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Vignette®

A Newsletter of Engineering Consultants, Pakistan

Volume 2, Issue 1 January - March, 1992

Editorial

Dear reader, it has been a year since we produced the first issue of *Vignette*. We are now in the second year and you already have the fifth issue of our newsletter before you. The pleasure is entirely yours but the satisfaction is ours and ours alone.

This issue carries an emphasis on roads and highways projects. The reason being that in today's Pakistan the trend is more and more towards providing better infrastructure facilities for intercity travel by road. One can see automobiles operating to and from the smallest of villages in the countryside. Railways and the inland water transport cannot possibly match the needs. The situation demands that road networks be developed fast. That is why every now and then we read about new road enterprises. Work on various projects is already underway. On the one hand you will be reading about the roads connecting the farmlands to market places, the provincial roads and on the other, about the National Highway Project, known as N-5. EC happens to be deeply involved in these projects all over the country. In near future we hope to be handling the prestigious motorway projects linking Islamabad - Peshawar and Peshawar - Takhtbai - Mardan. Another big project providing for a ring road around the city of Lahore is also in the offing.

So it is evident that the workload is on the increase

Contd. on Back Page

PAKISTAN'S LIFELINE: NATIONAL HIGHWAY, N-5

Dualisation of Karachi-Hyderabad-Hala Section

By: Engr Munawwar Jamal Qureshi (MSc)

Highways have been occupying a secondary position compared to railways as a mode of transport since independence of Pakistan. The fact has been evident due to poor status of roads in the country which inherited a developed railway network at the time of independence. Railways were the main carriers of passengers and goods along the main transport artery of Pakistan, from Karachi to upcountry. A road also existed alongside the railway tracks but was unable to compete with railway due to substandard physical and design parameters of the road. Vehicle movement was therefore not only limited but also uneconomical.

This situation prevailed for over a decade when railways started crumbling for various reasons, but mainly because of the shifting of the emphasis on the mode of transport from railways to roadways. Lack of development of the railway system in the country initiated a process of their obsolescence and non dependability as an efficient as well as economic mode of transport and opened up an opportunity for the development of highways in Pakistan. The road connecting Karachi with upcountry was improved and designated as National Highway. Major breakthrough in highway development in Pakistan came with the construction of Karachi Hyderabad Superhighway, providing a new route from Karachi to Hyderabad, shortening the distance by about 48 kilometers. Designed by International Consultants M/S Frederick R Harris and constructed by M/S Astaldi of Italy using latest technology, the highway provided an

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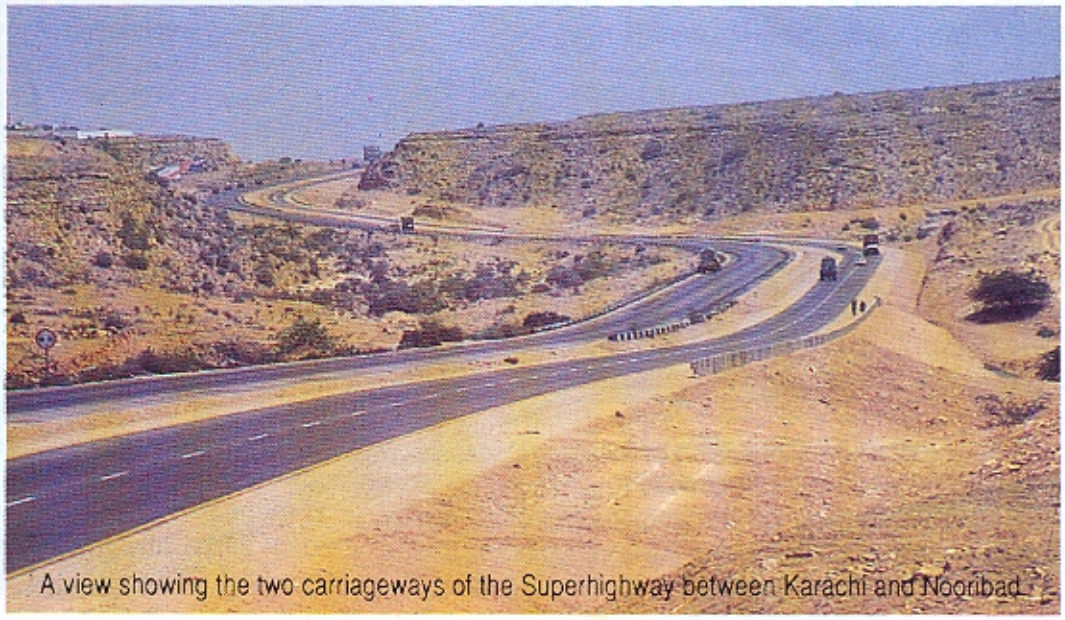


