

BCL NEWSLETTER

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TO OUR READERS

Riverine Bangladesh conjures up the image of a well-watered verdant land but behind this poetic splendour lies a less comfortable truth and the recent conference on climate change highlighted it in stark terms. Severe water shortage looms over the land and actions to mitigate its adverse effect brooks no delay.

Erratic rainfall in the rainy season is affecting the food grain production. On an average 1~1.5% of potential GDP growth in agriculture is lost every year as a result of environmental damage. A loss of that magnitude in agriculture reverberates throughout the entire economy. Food price rise in the past two years added roughly another 10 million to the 55 million people already below poverty line.

At the national level, mass awareness should be gradually built up about, among others, the possible necessity to switch to agricultural products which are less water intensive. We should commend and recognize the work of the country's agricultural research labs for developing new strains which will help the nation mitigate the difficulties arising out of climate change. Scientists have done their part to add to the weal of the nation and stand ready to do more. It is now for the national leaders and the people to do their part. ■

Mahub Haque
Mahub Haque
Managing Director

MALDIVES PLAN SAFE SEWERAGE DISPOSAL

The Republic of Maldives consists of about 1200 coral islands. About 300 of them including 90 odd islands which have been developed exclusively as tourist resorts are inhabited. The average size of the inhabited islands is around 0.25 -1 sq km, which ecologically survive on a delicate balance amongst its environmental determinants. Human activities directly affect those determinants. For example, human wastes (sewage, solid, liquid) contain high concentration of nutrient (compounds of Nitrogen, Phosphorus, Carbon etc). Uncontrolled disposal of such waste finds its way into the sub-soils and to the adjacent water bodies (ocean-lagoon) around the coral reef.

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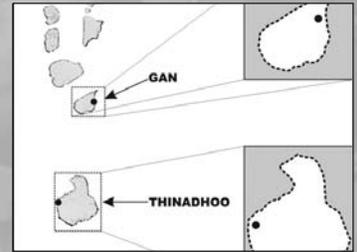
MRT RECEIVES TOP PRIORITY FOR DHAKA

A strategic transport plan (STP) for Dhaka city was prepared under the World Bank funding in 2005. It viewed the subject in broad strokes with emphasis in policy planning and urban strategies and recommended that follow-up studies be undertaken to prepare implementing projects, emphasizing on mass transit systems. As a follow-up, JICA commissioned a team of consultants to update the STP and formulate projects suitable for JICA funding.

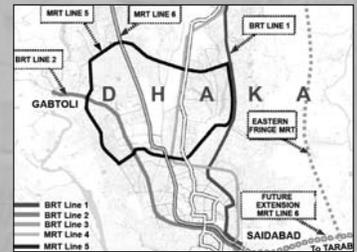
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CenTR News

The CenTR had its first seminar of the quarter on 28 Jan. Dr Rachid Hankour, Vice President and Director of Lab Systems, Geocomp Corp, Massachusetts was the keynote speaker on 'Application of Automation in Geotechnical Testing.' The session was chaired by Engr MA Aziz, Head of the company's Roads and Bridge Division. At an hour long well illustrated presentation Dr Hankour highlighted the efficiency and cost

underground metro as recommended under the Strategic Transport Plan of the city. In the eastern part of the city tunnelling would require protective features. Mr Karim expressed his satisfaction at the prospect of installation of Geocomp's automated lab testing equipment at BUET, the Universities of Dhaka and Chittagong and also at GSB which he noted would improve the much needed qualitative aspect of geotechnical analysis of the soils in Bangladesh.



A view of field training on 'Total Station Survey' saving features of the state of art fully automated geotechnical lab equipment and emphasised that besides their conformity to AASHTO the automated equipment generally save money and time through the advantage of one PC running simultaneously several testing stations.

