of plank timber or plywood to be erected, supported by props. This slab is normally made solid with uniform thickness. Waffle technology cuts down the amount of concrete by introducing a series of cavities on the underside of the slab, reducing its weight by as much as half.

Placing of the units prior to pouring in-situ concrete is quicker than conventional carpentry work and the amount of reinforcement steel is reduced. The internal shapes of the units are defined by straight edges and cast interesting shadows and, as an intended benefit, are better acoustically than a flat ceiling. Artificial lighting can be placed on the ribs or within the upper recess. The quality of the exposed surfaces is good enough to avoid the need for plaster. Exposed surfaces will need improvement for acceptance in up-market offices, although a sprayed paint finish may be acceptable.

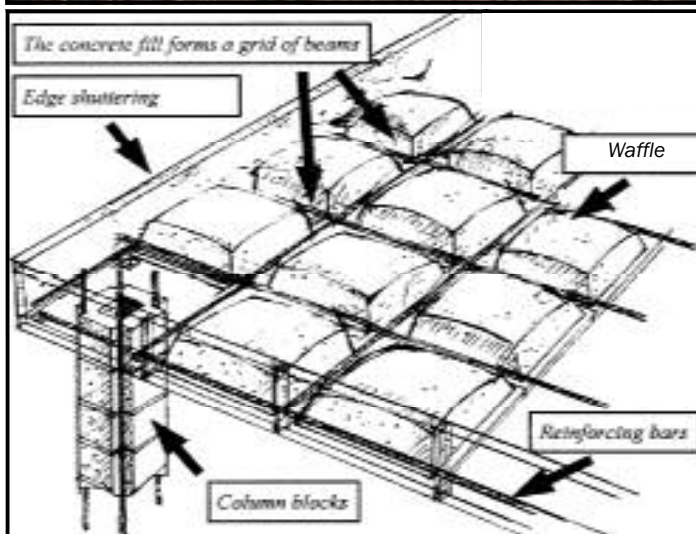
Water tank applications

Nick Evans first introduced precast concrete formwork elements to provide cover for the larger versions of Parry water tanks in the early 1990s. Many thousands of tanks are in use around Nairobi because the city has outgrown the capacity of the water distribution network, so they have a role receiving water at night-time periods of low demand and collecting rainwater off roofs.

The opportunity to use the waffle forms in building construction began to emerge in the 5-year period after 2000, during which the price of typical timber formwork in Kenya rose by 300%. Large contractors employ reusable steel formwork but, even if available to hire, this would be too expensive for small contractors. Nick Evans first used the precast forms which produce the lightweight waffle floors while building his own house in the western suburbs. As builders in the neighbourhood noticed the advantage, the market then emerged spontaneously based on sales of the waffle forms at the factory gate. A team of four men carry out the production by manual methods. Minimum order value in the Nairobi operation is £500. In the Kenyan application the unit module is 900mm square and depth varies to produce a



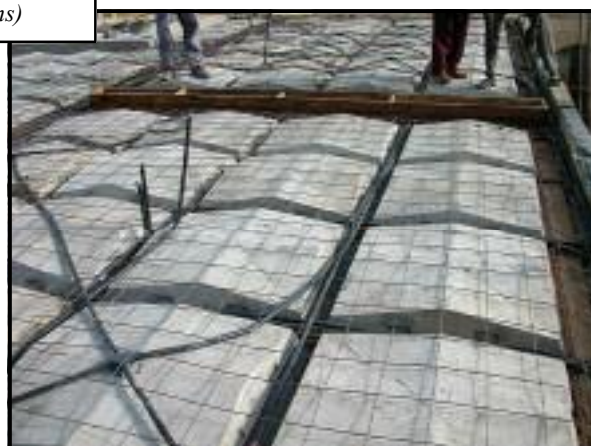
Newly-made waffle forms curing in the open
(Photo: Nick Evans)



Upper picture: view from below of a completed floor formed on to precast waffle units in Kenya

Lower picture: waffle forms, steel reinforcement and electrical conduits in place before the concrete is poured

(Photos: Nick Evans)