A view showing the two carriageways of the Superhighway between Karachi and Nooribad

immediate attraction to motorists and transporters, thus diverting almost all traffic from the old road between Karachi and Hyderabad.

A decade passed since the completion of the Superhighway, without any further development in the field of its maintenance or improvement . This created a serious setback as the development of transport vehicles continued with the increase in the their number, specially heavy lorries using the highway with increasing frequency. The Karachi - Hyderabad Superhighway and the sections of National Highway not only deteriorated under fatigue but also became almost incapable of coping with the increased number of passes, of heavier axle loadings. The Superhighway started developing ruts and cracks. With the formation of National Highway Board, plans were drawn up for strengthening of the existing pavement of the Superhighway by providing asphalt concrete overlay wherever found feasible, besides providing an additional carriageway along the existing one, to relieve the traffic congestion.

The rehabilitation of the Superhighway was carried out during the years 1982 - 88 in two sections of Karachi - Nooriabad and Nooriabad - Hyderabad. Design and construction supervision of the rehabilitation works for Karachi - Nooriabad section was entrusted to Engineering Consultants, who carried out the task efficiently and effectively due to their eminence in the field of Highway Engineering.

Plans for the provision of an additional carriageway in the southern reach of National Highway and in some sections in the North, were formulated by National Highway Board with the assistance of World Bank (IBRD) in Eighties and the Fourth IBRD Highway Project was thus institutionalised. Feasibility study and designing of various sections of the additional carriageway were entrusted to a number of local consultants. EC was assigned the feasibility and designing of Hyderabad - Naushero Feroz section, totalling 181 kilometers in length. EC completed the assignment successfully in 1986, to the full satisfaction of National Highway Board.

In 1987, the National Highway Board decided to take up the construction of the second carriageway in five sections of the southern region. These sections were designated as under:

S.N	N-5 SECTION	LENGTH
1	Karachi-Nooriabad	68 Km
2	Nooriabad-Hyderabad	67 Km
3	Hyderabad-Hala	46 Km
4	Hala-Sakrand	44 Km
5	Sakrand-Moro	66 Km
	TOTAL LENGTH	291 Km

The construction supervision of the above sections was awarded to a joint venture of PRC Engineering Inc of New York and Engineering Consultants. Section 1 and 3-A were offered for bidding initially and the contracts were awarded to M/S J&P of Cyprus who started work on the two sections in early 1988. The third contract of section 2 was awarded to a joint venture of M/S SECA of Italy and M/S Al Khan of pakistan in 1989. sections 3-B and 4 were deferred for bidding later on.

Concrete pouring in deckslab at steel mills interchange bridge on Super Highway.

PRC Engineering Inc, deployed a specialist team of expatriate engineers headed by the Chief Resident Engineer. EC's deployment comprised three teams, one for each section, made up of 25 technical and non technical staff headed by Resident Engineers.

These teams worked under the guidance and control of PRC expatriate staff and the arrangement benefitted both in the form of technology and training, The standard of construction supervision provided by PRC-EC has been excellent and has been duly appreciated by the clients.

Work on sections 1 and 3-A has been completed and section 3-A was opened for traffic in March 1991 and section 1 in january 1992. the two sections are behaving well under heavy traffic conditions and are to become examples of excellence in engineering expertise provided by Engineering Consultants.

Work on section 2, which was started in August 1989, bogged down due to internal problems of the joint venture partners, resulting in dissolution of the joint venture and taking over of full control of the project by M/S SECA of Italy. In the process, the project has been delayed substantially and is now expected to be completed by November 1993.