Dr Hankour's presentation was followed by an equally interesting presentation by his colleague Mir Fazlul Karim, a engineering geologist and a former Director at the Geological Survey of Bangladesh. With his long professional experience of working in Bangladesh and particularly in Dhaka, Mr Karim observed that the western part of the Dhaka city was representative of the soil of Modhupur tract and would be suitable for tunnel boring for the proposed

The above seminar was followed by two structured training programmes at the CenTR. The first of these entitled 'ArcGIS9x' was conducted by Engr M Rashedul Haque and contributed to useful capacity building of his fellow engineers at BCL. In view of the number of trainees from the different divisions of the company Rashed divided them into two groups for his presentation. Each group was involved in a six day programme and their proficiency was evaluated in conformance with the ISO provisions. Rashed will return to a more advanced training on the subject following a recess of two months during which he intends to complete his dissertation of his Masters Programme at BUET.

Engr M Emdadul Hoque conducted the other structured training of the first of the two groups of engineers on 'Total Station Survey' during the second half of Mar. The training consisted of both classroom and outdoor exercises. The trainees participated with enthusiasm and concluded the training satisfactorily.

As a part of BCL's CSR activities, a public awareness campaign on Hepatitis B and C was conducted by Mr Bablu Rahman, Manager Training of Glaxo Smith Kline on 25 March at the CenTR. His brief presentation of the statistics for the worldwide population afflicted by the diseases presented a menacing figure. Mr Rahman noted that these dreadful diseases afflicting millions worldwide is in consequence of the culture of poor food habits and the general lack of public awareness of how the diseases spread.

At the conclusion of Bablu Rahman's presentation the floor was taken over for the keynote presentation on 'Preventing Poor Performance by RC Buildings Subject to Shaking' by Dr M Ali Akbar Mollick. Dr Mollick critically reviewed the construction scenario of the RC structures in Bangladesh and demonstrated the weaknesses in the construction of buildings in the major cities of the country. Referring to the provision of open parking area on the ground floors, a common local practice, he noted that such construction generally contribute to the vulnerability of the structures to earthquake. Citing examples from different countries Dr Mollick demonstrated that the supporting columns buckle during shaking in an earthquake and give away to collapse of the structures. Prof Harunur Rashid, an erstwhile Head of Civil Engineering at RUET chaired the seminar with Engr Md Abu Sadeque, PEng, Deputy Secretary at the Ministry of Food and Disaster Management, as a Moderator. Engr Sadeque critically analysed the presentation of Dr Mollick and stated that the presentation hinged on certain generalized contentions. He advised for a more restrained and rational presentation so as not to create panic and misconception about the

construction practices in the country. The seminar concluded without attracting further comments from the chair.

The author meanwhile attended two programmes at venues elsewhere in the city. The first was the '3rd International Earthquake Symposium, Bangladesh' which was organized at BUET by Bangladesh Earthquake Society. The symposium was well organized and attended. Delegates from several countries delivered well researched papers. The papers by J R Kayal, former Deputy Director General, BGS entitled 'Seismotectonics of Northeast India and Bangladesh Region: An Appraisal' and the paper of Prof Aftab Alam Khan of Dhaka University's Geology Department on 'Active Faults and Potentials for Seismogenic Mega-Rapture in the Himalayan Fault System vis-à-vis its impact in Bangladesh' at the geological sessions were particularly interesting.

The author also attended a Seminar at Dhaka University's Geology Dept on 16 Mar. Dr Najman Yani, a faculty at the Environmental Science Dept of Lancaster University, UK delivered a paper on 'The Missing Records of Himalayan Erosion: Bengal Basin, Bangladesh. Dr Yani made some interesting conclusions based on her years of research and fieldwork in the project area lying in the northern fringe of the Bengal basin.

