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# RHD NEWSLETTER

## Bangladesh – UK Friendship Bridge Opened

Having laid its foundation stone in 1995, it was only fitting that on 10th September 2002 the Honorable Prime Minister of Bangladesh Begum Khaleda Zia opened the Bangladesh –UK Friendship Bridge over the River Meghna between Bhairab and Ashuganj. This marks a milestone for RHD in the development of the national highway network and by potentially cutting the journey time from Dhaka to Sylhet to under four hours, this bridge will have a great impact on the growth of the national economy.

Funded jointly by the Government of Bangladesh (58%), the UK Department for International Development - DFID (21%) and through a loan from Standard Chartered Bank (21%), total project costs amounted to 681 crore Taka. Based on a FIDIC- type contract, the Bhairab bridge project was significantly the first Design - Build contract in RHD.

The UK consultant Halcrow Group Limited was contracted by DFID in 1998 to prepare the tender documents. After the pre -qualification of five UK contracting firms, tender was invited on 16 December 1998 as a design and build turnkey project. After evaluation and negotiation the contract was signed on 11 October 1999 with the construction company Edmund Nuttall Limited and work began on 3 November 1999.

An advanced engineering design underlies the aesthetic detail of the bridge. The main bridge comprises seven 110m spans and two 79.5m spans



of post-tensioned concrete constructed as in-situ segmental balanced cantilevers. The deck was constructed using balanced cantilever methods. Training and technology transfer were an important component of the project and the consultant's and the contractor's experience and technical skills were made available through on the job and formal training.

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## Different Nations Common Issues

At first sight it appears that the mountainous terrain of Nepal and the riverine lowlands of Bangladesh present entirely different problems for the construction and maintenance of a road network. Similarly, given that the infrastructure of Malaysia has approached the standards of a developed country, what could Malaysian engineers learn from RHD? During recent visits by representatives of the Governments of Nepal and Malaysia we understood that all our nations face similar institutional issues in the transport sector.

The exchange of experiences with officials of the Nepal Department of Roads demonstrated that while

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## IDC to Continue

A new Technical Assistance project is currently under preparation to accommodate a two-year extension of the “Institutional Development Component 3”. Recognising that change within the RHD should be considered over a 10-year period and the measured progress achieved under IDC3, the UK Department for International Development (DFID) will fund a continuance of the project to be known as

Consolidating IDC3 (C-IDC3).

A formal agreement between GoB and DFID will be made soon.

The current term of IDC3 will be over in December 2002.

C-IDC3 will focus on completing a number of major initiatives that began under the current phase. This includes the further development of HDM and associated planning tools such as the Road Maintenance Management System (RMMS) and the integration of Management Information Systems into the work of the Department. In particular transfer of ownership for the new physical and financial monitoring system will be completed through the provision of computer equipment and training to key personnel in the RHD.

The consolidation project will also assist with the full introduction of the new contracting procedures and schedules of rates. Training on the new procedures for RHD Contractors will facilitate this process.

Now that MoC has approved the interim reorganisation of RHD, C-IDC3 will support the implementation of this restructuring.

Lastly, facilitating the implementation of the National Land Transport Policy including the provision of Road Fund for maintenance works will be a major activity under C-IDC3.

Appropriate training to support these initiatives in line with the overall strategies for career development for all levels of officers and staff will continue at the RHD Training Centre.

This latest phase of IDC will build on a number of significant achievements that began in 1994.



July 1994: UK DFID fund the first phase of IDC contracting WSP International as lead consultants in association with Mott Macdonald, TRL and DDC.

1996: Progress in first two years of project is slow. Mid Term Review recommends confining activities to reorganisation, training, maintenance and road safety. IDC is renamed IDC2 to be consistent with RRMP2.

June 1998: IDC2 is completed and adjudged to have met objectives. A six-month transitional period (called TIDC) is undertaken to continue ongoing tasks and to develop IDC3.

January 1999: DFID commences support of IDC3 with WSP International retained as lead consultant. IDC3 brings the Ministry of Communications and BRTA under its aegis.