Work on section 3-B and 4 could not be started for various reasons. However in a recent development, the National Highway Authority have drawn up revised contracts for the two sections. The stretch from Hala to Moro comprising 110 Kilometers has been divided into three equal sections of about 37 kilometers each and designated as sections 3-B, 3-C and 4. Revised contract documents have already been submitted by EC to NHA who contemplate putting the three sections out for execution with the proviso that funds be provided by private sector.

PRC - EC joint venture will continue to provide construction supervision and design change / modification back up to complete the dual carriageway of Karachi - Moro sector of the National Highway. This has been accepted by EC as a challenge and the company will continue to meet this challenge till the attainment of the final goal.

FARM TO MARKET ROADS PROJECT - I NEARING COMPLETION IN NWFP

By: Engr. Waqar H Naqvi, Project Manager

I remember a public meeting which the late President Zia-ul-Haq was addressing. With special emphasis on the need and ideology of better civilization, the President had almost concluded his speech when a young man got up and addressing the President said, "General Sahib, Sir you would agree that civilization travels by roads, and unless we have roads everywhere no ideology can bring civilization". People were afraid, probably the man might have become a cause of annoyance for the President, but as usual the President smiled and encouraged the young man endorsing his views and said, "Gentleman, I fully agree with you".

Civilization travels by roads, is a phrase which is very much reflective of the real importance of roads and it is true that for a developing country like Pakistan, not much progress can be accomplished without constructing new roads and that too in the rural areas, where 80% of the country's population lives. In rural areas the main source of income is agriculture and unless the produce can get to market fast, the farmer cannot make timely earning and be ready for the next crop.

Realizing the necessity of roads in the rural areas, A Project titled as "Farm to Market Roads" was formulated by the Government of Pakistan, to be financed by the Asian Development Bank. The Construction of roads in Phase-I of the project physically commenced in 1989/90.

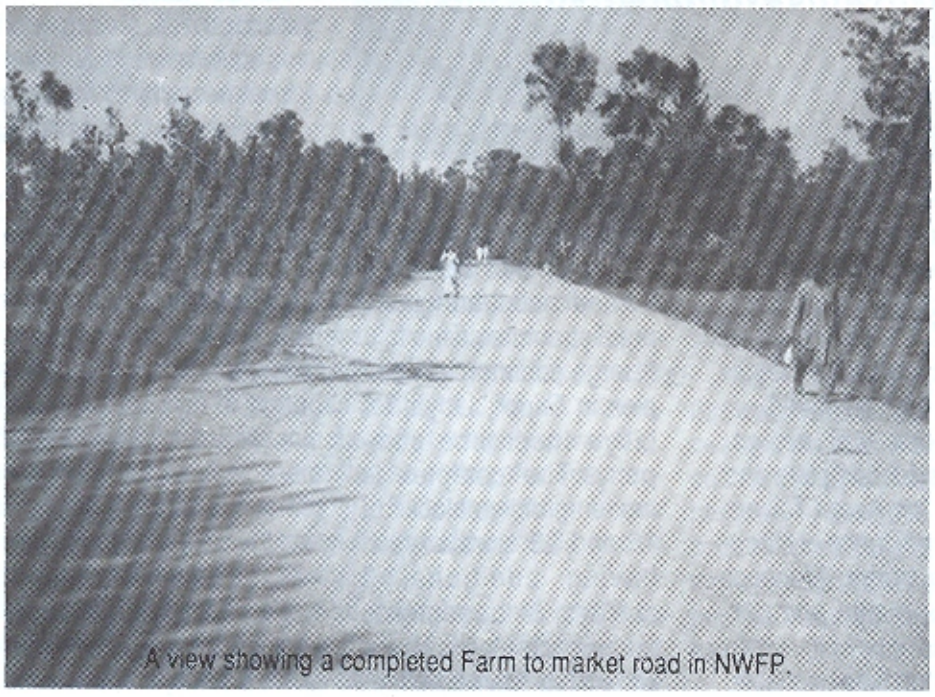
Engineering Consultants were entrusted 263 Km. of these roads, for design and construction supervision. 104 Km. of these are located in Sindh, 77 Km. in Baluchistan and 82 Km in NWFP, making a total number of 36 Roads, in the three provinces. In addition to this EC have been appointed as General Consultants for over 800 Km. of Phase-I roads in all the four provinces of Pakistan.