Information on the training activities in the next quarter is available from the Head of CenTR at:

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Dr AAM Shamsur Rahman

MALDIVES PLAN SAFE SEWERAGE DISPOSAL

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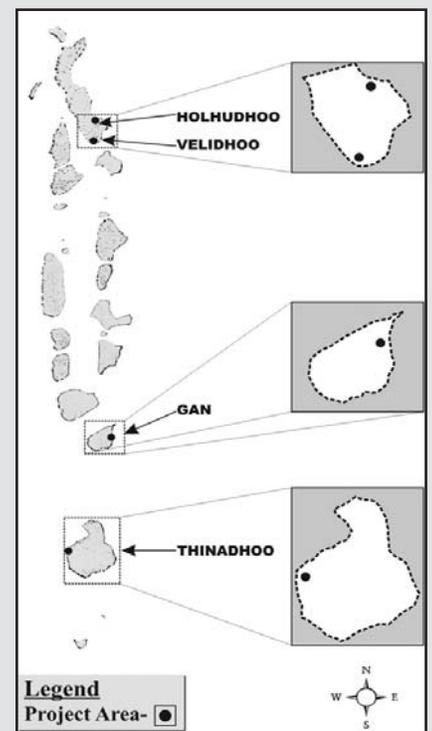
This leads to development of eutrophication, which is a condition of water bodies becoming rich with high concentration of organics. Eutrophied water is responsible for growth of algal bloom and weeds. When that happens coral starts to die off. Continuation of coral death stops the sand building process and ultimately the coral islands get environmentally destroyed.

Unsafe disposal of sewage on land is no less harmful to the hydro-geological environment. The island population historically rely on the thin layer of 'fresh water' that manifests naturally at a shallow depth in the islands through accumulation of percolated rain water. Ingress of polluted water contaminates the fresh water lenses and presents serious health hazard by destroying a vital source of potable water for the islanders.

Collection, treatment and disposal of sewage are, therefore, a fundamental need in inhabited islands. Government of Maldives in collaboration with French Development Agency has undertaken to develop sewerage project in four islands. Two of the islands (Laamu Gan and Gaph-Dhal Thindadhoo) are located in the southern Maldives and other two (Nounu Velidhoo and Nounu Holhudhoo) in the north. The project commenced in the field in Oct 2009 and is presently going through the design phase.

Significant progress has been made and includes completion of major inputs comprising Topographical Survey, Hydro-geological Investigation

including establishment of Mean Sea Level and Environmental Impact Assessment. Comparative assessment of three types of sewage collection systems, namely Conventional Gravity System (CGS), Small Bore Sewer (SBS) and Vacuum System (VS) were conducted. For each system the assessment examined technical performance, operation and maintenance cost, environmental impact and people's reaction on three different islands. The exercise helped the Client to decide on the CGS as the preferred system and has since been adopted for all four project islands. Inputs from the preliminary investigations were very useful in carrying out conceptual design. Detailed design for Nounu Velidhoo



Map of Maldives Showing Project Location Island has also been prepared in draft form. It is expected that detailed design would be completed within the stipulated time frame.

The Ministry of Housing, Transport and Environment is the executing agency on behalf of the Government of Maldives

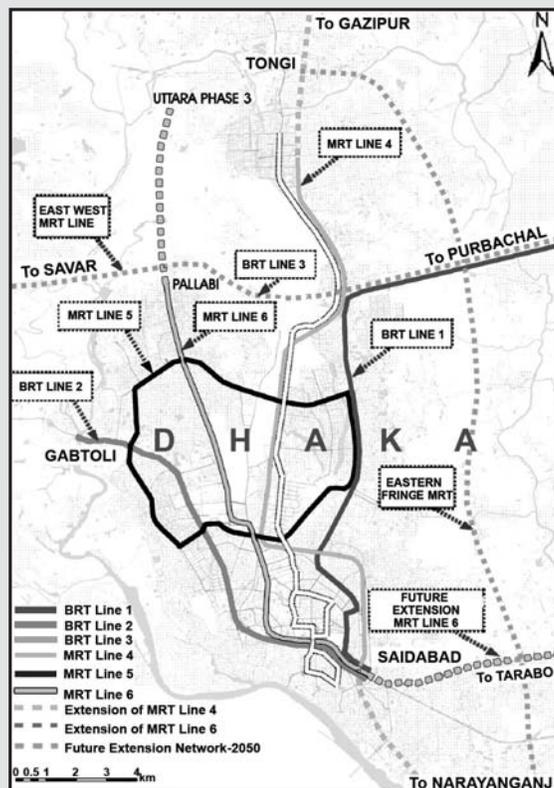
for the project. MHTE has engaged the services of BCL in joint venture with Shah Technical Consultants of India in September 2009. BCL is the lead firm while STC is primarily looking after the engineering design for collection, transportation, Treatment and disposal of the sewage. The field works (technical and social surveys) started in October and has since been completed. The Consultants have mobilised a multi-disciplinary team of experts from Australia, Bangladesh, Greece, India and Maldives. The author is the Team Leader for the project. ■