April 2001: Mid Term Review of IDC3 highlights increasing demand on project from GoB and recommends expansion and extension of project duration. Review team envisages future project as Transport Sector Support Programme. GoB confers but DFID procurement procedures prevent time extension under existing contractual agreement.

## Traffic Congestion in Dhaka Addressed

Major responsibilities for improving urban transport in Dhaka City have been entrusted to the RHD. Under the Dhaka Urban Transport Project (DUTP), RHD is to carry out construction of fly-overs at Mohakhali and Jatrabari, the improvement of 20 intersections, integrated corridor improvement (9 Km), road improvement works (10 Km), construction of Tongi Diversion Road and a bridge over the river Turag.

Dhaka Metropolitan City is widely dispersed with over 8 million people in an urban area of about 2000 sq. km. Urban growth of about 2 million people per decade has outpaced developments in transport infrastructure service and management resulting in traffic congestion and frequent road accidents. The Government of Bangladesh commissioned a study carried out between 1992 and 1993 called Greater Dhaka Integrated Transport Study (DITS) and consequently, DUTP was established with World Bank financing in 1995 to implement the recommendations of that Study. DUTP addresses urgent policy issues, physical infrastructure bottlenecks and traffic management constraints through two project implementation units (PIUs) under Dhaka City Corporation and RHD respectively.



## RMIP Contracts Signed

A contract signing ceremony for the implementation of Road Maintenance and Improvement Project (RMIP) was held in Sarak Bhaban, on the 5th September, 2002. The contract signing ceremony between Mr. Md. Fazlul Haque, the Chief Engineer of RHD on behalf of GoB and respective representatives of the consulting firms was attended by the honorable Minister for Communications Barrister Nazmul Huda, State Minister for Communications Mr. Salahuddin Ahmed, Deputy Minister for Communications Mr. Asadul Habib Dulu and the Secretary of the MoC Syed Rezaul Hayat among others.

This Tk.3657.36 million project is divided into 4 contracts namely, Contract I: Chandina, Comilla and Feni Bypass (51.7 km); Contract II: Feni-Chittagong Road Section-I (25.44 km); Contract III: Feni - Chittagong Road Section-II (22.50 km); and Contract IV: Chittagong Port Access Road (13.58 km).

The project has two major components: the Corridor Improvement Component (CIC), and the Road Maintenance Component (RMC). The CIC includes improvement of sections of the strategic Southeast Road Corridor (Dhaka-Chittagong Highway) to facilitate exports and imports through Chittagong Port, and the Port Access Road -- the first access controlled toll road in the country.

The RMC includes periodic maintenance of priority roads within the districts under Dhaka, Comilla and Chittagong Zone through asphalt concrete overlay, bituminous surface treatment and repair of depressions and potholes.

Moreover, the project also addresses policy and legal requirements for privatization by establishing a policy framework and amending highways legislation to enable road investment, toll collections, operation and maintenance by the private sector, and also amending the relevant legal provisions to enable introduction of access control on main roads.

## 24 Projects Targeted for Completion

The current fiscal year is expected to see completion of 24 projects under the ADP in the RHD. Of these, only 2 are on the foreign aided list while 22 others are GOB funded projects. Of the foreign aided projects, Bhairab Bridge Construction Project has already been completed and was opened to traffic in September, while the construction of Doarika-Shikarpur Bridge will be completed in December 2002.

Some of the local projects expected to be completed in the FY 2002-'03 include Second Buriganga Bridge near Babubazar, Rajshahi Town By-pass, Dharola Bridge at Kurigram, Haridaspur Bridge at Gopalganj, Shalutikor and Katakhal bridges in Sylhet, Dakatia Bridge at Chandpur, Jhinai Bridge in Jamalpur-Islampur-Dewangonj Road, Sylhet Town (Railway station) By-pass, Doratana Bridge at Khulna-Bagerhat-Pirojpur Road and the Flyover at 5<sup>th</sup> km of Joydevpur-Mawna-Mymensingh Road.