It is really encouraging to note that although the NWFP Package was awarded to EC almost one year after the signing of the Contract for Sindh & Balochistan and accordingly the construction of roads was started late as compared to other provinces, but the N.W.F.Province took the lead in substantial completion of the roads in the First Phase-I of the project.

It was a difficult job in many ways. For example the non availability of good Contractors in the first instance was a major problem as whatever Contractors could be found, it was difficult for them to realise and appreciate the need to follow the specifications, secondly the land acquisition is a major problem because in the tribal system, no one allows his land to be taken away from him for any purpose. There are other problems as well but with the co-operation of the provincial C & W Departments all the difficulties and problems were overcome and with the grace of Almighty 'ALLAH' the Project Roads have been completed successfully in Bannu, Mardan, Peshawar districts while some work is nearing completion in Risalpur and Nowshera Districts.

Civilization travels by roads, is a phrase which is very much reflective of the real importance of roads and it is true that for a developing country like Pakistan

In the first week of September, I visited Mardan. Although there was heavy rain fall that day, yet the inhabitants were plying their vehicles on those roads, and I was thinking that consequent upon completion of these rural roads, probably the dream for a speedy and safe transportation of agricultural produces from Farm to Market has come true. It is for sure that these roads will enhance the development of the areas and will bring prosperity for the people living in the surrounding villages.



A view showing a completed Farm to market road in NWFP.

Dedicated to Profession: Mansoor H Rao

A model of advancement through professional competence

Enthusiasm, sincerity, devotion, honesty, integrity, and above all the professional competence are the qualities that have earned Engineer Mansoor Hussain Rao the respect and admiration not only from the staff working under him, but from all his superiors as well.

Rao, as he is usually called, is Chief Engineer (Design) in Structures division at the Head Office in Karachi. He is serving with Engineering Consultants since 1976. An excellent and talented structural designer, who has earned his position and respect as Chief Engineer (Design) through hard work and devotion, thereby setting an example to all those coming in contact with him, be he a client, a contractor or an engineer.

Mansoor Rao was born at Shahdadkot, on 19 December 1951. His father, Mr Muzaffar Hussain Rao, was in service with the Government of Sindh and therefore the family kept moving from place to place, till they arrived at Tando Adam in 1960. There Mansoor Rao passed his matriculation examination in 1968 from the well known institution, the Jamia Millia High School. He then got admission in Government College Hyderabad, from where he passed his Intermediate examination in 1970, with Pre Engineering major. An all time First Divisioner, Mansoor Rao had a flair for technology and therefore went in to study Civil Engineering at the N.E.D. Government Engineering College Karachi.

Mansoor Rao graduated from the N.E.D. College in 1975, securing 8th position in his class. He started his career as a junior engineer with a consultant's firm. The very first task assigned to him was designing a structure of " Folded Plates". Although new to professional designing, the young Rao took up the challenge. He had the determination and he produced a design of the proposed structure. This was a success, but somehow the young man did not feel comfortable and soon said goodbye to his employers. After a few months he applied for a job in Engineering Consultants. He was called for an interview on March 16, 1976 and as a result was offered to join the same day, so he did.

Mansoor's first assignment was to complete the drawings for Avari Towers under the guidance of Director of Structures. Mansoor proved his mettle and performed his job well, within the very short time available.

This was how on 16th March 1976, Mr Mansoor launched his career as a Junior Design Engineer with EC.. He grabbed the opportunity and since that day to this, he has persevered in his profession in an exemplary manner. That is why he is now the team leader in EC's Structural Division and shoulders the responsibilities as Chief Engineer Design.