Shamsul Huda

MRT RECEIVES TOP PRIORITY FOR DHAKA

[contd. from page 01]

The JICA study concurred with the vision presented in the STP. Extensive traffic and socio-economic surveys



Proposed Strategic Transport Plan for Dhaka city

found that road traffic has increased about 35% since the STP was prepared. Currently, about 23 million trips are being undertaken and given the chaotic traffic situation the average speed of vehicles is very low. For example, buses, which account for 28% of the modal share, ply at an average speed of about 14 km per hour during peak hours.

The study accorded priority to mass rapid transit (MRT) system for ameliorating the situation. As envisaged in the study, the MRT will consist of two components: underground/elevated railway (Metro) and bus rapid transit (BRT). The MRT alignments proposed in the study are generally in agreement with those in the STP with some small variations. The lines proposed in the study, covering the period upto 2025, are as follow:

BRT Lines

- Line 1 : Purbachal - DIT Road - Saidabad
 - Line 2 : Gabtoli - Saidabad
 - Line 3 : Uttara - Airport Road - Ramna Area
- ### Metro Lines
- Line 4 : Gazipur - Saidabad - Narayanganj (following the alignment of the BR line)
 - Line 5 : Gulshan - Mirpur - Mohammadur - Rampura (Circular Line)
 - Line 6 : Pallabi - National Assembly - Saidabad

Additionally, the study proposes three new/extension lines under a stretched time horizon of up to 2050.

These are

- Line 7 : Eastern Fringe (Tongi-Narayanganj)
- Line 8 : East - West Connection from Purbachal to Savar
- Extension of Line 6 : Pallabi up to the Uttara Phase 3

The alignments are shown in the Map.

The study recommended line 6 as a priority and has been selected for the feasibility study. Preliminary design in the next phase will start in Apr 2010.

BCL, which was involved in the preparation of the STP, worked with the JICA team for the study. The author provided back-up support from the BCL head office. ■

Rafiqul Islam

THIRD KARNAPHULI BRIDGE - A DREAM COMING TRUE

This 950m long 24.47m wide extradosed type bridge over the Karnaphuli river is nearing completion and is scheduled to open to traffic in Sep 2010. The overall progress in mid-June is supposed to be over 98%. The main bridge structure is complete. The approach road works which were lagging behind, have now progressed to Sep. The construction of the bridge commenced in July 2006 and was scheduled to be completed by end of 2009, which is now re-scheduled to be opened in Sep. Reason for this delay could be attributed partly to unforeseen difficulties due to environmental considerations in procurement of stone materials from originally planned sources and partly to the unexpected global price increase of construction



A view of nearly completed Third Karnaphuli Bridge

materials. The difficulties have been overcome and work is in progress.