FY 2002-03 includes 25 new projects, which are all GOB funded with a total allocation of Tk. 57.50 crore. Of these

the following are bridge projects: Bekutia bridge over the River Kocha at Barisal-Jhalokhati-Pirojpur-Bagerhat-Khulna Highway, Dholai Bridge at Sylhet-Shalutikor-Companigonj-Bholagong Road, bridge over Titas at 17<sup>th</sup> km of Companigonj-Muradnagar-Homna Road, and bridge over Munigonj river near Bagerhat town.

Among the new road projects Sylhet-Fenchugonj-MouloviBazar-Jagodishpur Road (including Sherpur link), Aricha-Gheor-Dawlatpur-Nagarpur-Jangai regional road, development of 19 feeder roads in Noakhali districts, Chakoria-Badarkhali-Janata Bazar-Gorokghata Regional Road, Potia-Anowara-Banskhali-Toitong-Pekua-Badorkhai-Chokoria Regional Road, and Boroitol-Mognama Regional Road will contribute to the road network development of these areas. Six new road projects in Comilla district will

improve the communication network of that area. In addition, the upgrading of some feeder roads into regional roads in Chittagong, Cox'sBazar, Tangail, Manikgonj,

Laxmipur, Noakhali, Bogra districts are being implemented through 6 new projects of the current ADP.

With the inclusion of these new projects in the current ADP, the number of projects under the RHD totals 182 against 171 in the last fiscal. With project aid of Tk.1308 cr. against 18 aided projects, the total allocation has been raised to Tk.2506 cr. against last year's total of Tk.2283 cr. towards which a progress of 88% was achieved during fiscal 2001-2002.





## Ghorashal Bridge: Works in Progress

Steps to reduce the dependency on the Katchpur Bridge for traffic movement from the East and North-east are well underway. Although projects like Dhaka Eastern Bypass and Dhaka Ring Road have not started, the construction of Dhaka Bypass (Joydevpur-Bhulta-Madanpur road via Progati Sarani) and the upgradation of Tongi-Kaliganj-Ghorashal-Panchdona (TKGP) Road into a regional highway has progressed significantly.

All these proposals to ease traffic congestion in Dhaka city reduce dependency on the Kutchpur bridge. Each of these routes contains bridges over the Sitalakhya and/or the Balu river separating Dhaka from country's eastern and north-eastern part.

Of these routes, the improvement of TKGP road is almost complete. The construction of a 422 meter long bridge at Ghorashal over the Sitalakhya on this road is half complete. Designed by RHD Design Unit, this 37 crore Taka GoB funded project is scheduled to be completed by May 2004.

Bridging of the river gap at Ghorashal is expected to divert a significant proportion of the traffic from greater Sylhet area to the North and South-west parts of the country and vice-versa.

## Righting Common Misconceptions

As government officials we are all entrusted to use public finances as efficiently as possible and there are many ways that we can make simple economies in our everyday work. This article describes how righting common misconceptions about the maintenance of inspection vehicles can reduce maintenance costs and increase service life.

The use of *flushing oil* during vehicle servicing is a common bad practice. Used engine oil is drained out and the engine oil chamber is refilled with oil commonly known as *flushing oil*. The engine is run for a time, the flushing oil drained and replaced with engine oil. On draining, the “flushing oil” looks black giving the impression that it has usefully removed the dirt from the engine cylinder but this is a misconception.

Flushing oil is a mixture of diesel and low quality (usually a blend of used and burnt) engine oil but it is not a recognised motor product and is only available in Bangladesh.

When the engine runs under normal conditions a thin film of engine oil prevents metal components (the pistons and the crankshaft, in particular) from moving directly against each other. Flushing oil creates no film leaving the crankshafts to roll on the bearings and the piston rings to move against the engine cylinder. This causes friction and may lead to engine seizure.

The engine does not usually seize as there is a residual engine oil film and it is run only briefly with the flushing oil but the engine is certainly badly affected by this process.

In other cases low quality engine oil is used to flush and higher grade engine oil for normal operation. While not quite as harmful to the engine, it is clearly a waste of money.