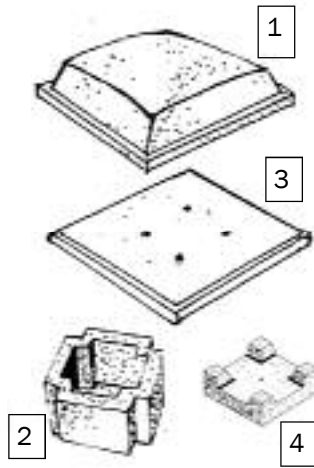


General Guidelines for 900mm square waffle forms	
Floor Final Structural Depth	Span Between Columns
200 mm	4 metres
300 mm	6 metres
400 mm	8 metres

General Guidelines for 600mm square waffle form	
Floor Final Structural Depth	Span Between Columns
150 mm	3.6 metres

The Kenyan units and slabs are designed to comply with BS 8100 *Structural use of concrete*. While the company has its own quality procedures for larger schemes, the technique may require acceptance by statutory authorities. An approach has been made at local authority level as a prelude to obtaining approval from the central government. The market in East Africa is in multi-storey commercial buildings and domestic houses for middle income customers. These buildings are generally beyond the reach of statutory authorities but are an example for reference and have steered the growth of the business.

- Components required for the Parry waffle system for raised floor construction:
1. Waffle forms
 2. Hollow column blocks (void size varies to suit loadings)
 3. Column top slabs
 4. Concrete bracket to assist positioning of the forms



'High' was a play on words to emphasise the case for erecting otherwise conventional classrooms on tall columns. This system created not just a two-storey classroom but a high level place of emergency refuge for the community should the Limpopo River again burst its banks as in 1999. During this flood disaster thousands of people had to take refuge in the tops of trees for several days. The latest news from Mozambique is that the Department for Education is now planning to introduce elevated classrooms in a standard approach in flood-prone areas of the country.



Making a waffle on the Parry vibrating table

Productionisation

Work has continued meanwhile in Cradley Heath on productionising the manufacture of the waffle forms, column top slabs, and a cheap throwaway bracket to support the formwork while the concrete sets.

One of the earliest examples of the latest form of waffle floor produces a slab of only 150mm structural thickness. It has been applied in the construction of prototype railway platforms and in a prototype dwelling designed for coastlines in areas vulnerable to tidal surges and tsunamis (see Parry News 41). The HIGH AND DRY component manufacturing procedure is as simple to operate as making a Parry tile, and even uses the same standard large format vibrating table.



600mm shallow profile waffle floor seen from below

THE £1,600 RAILWAY PLATFORM

The proof of the value of these techniques is the interest expressed by potential customers, including independent railways in the UK. Asked by one railway to provide information for a two-coach (forty metre) platform, JPA was able to estimate a material cost of under £1,600, after purchase of Parry building materials machinery and training by a Parry technician. This method is ideal for volunteer-run organisations such as heritage railways, which generally have labour available but a shortage of capital. In other situations, the building elements can be manufactured and supplied to site.



Maintenance platform at Stourbridge in course of construction: the precast waffle forms are in position supported by temporary props (the side shuttering is made with plywood strips). Wet concrete is then poured on and left to set

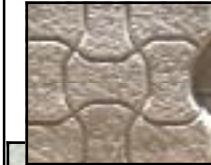
INTERNATIONAL NEWS IN BRIEF

LIBERIA

JPA associate James Peters of PETICO has ordered 400 Super Roman moulds which are urgently needed for a World Bank financed education project in Gbarpolu county, in the north of the country.

SOMALIA

Forward Germany, a private sector organisation, has become the latest customer to purchase elements of concrete waffle technology. They are already manufacturing micro-concrete products and paving slabs using Parry equipment delivered previously.



SUDAN

One order for a Super Roman roof tile plant bought to build a Church in the diocese of Mundri, Southern Sudan, is on its way via Uganda, and an enquiry has been received from another church organisation interested in building water tanks and micro-concrete elements in Yambio. A selection of moulds and other equipment has been purchased by a private sector customer for a project in Khartoum.