Construction of a fixed road link of the country's panhandle in the south to the Port of Chittagong and the rest of the country and for growth of the Chittagong city itself was a dream cherished since partition of India in 1947. Nothing except the installation of an old salvaged steel truss bridge with wooden deck from the Netherlands was done since the old Kalurghat Railway bridge was built nearly a century back. The steel bridge named as Shah Amanat Bridge is in precarious condition and is planned to be removed once the new bridge is opened to traffic. The dream of a century will come true soon.

BCL led the joint venture for the tender design and pre-construction consultancy services and is a member of KEI-BCL-STUP-TAEP JV managing the project under the conditions of FIDIC 4 contract in the construction phase.

The new bridge is a long span extradosed type structure, with the central spans of 200m and end spans of 115m each supported on deep pile foundation. The deck is supported by cables suspended from the central pylon

with a height of 50m above MSL. The 24.47m wide bridge deck comprises divided two lanes with a narrow lane for slow moving traffic on each side, satisfying the Asian Highway Standard. This bridge is the only one of its type in Bangladesh and second in the whole of the Indian sub-continent and has the longest extradosed RCC span in the world. The construction of the project is funded by KFAED (72%) and Bangladesh Government (28%). ■

Munjurul Haq Khan

GOVERNANCE IMPROVEMENT & CAPACITY DEVELOPMENT

Bangladesh, with a population of about 150 million, has witnessed rapid urbanization in the last 30 years. It is estimated that at present about 40 million people (about 25% of its population) live in urban areas. Although the current level of urbanization is low, urban growth is high at 2.5% pa compared to the country's population growth of 1.4%.

Urbanization is comparatively a recent phenomenon in Bangladesh. At the present rate and pattern of growth the

urban population will grow to about 50 million in 2020 - same as the present total population of the UK. The increased population, concentration of economic activities, social and administrative services, education and employment opportunities, infrastructure facilities, etc are major reasons for rapid urbanization. But the development of urban infrastructure has not kept up with the rapid pace of population growth, particularly in the big towns and cities. Consequently, there had been acute shortage of infrastructure and municipal facilities like piped water supply, sanitation, solid waste management, public transport system, drainage etc. Moreover, rapid in-migration, growth of slum areas, urban poverty and unhealthy environment have been threatening the social fabric of the urban development.

The government has been addressing the issue as a matter of priority. Among others, ADB has been assisting through funding of a number of urban development-related projects. Based on the success and lessons learned from such projects, the Bank has proposed to finance the Second Urban Governance and Infrastructure Improvement Project (UGIIP-2). The most important lesson learned from the previous projects is that improvement of municipal services delivery can be most effectively achieved by linking it with governance reform and, as such, consultants have been engaged by the implementing agency, the LGED, to help urban Governance Improvement and Capacity Development as a component of UGIIP-2.

This component of the project, Component B, is to improve governance and develop capacities of the Paurashavas (Municipalities) of 35 secondary towns. The Paurashavas,

assisted by the consultants, will implement reforms in six key areas:

1. citizen awareness and participation;
2. urban planning;
3. women's participation;
4. integration of the urban poor;
5. financial accountability and sustainability, and
6. administrative transparency.

The reforms will be supported by training and facilitations and will be monitored to assess performance. And, it is hoped that Component B will effectively support the national level reforms of urban governance.

BCL is a part of a consortium of three consulting firms selected for providing services for the governance component. The work will be undertaken over five years with a total input of 876 person-months. ■

Md Rafiqul Islam

BCL PLANS MICROFINANCE TRAINING

The Institute of Microfinance (InM) launched a MF training programme with financial assistance from DFID where two Training Managers of the CenTR



TOT on Microfinance at the InM

qualified as InM Certified MF Trainers. These two and other trainers from Credit & Development Forum and PKSF recently conducted a pilot training programme for Muslim Aid, a UK based NGO working in Bangladesh. Two batches of 25 each were given training on the general principles of Microfinance Management and Accounts Management. Prior to the undertaking the programmes, the following Training Manuals and course modules were prepared:

- The course on Microfinance Management is designed to meet the needs and demands of the staff and executives of MFI's and related institutions and covers four important components of MF, namely savings, credit, micro-insurance and remittance. The course also includes some related elements like the client satisfaction and loyalty, MF product design and development, financial projection, ratio analysis etc. The course duration was 10 days and the trainees were provided with lodging and boarding, logistics and conveyance. The course focuses on both career development and organizational strengthening.