Not keeping track of the vehicle's service history is a second poor practice. As a rule of thumb vehicles are serviced once a month, once every two months or according to the preference of the user. This is suitable for Headquarters or Planning Wing vehicles but most of our working division vehicles run four to five thousand kilometers per month.

According to the manufacturer's guidelines, under the severe working conditions present in Bangladesh, we should service these vehicles every 20 days. Failure to service vehicles adequately means that engines have to be overhauled every 10 months to a year. But these engines should give trouble free service for at least two years.

By using the correct lubricants, maintaining proper oil change procedures and through servicing at suitable intervals, we can all take simple measures to ensure our vehicles are maintained economically. Let us adopt the proper practices and use public finances as efficiently as we can.

## RSAP Require More Attention from GoB

Implementation of Resettlement and Social Action Plans (RSAPs) requires far more attention from the government. Experiences in some foreign aided projects reveal that absence of representatives to form joint verification teams responsible for assessing the project affected persons (PAPs) causes problems for RSAPs. Moreover, dispute over ownership of structures in the acquired area, lack of proper records of claims and running court cases significantly affect execution of the plans. Shortage of GoB staff for resettlement and their lack of relevant training are also other sources of delay in delivering benefits.

Resettlement Action Plans (RAP) are prepared for resettlement and rehabilitation of the persons likely to be affected due to acquisition of land for the construction of development projects. Generally the RAP for a project is prepared based on various pertinent documents including the Terms of Reference of the project, socio-economic and resettlement survey findings, GoB land acquisition policy and donor's involuntary resettlement policy and guidelines.

### RHD Resettlement Organisation and Framework

At present RHD, in agreement with the Donor, hires an NGO to implement the RAP. The selected NGO works in close cooperation with the concerned Deputy Commissioner's office at the district level for the delivery of compensation for land, structure and crop-related issues.

Initially the Implementing NGO (INGO) constitute Resettlement Advisory and Grievances Redress



Committees locally to encourage participation and ensure transparency thereby safeguarding the rights of the people affected by the project. The overall implementation schedule is based on the principle that all PAPs are paid their due resettlement benefits including income restoration assistance prior to relocation.

Amongst the agencies involved, the DC office has the legal responsibility for paying compensation directly to the PAPs. RHD (as the requiring body) and the INGO work closely with the DC representatives during verification of affected properties and for a market survey of properties to ascertain *current market value* before budgeting the total compensation payable to the PAPs. The implementation of the RAP is monitored both internally and externally.

### Legal Framework and Compensation Policies

Land acquisition and resettlement of the PAPs is carried out in accordance with GOB *Acquisition and Requisition of Immovable Property Ordinance II* with subsequent amendments in 1993 & 1994 and DFID/DAC-OECD *Guidelines for Aid Agencies on Involuntary Displacement and Resettlement in Development Projects (1992)* which requires that the displaced persons should be compensated with replacement land or cash at the current market value of land relocation/transfer grant and allowances for income restoration. The absence of legal titles to

land should not be a bar to compensation.

### RAP for Rupsha Bridge

The construction of Rupsha Bridge will dislocate 122 households with different types of land, structures and community facilities. The RAP will cost about Tk.36 Lakh for land acquisition and resettlement. The project engaged an NGO named RDM for implementation of RAP.

### RAP for Bhairab Bridge

Based on a socio-economic survey, a Social Action Plan (SAP) has been under implementation by CCDB since October 1999. So far CCDB has identified 3125 PAPs all of whom have been compensated according to the compensation policy matrix of SAP. A Social Development Fund was established under the SAP to assist affected people in restoring income and economic rehabilitation activities. RHD has an approved budget of Tk. 63 cr for SAP implementation and the progress achieved so far is 62%.

### RAP for RRMP-III

ASOD has been working on the RAP of this project and the progress achieved is 50%. A total amount of Tk. 116 cr will be used for resettlement activities of this project.