TANZANIA

A representative of Willowdale Seventh Day Adventists church group in Canada has visited JPA in connection with a building project in Tanzania, which may use waffle technology along with a small roof tile production plant. Enquiries from Jamaica, Ghana, St Vincent, Liberia, Costa Rica, Australia and Pakistan have been followed up with technical information and quotations.

But a health warning...

Building concrete slabs which will be over peoples' heads is not an activity that suits enthusiastic amateurism. The approach to transfer the lightweight floor technology in a safe and well executed manner will involve developing an international franchise package. As well as providing equipment and detailed manuals, the franchise will provide access to structural engineering advice about material specification reinforcement sizes and the variations necessary for areas subject to extreme climate and seismic disturbances. Advice will also be given on liaising with local architects and engineers in order to obtain agreement with the authorities on the drafting of a local building standard based around BS 8100.



A 'High School' in Mozambique, built using Parry technology to provide flood protection (Photo: Samantha Tuck, MRDF)



PPM 35 railbus No. 238 after arrival at York on 18th May

PPM AT NRM

'Bristol' railbus forms part of Green Railways exhibition

Display at York leads to interest from Shildon site

THE PPM 35 Electric Railbus, which carried over 50,000 passengers on the Bristol Harbourside railway between 1998 and 2000, has been restored to fully operational condition in JPA's workshops and exhibited at the National Railway Museum in York.

The visit followed an approach by the NRM, which wanted an example of modern environmentally-friendly rail technology to be part of their 'Green Railways' event during the summer half-term holiday. It was realised that the ideal vehicle would be Bristol No. 238: the low-floor, modern outline railbus that was the tenth PPM vehicle to be built.

A three-way team consisting of JPA, the National Railway Museum and Sustraco — the railbus's owners — brought the project to fruition. This included moving the vehicle from Derbyshire to the Parry site at Cradley Heath, refurbishing it and making it fully operational, and taking it to York for the event's start in late May. Surrounded by information boards explaining the advantages of lightweight rail transport for the environment, the railbus made a popular exhibit which linked with the Wensleydale Railway's display stand at the same event. The temporary display at York has now attracted the attention of the NRM's other site: 'Locomotion' in Shildon, County Durham, where the main museum is some distance from the entrance. Investigations are now being made into the potential use of PPM technology to provide a shuttle service for visitors along the existing demonstration track.

CALL TO REVISIT BEWDLEY-KIDDERMINSTER RAIL PROPOSAL

POWERFUL POLITICAL figures including the Conservative Shadow Secretary of State for Transport Chris Grayling and the independent constituency MP for Wyre Forest have reacted positively to the suggestion that heritage railways possessing useful stretches of railway line might cooperate with community rail projects to take advantage of lightweight rolling stock based on the Stourbridge model. A previous proposal for Bewdley-Kidderminster rail services sharing the tracks of the Severn Valley Railway (SVR) using PPM technology did not proceed after the project consultants apparently applied heavy rail costings and as a result overstated both the capital and the operating requirements. This was alluded to in 'Derailed by the Wrong Kind of Consultants' (Parry News 38). The case for linking Bewdley to the national rail network is very strong as long as the will is there.

The 'lightweight' approach for constructing railway buildings (see page 8) means that a maintenance depot for the railcars can be built for far less than normal railway practice suggests.

The example of the Severn Valley Railway, particularly the suburban end of the line between Bewdley and Kidderminster, is just the sort of application described by Shadow Secretary of State for Transport Chris Grayling when advocating the wider use of PPM railcars to ease local traffic congestion. Wyre Forest MP Richard Taylor had earlier initiated a prospect of reopening the line using conventional heavy rolling stock but had been told that the economics just did not 'stack up'. If the prospective savings now shown to be possible at Stourbridge can be applied also to Bewdley, the case for the community rail service would become much stronger, he observes, and when the SVR is prepared to discuss it he would be prepared to convene an exploratory meeting.

LIGHTWEIGHT SUBURBAN RAIL POTENTIAL IN CARDIFF

Parry move to alert Welsh transport minister to Bay link opportunity



The Bay shuttle at Cardiff Queen Street. The trip to Cardiff Bay takes four minutes, but the walk at that end will be longer!