- Accounts Management Training course is designed to cater to the needs of statutory and management accounting of MFIs. The course duration is five days (residential). The goal of this course is to strengthen the accounting system of MFIs so that they meet international standards (IAS),

provide training in liquidity, assets and liability management, VAT and taxes etc. The course meets the demands of both career development and organizational strengthening.

The above training courses are being offered through scholarships from the DFID covering 80% of the cost. The remaining 20% is paid by the trainee.

BCL has plans to design and develop two other training courses on 'Monitoring and Supervision of MF' and 'Good Governance' to meet the demands of the MFIs in future. ■

M Murad Uddin

WOMEN LABOUR HELPING IN RURAL WORKS

In 1990 BCL was part of a consortium of consultants, who worked on an innovative rural development initiative known as "Rangpur Region Rural Development Programme". The project was funded by EEC and aimed at production and employment generation in one of the country's economically more depressed areas through, among others, training and organisation of women in income generating activities (IGA) including their motivation, assessing and recommending interventions to achieve objective of greater women participation in socio-economic activities of women in their communities. The concept of labour contracting societies or LCS was born as a part of that effort. Participation of women in economic activities is not new in rural areas of the country but they worked as individuals (and a multitude of women still continue to do) and were often exploited. Under the programme,



Women Labour at work under RRMAIDP

women in the villages were encouraged and assisted in getting organised into self-regulating societies and were given appropriate training in rural road maintenance, tree planting and nurturing and similar activities, which gave them strength to bargain for improved working conditions including convenient hours of work to fit into their family life and in return achieve a degree of respect and economic independence as an earning member of their family. The concept has further developed under the patronage of LGED in many subsequent projects and LCS has become almost a routine fixture of most rural development projects in Bangladesh.

Recently women members of the LCS were seen working in road improvement works in Barguna District under Rural Roads & Market Access Infrastructure Development Project (RRMAIDP) of LGED funded by Danida. LCS women were involved for construction of earthen road, pipe culvert, open channel drain, pavement, market and road maintenance works. Also tree plantation and caretaking schemes are being implemented by LCS contract directly. LCS women are working as labour sub-contractor under a traditional contractor in implementing the schemes and have successfully completed 635 km of earthen roads, 56 km of Upazila/Union road pavement, 24 km HBB pavement,

102m pipe culvert/masonry drain, 7 rural market and 78 km tree plantation. So far, RRMAIDP has generated 1.50 million labour days of which 94% are women labour days. In addition to scheme implementation, LCS women were given

training on awareness raising, skill development and income generating activities. Also a total of 8,170 women have received functional literacy training under RRMAIDP.

In a recent Danida funded project of providing Water Supply and Sanitation in the coastal belt, which BCL conducted jointly with a local NGO, women household members were extensively involved. Women, being more in the forefront of water use and household sanitation, took active part in project development and implementation. The project installed some 4500 water points and 25,400 sanitary latrines including some 2,400 latrines in schools. Women were involved in hygiene promotion, community motivation and site selection and were organised and trained in handling operation and maintenance of the constructed facilities for their communities. Half of the 8778 caretakers trained were women and 60% of 113 union facilitators and 452 health promoters were female. This was made possible through intensive stakeholders meetings, courtyard sessions, and motivation campaigns.