### Improving RSAPs

Despite clear guidelines and a sound implementation framework and process, GoB should promote greater coordination between the DC office and INGO during initial assessment for formulation of RSAP. This will result in better management of the RSAPs including quick dispersal of transfer grants and allowances to PAPs.

## RHD Looks to the Future

The world is constantly changing. The field of highways engineering and management is also in a constant state of development as a result of new technologies, policy changes and new demands from the public. In many cases younger professionals follow innovations in their field and adapt to new technologies and systems with enthusiasm. A question for many organisations is how can the abilities of these “juniors” be harnessed?

On 10 June 2002 the Senior Management Committee approved the formation of “RHD Future Looking Junior Forum (FLJF)” as a group of junior officers responsible for investigating and reporting on important developments concerning the RHD.

A competitive selection process for membership of the FLJF took place at Sarak Bhaban on 21 August 2002. Eight members were selected from 33 candidates to serve for 2 years. Another 8 junior officers will be selected in 2003

to give a full complement of 16.

Senior management has requested the FLJF to support the Department in 3 key areas: inter and intra organisational communications, promoting the use of IT in the Department and investigating current and future issues in highway engineering and management.

Beginning its activities in September, the FLJF has been responsible for producing this Newsletter as a part of its communications activity. Members of the forum have researched and developed all the articles with support from the Editor. Moreover the FLJF is surveying the uptake of IT in the Department. The survey will be published quarterly and start in the next issue of the RHD Newsletter. Other initiatives are also in the pipeline.

The FLJF is a sub-committee of the RHD Senior Management Committee (SMC) currently under the overall Chairmanship of the Member Secretary, SMC, but coordinates its meetings independently.

## Chief Engineer Presents in Havana

In September the Chief Engineer, Mr Md. Fazlul Haque presented a paper entitled “Institutional Development in the RHD” at the PIARC (World Road Association) Developing Countries Seminar in Cuba.

The Chief Engineer outlined the history of institutional strengthening in RHD and paid particular attention to the progress and achievements of IDC3 including its objectives, operational methods and potential future directions. Mr Bill Hodgkinson, Programme Director IDC3 also attended.

The seminar in Havana covered critical issues on road financing and highways management for developing countries. Henry Kerali of Birmingham University presented the latest developments in road funds and a World Bank representative unveiled a toolkit for public private partnerships.

## Six RHD Officers Gain DFID Fellowship

In the continuing effort to develop human resources, RHD is sending six junior officers on Master’s Degree Courses for 2002/2003 under IDC3. The candidates are Md. Shabbir Hasan Khan, SDE Monitoring for M.Sc. in Computer Networks and MIS at Derby University; Hasibul Hossain Khan, AE, BRRL for M.Phil in Road Pavement Design at Birmingham University; Misbah-uddin Khan, AE, HDM for M.Phil in HDM at Birmingham University; A.K.Md. Fazlul Karim, SDE Maintenance Subdivision for M.Sc. in GIS at Portsmouth University; Md. Moniruzzaman, SDE RRMP-3 for M.Sc. in Bridge Maintenance and Design at Surrey University and Sheikh Faezul Amin, SDE Ferry Maintenance Sub-division, Dhaka for M.Sc. in Engineering Management at Brunel University. We wish them every success in their studies.

## Recent Seminars at RHD

Are earthquakes a major threat to our structures? Speakers at a seminar organized by Technical Services unit of RHD on 29 October 2002 in the HDM seminar room, Sarak Bhaban, Dhaka addressed this issue. The keynote speaker, Mr. Afil Uddin, Executive Engineer, RHD in his paper ‘**Earthquake Effects in Sub-structure Design of Bridges**’, identified design provisions for compressive members for different seismic zones in Bangladesh. Mr. Uemura, JICA expert for RHD presented a paper on ‘**Strait Crossing in Japan**’ detailing the history of Japan’s strait crossing projects, the effectiveness of the Honshu-Shikoku Bridge project and several advanced technologies developed for long span bridges. Highlighting the earthquake risks in this region, the chief guest of the seminar, Mr. Md. Fazlul Haque,

Chief Engineer, RHD underscored the need for such seminars at national level through Institute of Engineers, Bangladesh. The seminar was presided over by Mr. Abed Uddin Ahmed, Additional Chief Engineer, Technical Services Wing.