During his career as a structural engineer with EC, Engineer Mansoor Rao has to his credit the designing of the undermentioned prestigious projects:

- The Avari Towers of Karachi - Tallest building in Pakistan. It is a 23 storeyed, 242 feet high framed and earthquake proof structure.
- A large commercial complex in Tripoli, Libya; for Libya Insurance company. The complex is made up of two blocks of 16 and 23 storeys each having additional 3 storeys of basements under each block. These were also framed structures having composite columns and shear walls to resist earthquake forces.
- Grain storage silos of 50,000 - 60,000 tons capacity. These are 110 feet high structures equipped with automatic loading and unloading systems.
- Extensive civil works for several sugar, textile, and other industrial buildings in Pakistan, involving design of foundations for heavy machinery.
- Scores of bridges and culverts on various highways in Pakistan, Libya, and Yemen. These bridges have mostly prestressed pre-tensioned girders spanning in the range of 15 - 20 meters.
- Structural design of various sewage & water treatment plants for Civic Bodies at Karachi, Hyderabad and Lahore, in association with foreign consultants.

> ***An excellent and talented structural designer, who has earned his position and respect as Chief Engineer (Design) through hard work and devotion, thereby setting an example to all those coming in contact with him, be he a client, a contractor or an engineer.***

Its great to have Mansoor [Rao] on EC's design team. He has the potential and is bound to rise in his professional career on the basis of merit, his resolute and systematic approach to work and the best wishes of those with whom and for whom he works. We wish him all the best in pursuing his career goals and objectives.

Breaking The Monotony

Contributed by: Engr Shahab Raza

The most difficult of all tasks that men face in their allotted life span is how to structure their time so as to make life most rewarding and gratifying. In an effort to achieve this state, people programme their time in a variety of manners which, if generalised, could fall into three main categories i.e., working, sleeping, and pastimes. Although sleeping is not an activity but it is a necessary part of our time structuring. The word "pastimes" implies a broader meaning here. All activities other than sleeping and working are 'pastimes'. (Recreation, leisure, gossips, hobbies, entertainment, rituals, prayers etc.)

Mostly the combination of two of these activities or time framing predominates our lives. It is truly unfortunate that most of us fail to keep a balance between them.

"Work" in my opinion is a structuring of time, designed to face the external reality. "Work" in that it is productive or creative, may be highly satisfying by itself, or it may lead to satisfaction in future, in the form of recognition for a job well done. Activities which include work, not only are necessities of life but are rewarding in that they allow for mastery, excellence, and craftsmanship and the expression of a great variety of skills and talents.

But work activities are usually a programmed use of time where every body has specific tasks to do. During the time of work there is no need for intimate involvement with another person. Since working time is not programmed to establish free association with other persons, exceptions excepted. In a way we can say that work activities keep us apart from one another. Some people use their work to avoid intimacy, working at night in the office, instead of coming home, devoting their lives to making a million instead of friends.

In urban areas where people devote a large portion of their time in work activities, the problem of lack of intimacy and free association with other persons is quite prevalent. This could be destructive if it becomes a predominant form of time structuring. Relationships between persons under such situation do not progress and may never lead to true friendship. This situation is quite contradictory to the gregarious nature of human beings. People under such conditions are not socially facile.

The question now arises: is there a way out of this dilemma? Optimistically, there is. Through a slight alteration in the time structure of working people, it is possible to create an atmosphere conducive for better relationship among people working as organisations. A break in the monotony of work activities in the form of arranged pastimes such as picnics, recreation, games etc. can emotionally be highly rewarding. Such pastimes form the basis for the selection of acquaintances and may lead to friendship. Such engagements are straightforward with happy or well organised people whose capacity for enjoyment is unimpaired.

However, these programmed organisational pastimes should not disturb or overlap with the working activities but rather should be worked out so as to keep a balance of time structuring.

I remember, when I joined E.C. a year ago, my first two or three weeks were very discomforting for I had no acquaintances apart from some of the computer guys. I had purposefully coined the idea of organising an inter-divisional cricket tournament. I knew this would surely pave the way for better acquaintance with others and it did and within a week or so more people than I had imagined, became aware of my name and had started smiling and greeting me by waving their hands.

Vignette Mailbox

With this issue, we are adding another heading to keep you informed about the views expressed by our readers and improve the contents of our newsletter. It will also be a medium of communication between the readers and the editorial panel. This issue presents letters received from our readers at home and abroad expressing their views on "Vignette".