The Social Investment Programme Project (SIPP), funded by IDA, is another successful example, where the women participated overwhelmingly in project works. The project aimed at rural poverty reduction through small scale

community driven infrastructure sub-projects providing access to economic and social services on one hand and creating sustainable livelihood improvement through VGA grants on the other. Efforts were specially directed to recruit women members of the households to take part in project preparation and selection process, construction implementation, embankment protection, turf and tree plantation and nursing. Some 700 km of earthen roads were improved and 409 rcc pipe culverts, 58 schools, 41 tube wells and two drainage canals in 450 villages were constructed under the project, mostly with the help of women participation and by women labour. Training on project handling and management, account keeping, functional literacy, construction and maintenance of infrastructure facilities were organised for the community in each project village. Women members also participated in Village Development Committees and Project Management Committees for identification, planning, implementation and monitoring of 555 sub-projects. Social Assistance Programme under the SIPP was participated 100% by poor and destitute women in VGA undertaking various micro and cottage enterprises. Again organising women in contracting groups proved its worth in more than one way.

These experiences were usefully employed in 2002 in an emergency draught recovery programme in Southern Province in Zambia, where acute food and water scarcity were prevailing after a 7-year draught and where a few households had surviving able-bodied male members capable to work due to rampant prevalence of AIDS. Women were the mainstay and bread earners of the family in a notoriously polygamous society. The



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funding agency (The World Bank) required that one member of each family be employed for at least 20 hrs in a week. The beneficiaries were identified and organised into groups to receive appropriate skill training. Day care centres were set up for the young at each work site to free the mothers to work. The project replicated some of the salient features of LCS to the benefit of the community.

The LCS has created new employment and personal development opportunities for poor rural women by involving them in infrastructure development on their own terms and thereby providing more productive and just opportunities to take part in national building works. ■

Mahbub Haque

THAKURGAON POWER STATION

RZ Power Ltd, a subsidiary of RahimAfrooz Ltd invited BCL to assist them in the procurement of power station plant and equipment, top supervision of erection and testing/commissioning of a 50MW Power Plant at Thakurgaon in North-Western Bangladesh. The plant will have forty one smaller units to work in tandem, to ensure contracted output of 50MW at all time. The ready availability of the smaller units in the market was the reason for employing a large number of such units in preference to one or two bigger ones.

The Power Station will run on HSD. The Contract between BCL and RZ was signed in March 2010. The implementation is on schedule and the plant is planned to be commissioned in early July. ■

Md Rezaul Karim Chowdhury

IN THE COMPANY

Md Sujat Ali Khan, 50, graduated in civil engineering from BUET in 1984. Following a period of 14 years in different engineering firms at home and in Malaysia during which he gained useful professional experience as a materials engineer for construction of drainage structures, Sujat Ali joined BCL as a Senior Engineer in 1999.



At BCL his works included as a Materials Engineer the Flood Damage and Rehabilitation, Jamuna Bridge Access Road, Southwest Road Network Development projects and currently the Teesta Bridge.

Zohir Uddin Patwary, 48, obtained diploma in civil engineering from Feni Polytechnic Institute in 1982. He initially joined Extension and Research Project I&II at BCL-DDC in 1984 and has been working at BCL since 1988 primarily as a Site Engineer on various projects, notably Improvement of Food Grain Storage II, Primary Education Sector Development Project, 12 storied JMBA building, 10-storied REB Building and currently the ongoing 20-storied FILIC Building.



CONGRATULATIONS

We congratulate:



Ms Khadiza Akter, for her elevation to Assistant Engineer from CAD Operator wef 01 Dec, 2009. Availing herself of the company's staff development programme Khadiza completed her BSc in Civil Engineering from the Stamford University Bangladesh in 2008. Her services have been placed under the Water Resources Division where she is currently undergoing a period of training as a Water Supply and Drainage Engineer.



Md Ayub Ali Mia, Senior Engineer and **Md Rashedul Haque**, Assistant Engineer for their success at the 24th Batch of PEng (Registration # 01/0205 and 01/0206, respectively) under the Bangladesh Professional Engineers Registration Board. With their successful incorporation BCL's total number of PEng professionals currently stand at 22 on its payroll.