Improved ground improvement techniques in RHD was emphasized in a seminar organized by RHD Engineers’ Association on 21 July 2002 in the HDM seminar room. The keynote speaker, Mr. Jawad Uddin Ahmed, Managing Director of J Technologies Pte Ltd, Singapore presented 2 papers entitled ‘**Ground Stabilization Technique For Road Embankment**’ and ‘**Renolith Technology For Road Embankment**’. Mr. Md. Fazlul Haque, Chief Engineer, RHD was chief guest while the President of the Association Engr. Md. Afzal Hossain presided.

## RHD at Forefront of Information technology

Sophisticated computer-based information systems are currently under development in the Roads and Highways Department to support the effective management of the major road network in Bangladesh. Under the IDC3 project, a local area network (LAN), browser-based and web-enabled databases and a web site are fully operational and plans for a wide area network (WAN) and a Ministry of Communications web-site are well under way. A radio link (see boxed article) between RHD HQ, the Ministry of Communications and the Bangladesh Road Research Laboratory in Mirpur is almost complete bringing another 50 workstations into the network.

Through any of over 250 workstations the RHD Intranet can be accessed making available a vast range of systematic information which can automate routine tasks and support decision-making. Information systems such as the Road Maintenance Management System contain details of the condition, roughness and traffic on over 21,000 km of roads while the Bridge Maintenance Management System can display records of the structure and condition of over 9000 bridges and culverts.

The front-end of all the databases comes in three versions: 1) Standard – used by specific RHD circles for data entry, administration and reporting; 2) Intranet – provides extensive searching, viewing, reporting features and 3) Internet – provides simplified searching and viewing features.

In addition to information in databases, the RHD web-site contains a variety of technical and management information. This includes survey manuals, standard test procedures, geometric design standards as well as management plans for each circle and audit and economic

reports, which together amount to more than 2.5 Gigabytes of information.

RHD maintains a web based e-mail system allowing access to its users from anywhere in the world. RHD web site is hosted by its own web-server connected to the ISP by a 128 Kbps DSL line. To see the future of road and bridge construction and maintenance visit RHD at [www.rhdbangladesh.org](http://www.rhdbangladesh.org).

## Always Young Enough

State-of-the-art hardware and the latest software are not enough to bring RHD to the digital age alone. Without attention to the human factor, even the finest computer system will fail.

A tailor made programme to introduce eighty key decision-makers in RHD and MoC to the use of email is near completion. For some of these senior officials this is the first encounter with keyboard and mouse; for the more proficient it is a skills upgrade. The initial training lasts only three hours but incorporates regular follow up and repetition of exercises.

Computers have mostly been a tool for the younger generation but the use of computers, email and MIS should be integrated into everyone's daily routine and senior personnel must not be left behind. Ultimately, their understanding and promotion of MIS will be the success factor in bringing RHD to the front of e-governance and seeing the positive feedback from the training, it is obvious that you are always young enough to learn. Email is the beginning, web pages the next challenge, and soon a database query is routine. Not a change overnight, but a long-term approach to build a culture around electronic communication.

The homework will not scare anyone - mail, chat and browse as much as time permits. The message of this course? "Be a proud email user, tell the whole world that you are online at RHD."



## RHD Goes High and Wide

A high-speed radio link has brought RHD, MoC and RHDTC into a Wide Area Network (WAN). Users in the Ministry and the Training Centre can now enjoy full RHD Intranet facilities through an 11 Mega bits per second (Mbps) connection. Connection to RHD servers will provide access to all database applications and opportunity to use the internal and external email facilities. This will connect near 200 users in RHD, around 35 in MoC and a further dozen in the Training Centre.

Radio antennae (see photograph) fixed to masts atop RHD, MoC, Dhaka Workshop (at Tejgaon) and the Training Centre at Mirpur provide line of sight communications between each of these points. The antennae are located on masts about 50 metres from the ground and have a broadcast range of around 50km. It is hoped that similar technology will bring all RHD field offices into the WAN and nation-wide telecommunications into a central PABX in the near future.