Australian Viewpoint

I have just received Volume I, Issue 4 of Vignette and I would like you to know how pleased I am to receive this publication. One of the great things about being a professional engineer is to strive to make conditions better for the physical enjoyment of our fellow men. I feel that your paper records the achievements of your firm and encourages your staff to strive for quality of service. Next year [1992] I hope to see that you have been able to work in Joint venture with an Australian firm because I believe our two countries have much in common. May I encourage you to keep up the important task of communicating through Vignette and may I wish you and all your staff a peaceful and prosperous 1992.

Eric B Brier,
Eric Brier & Associates,
Australia.

Appreciation at Home

I was pleased to receive the September - December issue of Vignette. Congratulations to Engineering Consultants and to you, are wholeheartedly extended for this effort..... I was particularly interested in your Foto from File. I believe I have a few photographs, taken as far back as 1986/89 which might be of interest to you for future issues. Do let me know of your interest so that I may dig these out and send to you with my compliments.

Saleem M beg,
Director, Envicrete Ltd.
Karachi.

A Banker's Comment

We saw your quarterly newsletter volume 1 issue 4 which provided useful information about different civil [engineering] projects in Pakistan....

Ajaz H Khan,
ABN-AMRO Bank,
Karachi.

NEWS & COMMENTS

- ***CBI Seminar on Reverse Transfer of Technology in Holland:*** In November last, EC's Managing Partner, Mr Zaheer Mirza was invited by the Centre for the Promotion of Imports from developing countries (CBI), to an exhibition cum seminar on Reverse Transfer of Technology (RTT), held in Rotterdam, Holland. RTT implies the export of skilled manpower from the developing countries to the developed countries, in joint ventures with foreign firms. The arrangement would have the potential of mutual benefit to the participants of any project, in that, the Third World engineers and technicians will be exposed to new conditions and provide technology for projects developed in a third world country, to enhance the capacity of the Joint Venture European consultants. In addition to that the foreign firms will be working in a much more competitive market. EC was one of the five consultancy firms invited from Pakistan, expressing their interest in this field. Surely it will be some time before any salutary advantages begin to accrue. The most significant of these would be the transfer of technology, in various disciplines of engineering. That initiative on the part of Pakistani consultancy firms would be instrumental in improving the quality of engineering profession in Pakistan and exposure of Pakistani firms in international engineering enterprises. EC is already working in Libya, Yeman Tanzania and Saudi Arabia.

- ***Visit by Secretary C&W Department Balochistan:*** Mr Ali Ahmad Baloch paid a visit to EC's Head Office on 3rd January,92. He toured all departments and took keen interest in the work being done in the Highway department. Mr Baloch expressed his appreciation of the serene atmosphere prevailing in the office as well as the keenness with which people were busy attending to their work. The modern computer bureau of EC also attracted the attention of the honoured guest and he was impressed by the expertise displayed by those working on the computer network terminals, operating plotters, scanners, digitisers, laser and coloured printers. Mr. Baloch recorded his approbations in the visitors book

- ***Visit by Project Director FMR Project, Balochistan:*** Mr Ghulam Muhammad Baloch, Project Director FMR, visited EC's Head Office in the first week of January,92. Mr Baloch went round all the departments and evinced particular interest in the computer bureau's working. He was impressed finding engineers busy on the design work pertaining to his project and expressed his satisfaction about the quality of work being produced. He later on commented that he did not expect to find a consultant's office so well organised and the in depth study of technical details that were being taken care of in designing not only the roads but the structures and ports, tunnels and irrigation projects as well. No wonder clients rely on the work produced by Engineering Consultants.