NOTABLE IN recent years has been Wales's ability to conceive, construct and commission major projects, the reality of which has matched or exceeded the original vision. The Millennium Stadium has stood in for Twickenham and Wembley, while the new National Assembly complex and other developments around Cardiff Bay have (for the time being at least) left Edinburgh's efforts in the shade.

Capital's transport need

However, the record is not perfect and Cardiff — like the fine city of York — is discovering that, where it comes to passenger appeal, glossy buses only go so far and the private car remains the preferred mode. With Cardiff's road congestion amongst the worst in Britain, Parry Associates have had their attention drawn to the Stourbridge Town-style railway service that shuttles between Queen Street station to a place which could be called 'Nowhere-in-Particular', where Hemingway Road joins Lloyd George Avenue (see Parry News 44).

The actual station name is 'Cardiff Bay', but anyone arriving on a rainy day hoping to have got to their destination — the Millennium Arts Centre or the National Assembly, for example — is bound to get rather wet: they still have a ten-minute walk ahead of them. The Lightweight Suburban Railway technology now being demonstrated at Stourbridge should be the answer to getting the line the vital half-kilometre

closer, as well as providing more stops. This opportunity is being made known in an approach to the transport minister Andrew Davies.

Support for local transport solution

Contacts with Assembly Members, Cardiff Council and the local MP Alun Michael indicate wide support for this concept. Further planned development in the Bay area, including a Sports Village, will only increase the numbers of people and vehicles trying to squeeze into a small area unless transport improvements are made. The lightweight approach gives the potential for expansion of the system. It is also suggested that the completed railcars could be rolled-out from the nearby Pullman engineering works at Cardiff's Canton rail site.

PPM POSSIBILITIES FOR KEITH & DUFFTOWN



Dufftown station and the K&DR's current 'heavy' train

PPM'S SCOTTISH director Bruce Mackie has visited an independent railway which, much like the Wensleydale Railway (see Parry News 44), is aiming to provide public transport services for residents and visitors in the north of Scotland.

Located in the heart of 'whisky country', the Keith & Dufftown Railway provides a potential link with the national rail network at Keith, running through stunning scenery on the way.

Efforts are being made to see whether a Stourbridge-style PPM service could be introduced.

UNDER ATTACK!

Rapid response made to secure Stourbridge service & Parry offices



Left: smashed glass on the PPM 50 railcar bears witness to vandalism
Right: Steve Raggett repairing the roof of the JPA offices



THERE WAS NOT much to cheer about on 16th May when PPM director Geoff Lusher received a telephone call from Network Rail control. Members of the public had reported a gang busy bombarding the PPM railcar with half-bricks and stones from the waste ground outside the palisade fence which surrounds its compound. By the time the police arrived the miscreants had fled.

Repair work commenced immediately so that public services the following weekend could continue as normal. Matters had already been complicated when Parry Associates' normally secure office premises (three miles from Stourbridge) were thrown into disarray by determined intruders who decided to gain access to the main building by

breaking through the roof and ceilings. Curiously nothing was actually stolen, but shelves and files which were turned over and overnight rain coming through the damaged roofs disrupted business for some time.

Even more serious though was the vulnerability of the Stourbridge venture should the railcar be put out of service by further vandalism. So there was only one thing to do — make the compound more secure by constructing a robust, high perimeter wall within the fence (see page 8).

Work began on this immediately despite shortage of funds and within four weeks the situation had been made very much more secure. All the vehicle damage was repaired by the following Sunday when passenger services ran as normal.

RICHARD BOWKER REJOINS THE FRAY

RICHARD BOWKER CBE, one of the most notable names in the UK transport industry, relinquished the post of Chairman of the Strategic Rail Authority following the decision by former Secretary of State for Transport Alistair Darling to reorganise the rail industry, splitting the functions of the SRA between the DfT and Network Rail. Mr Bowker was awarded his CBE for his services during the most turbulent times in the industry, second only to World War II.