## RHD Reorganises

With improved technologies, tools and management systems the world is moving faster making it possible to build roads and bridges faster, more cost effectively and of better quality. To adapt to these changes in the outside world RHD is restructuring to optimise use of the existing logistics and manpower and to strengthen priority areas.

A reorganisation proposal developed under IDC3 has recently been approved by the MoC. Only the fifth reorganisation since RHD was established in 1962, it is an interim measure limited to reshuffling existing sanctioned posts to strengthen headquarter functions.

The changed RHD HQ will get two more wings, Bridge Management and Management Services Wings. Bridge Management will be a highly specialised wing serving all bridge functions of RHD. The Management Services Wing, headed by an ACE, will cover all administrative support functions of RHD. In addition, focus areas such as Maintenance, MIS, Monitoring and Road Safety are being strengthened through the reorganisation.

The RHD first reorganised in 1967 in line with the recommendations of Deleuw Cather International Ltd - consultants to the World Bank – for improved development and maintenance of road communication in what was then East Pakistan.

With an increased workload, the RHD was expanded in 1976 with particular emphasis on planning units and Chittagong Hill Tract unit of the Department. To address war damaged bridges and certain other development activities, three field circles and a Special Project Circle were created during this reorganisation.

In 1983, the Martial Law Committee recommended decentralisation of the planning units thereby creating four zonal headquarters in each of the administrative divisions of the country to control and manage local planning and operational activities.

The last restructuring occurred ten years ago when the circles and divisions created against development projects with permanent activities were brought under the revenue budget. This eventually led to the creation of road circles in each of the old districts and road divisions in each of the new districts.

## Friendship Bridge Opened

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The project also included the design and construction of river training works to ensure that the river banks are stable, and to mitigate scour around the foundations of the bridge and adjacent railway bridge. The project also involved the design and construction of toll plazas, road-works, drainage culverts, under-passes, a roundabout and a housing complex.

In her published Message for the Opening Ceremony the Honorable Prime Minister Begum Khaleda Zia expressed her thanks to the UK for providing financial support and to those associated with the construction of the bridge for their cooperation.

## Common Issues

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Bangladesh has made progress in many institutional areas, Nepal has advanced on other fronts. The RHD has merely explored the feasibility of a Road Fund but Nepal has leapt ahead and introduced a one-rupee levy on each litre of fuel to pay for road maintenance. There have been a number of other important institutional initiatives in

Nepal including outsourcing surveys required for HDM and hiring out equipment at commercial rates. Tolls collected for crossing one large bridge contribute directly to its maintenance. The RHD on the other hand has made more rapid progress in Intranet and Internet based management information systems including the development of databases necessary for the use of HDM and GIS.

The Roads Branch of the Malaysian Public Works Department is currently updating its road maintenance management system and the use of HDM-4 will be a key element in the management of the Malaysian road asset. Bangladesh is the first country to use HDM-4 and the World Bank's HDM-4 training and dissemination team had suggested that the experiences of the RHD, Bangladesh would be a valuable source of learning. More than just pioneering the use of HDM-4, RHD has developed a Road Maintenance Management System (RMMS) that interfaces with HDM-4 to provide one of the most sophisticated information systems in the region.

These exchange visits have shown that Nepal, Malaysia and Bangladesh face common institutional issues. Funding of road maintenance, asset management, road maintenance management systems and the role of the private sector are burning issues in the region that respective governments are striving to address.

The delegation of the Nepal Department of Roads visited Bangladesh from 30<sup>th</sup> September to 3<sup>rd</sup> October and was headed by Mr Madan Gopal Maleku; Director General-Department of Roads. The delegation of the Malaysian Public Works Department visited Bangladesh from 4<sup>th</sup> to 7<sup>th</sup> May and was headed by Mr Mohamad Razali bin Othman; Director of Roads Branch, Malaysian Public Works Department.

EID MUBARAK