According to recent press reports, he is now returning to the private sector having accepted the post of Chief Executive of the National Express Group, one of Britain's largest transport operating groups; among many other subsidiaries is Central Trains, which currently operates the weekday service on the Stourbridge Town branch.

The news is significant from the 'Parry' perspective because as SRA Chairman Mr Bowker visited Stourbridge during the period in 2002 when it had been hoped that the Sunday Service would have commenced. He stated at the time that it would be surprising if, by the time of the next franchise, the sophisticated heavy rail diesel unit were still in service when such a potentially economic light railcar as the PPM 50 would do the same job.

HOLDFAST'S RUBBER HIGHWAY CONCEPT SUGGESTS ROLE FOR PPM-TYPE RAILCARS



Rail vehicles must interact with cars but not require electrification — PPM is an option (Photomontage: Holdfast)

ON 1st JUNE 2006 a large number of transport professionals, public officials and representatives of contracting firms gathered at Corby in Northamptonshire to view a working demonstration of the 'Holdfast Rubber Highway'. This was funded partially by the government's 'WRAP' (Waste & Resources Action Programme) initiative and partially by Holdfast Level Crossings Ltd — a firm which is a prospective supplier of panels for the Parry Carpet Track concept. The 'rubber highway' concept shows a dual use of a railway, an idea which West County inventor Mr J. Tolland has been suggesting for river bridges in certain places where lightly used branch lines take a direct route but the equivalent road journey is much longer due to lack of a road bridge.

Peter Coates-Smith of Holdfast, promoting the 'Rubber Highway' in a more expansive form, is suggesting that new road corridors into congested towns can be introduced on a self financing basis with light vehicles (not buses and

heavy trucks) running in convoys down the railway on a level crossing type surface and paying tolls for the privilege. There is a 'have your cake and eat it' aspect to Holdfast (and also Tolland's) proposals — although safety rules would prohibit ordinary trains from using the corridor when cars are running along it, they suggest that lightweight tram-type vehicles (such as PPM railcars) could run down the rails, the flangeways for which would still be clear. Light road vehicles would run in between the rail services.

Where the rubber highway brings road vehicles on to railways, Parry developments are concentrating more on bringing light rail vehicles on to roads. Tramways are proven to attract drivers from their cars and the Carpet Track venture aims to maximise their application for the benefit of users of all transport modes as well as the places through which they run.

A car drives along the demonstration Holdfast rubber highway on 1st June



BUILD IT IN ZAMBIA



Year 8 girls from Fiwila Basic School in Zambia (Photo: Andrew Jowett)

INSPIRED BY the potential of Parry Associates tile making technology, the new charity Build IT International (BII) has now started its third project. After work in Vanuatu (low-cost housing) and Liberia (school facilities) BII is supporting a local builder in rural Zambia to complete a new three-classroom block and teachers' houses. Funded through Harvest Help, BII has supplied a Parry tile making machine and seconded Malcolm Alcock to manage the project in its early stages. The work should be completed by November 2006.

Chairman Andrew Jowett commented: 'This new project is an excellent example of how BII can promote a sustainable approach to improving the quality of low cost buildings in Africa. If all goes well, the local builder will continue to work on contracts to improve school facilities for over 600 children over the next two years.' BII was launched last year and is establishing a base of committed supporters. If you are interested in finding out more about its work please visit the web site:

www.builditinternational.org

PPM RAILCAR CONSTRUCTION: EXERCISING THE SUPPLY CHAIN

TRANSITION FROM PROTOTYPE to series production provides the opportunity to 'smooth' and modularise discrete elements of the design in order to take advantage of the skills and facilities of the very best subcontracting firms.

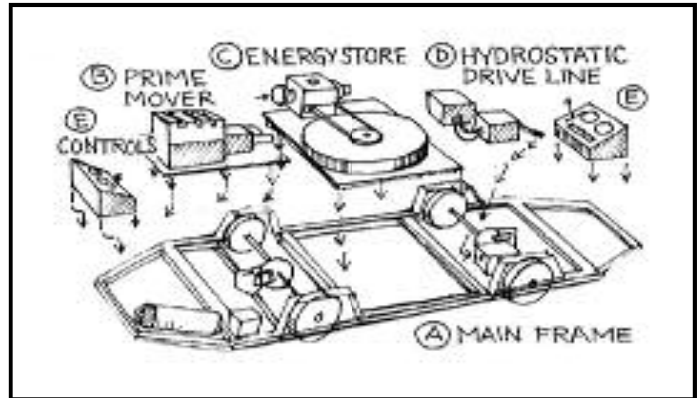
Project management effort is being put into the series manufacture of every aspect of the railcar design with resources concentrated on the PPM 50 vehicle type.

The powered rail chassis will have five modules:

- A. **Mainframe:** comprising a strong external frame extending the length and breadth of the chassis with wheelsets, suspension, air brakes including dc electrically-powered compressor, and a double reduction spiral-helical gearbox mounted on one axle (the street tram version may have two driven axles) with cardan shaft and coupling to join module D;
- B. **Prime mover:** comprising gas engine with fuel tank and exhaust, reduction gearing, fluid coupling and cardan shaft with output coupling to join module C;
- C. **Energy store and transfer:** comprising input coupling, free wheel clutch, three-way bevel box, transfer pulleys, idlers and belts, flywheel and safety housing, and flexible mounting. On the output side of the bevel box is an air operated clutch which disengages on pressure loss;
- D. **Hydrostatic driveline:** comprising a fluid based transmission providing smooth, stepless alterations in gearing including reverse direction and regenerative

braking by close-coupled variable displacement pump and (almost identical) motor. A cardan shaft is included with coupling to the gearbox in module A.

- E. **Controls and instrumentation** comprising the levers, buttons and switches on 'desks' at each end of the vehicle which the drivers need to control every function of operation.



By assembling the five modules into a powered and braked rolling chassis the vehicle builders will have an operating unit capable of independent movement and ready for installation of the body, which will be similarly built in modular form by further supply chain organisations.

LIGHTWEIGHT CONSTRUCTION FOR RAIL PROJECTS

Independent rail sector sees value in Parry building technology for UK

AFTER BUILDING an access platform at Stourbridge Junction using the HIGH AND DRY construction system (see Parry News 44), JPA has progressed to the construction of a complete maintenance shelter for the PPM 50 railcar.

Born of the necessity to improve staff facilities and security for the Stourbridge operation, the building work has seen the full-scale proving of two significant advances in the construction of ancillary buildings for railway use.

Waffle construction of suspended floors has been adapted from two-storey buildings to provide the platform, leading to major savings in time, material and cost. In addition, the main structure of the new maintenance shelter has used a revolutionary approach to temporary construction.



Wall and end door seen from inside the shed (before completion of the roof)

Interlocking blocks and dry walling

The requirement that the STABLE TABLE platform should be capable of removal in a single day by manual labour also applies to the main building. In order to meet this specification, JPA further adapted the HIGH AND DRY system to provide a series of reinforced pillars made up of vibrated-concrete column blocks. Between the pillars, the walls were built up using Parry interlocking blocks, which — being held together by their 'tongue-and-groove' form — require no mortar other than lightly stabilised wet sand. See also pages 4 and 5



PPM 50 railcar No. 999 900 in its new secure home at Stourbridge

'TYPE F' CLAY BRICK PRESSES PROVIDE MANUFACTURER'S IDENTIFICATION

AN ORDER FOR a variety of equipment for a project in Nigeria is currently being assembled in the Cradley Heath workshops. The consignment includes the new 'Type F' brick presses. At the request of the customer, each brick produced will have the manufacturer's name printed in the 'frog' cavity on one face. Manufacturer's identification is a good procedure for installing brand and quality awareness in the mind of the final user.



Examples of 'Type F' bricks made at Cradley Heath works

Parry News compiled by Derek Oldfield, Caspar Lucas, Somia Shafait, Paul Barker, Danny Brunt
 JPM Parry & Associates Ltd, Overend Road, Cradley Heath, West Midlands, B64 7DD, UK
 Tel +44 (0) 1384 569 171
 Fax +44 (0) 1384 637 753
 E-mail: info@parryassociates.com
 www.parrytech.com