- ***Visit of Joint Secretary, MLGRD and Project Director PMU:*** Mr. Farooq Khan, Joint Secretary, Ministry of Local Government and Rural Development and Brigadier Shahid Hameed Khan, Project Director, visited EC's Head Office where they were given a presentation on the Farm-to-Market Roads Project, Phase I,by the Project Manager Mr Waqar Haider Naqvi. This was because of EC being the General Consultants to them for their ADB financed projects of 800 KM of roads and section consultancy on this project for the Provinces of Sindh, Balochistan and NWFP. Mr. Farooq Khan was satisfied with the progress EC has made on projects in the field, despite the prevailing insecure conditions on project sites in Sindh and Balochistan. EC is the successful firm, having substantially completed the NWFP FMR-I project Roads in the minimum of time as well as ahead of all other consultants working on the project in the province of Punjab, as 95% work on NWFP is over, while on other sections the progress is around 60%. This is so when EC was awarded NWFP Roads six months later. The clients expressed their full satisfaction about the progress achieved as well as the quality of work produced.

Mr. Zaheer Mirza in discussion with a visitor to EC's stall at CBI exhibition at Rotterdam, Holland.

Quotable Quote

If a kindling stick is brought into contact with another kindling stick, the result is sparks that rise heavenwards. However if a kindling stick is brought into contact with a non kindling stick, the result is terrible, smoke...!!!

AN OVERVIEW OF WORKLOAD

NEW PROJECTS

- Rehabilitation and Upgrading of Sewage Treatment Plant at Pakistan Steel Mills. (PSM)
- Extension of Avari Towers at Karachi
- Consultancy Services for Primary Education School Construction Programme in Balochistan (GOB)
- FATA Hydrometeorlogical Studies (USAID)
- Oil Pipeline from Pipri to Khalifa Point for PSO (70 Km)
- Study on Sugar Machinery & Equipment for NDFC

TRANSPORTATION

- **FMR Phase I:** General Consultancy Services for the entire Phase I of the project along with construction supervision of 800 km of the FMR in the provinces of Balochistan, Sindh & NWFP. The project is financed by ADB. (MLGRD)
- **FMR Phase II:** General Consultancy Services for the entire Phase II of the project comprising 200 km of roads. EC is working on this project with Indus Associated Consultants of Lahore. The project is financed by ADB. (MLGRD)
- **FMR Phase II NWFP (134 Km):** Design and construction supervision of 9 roads in Mansehra, NWFP. This project is financed by ADB. (C&W Deptt NWFP)
- **Provincial Roads Improvement Project Phase-II:** After completion of Phase I, which included feasibility study for 1274 Km of roads all over Paksitan, the project has entered Phase II which includes detailed engineering of over 550 Km top priority roads identified in Phase I in all the four provinces of Paksitan. This project is also financed by ADB. (NHA)
- **Fourth IBRD Highway Project Contract II (68 Km):** Construction supervision of Nooriabad-Hyderabad Section of Super Highway. The project is funded by the World Bank. (NHA)
- **Hasanabdal-Abbottabad Road (70 Km):** Construction supervision of overlay on the Hasanabdal-Abbottabad road (N-35) which is divided in two sections. Project is partly financed by Islamic Development Bank. (NHA)
- **Second Carriageway, Hasanabdal-Abbottabad Road (70 Km):** Design of second carriageway along the existing Hasanabdal Abbottabad road. Various geometric improvements and bypasses have been incorporated where necessary along with the new bridges. 80 % of the work has been completed. (NHA)
- **Gurumandir Flyover:** Planning and designing of a flyover at Gurumandir. Its a complex 6-way intersection in one of the most congested districts of Karachi. (KMC)

Ahmad Sharani receiving contract documents for Primary School Construction Programme works from Mr. Mahfuz Afridi, Additional Director PED, Balochistan.

ARCHITECTURE AND STRUCTURES

- **Port at Ormara:** Architectural design of on shore civic facilities as part of the Ormara Port Project.
- **National Stadium Complex:** Feasibility of the urban development and sports facilities around National Stadium, Karachi.
- **KDA Outfall Drains:** Construction supervision of structures for drainage outfall works leading into Malir River.
- **Matiari Sugar Mills:** Detailed design and construction supervision.
- **Mehran Sugar Mills:** Design & construction supervision of Mehran Sugar Mills extension in Sindh.
- **Housing Colony of Matiari Sugar Mills:** Architectural design of housing colony for officers of Matiari Sugar Mills.
- **Telephone & Telegraph Buildings:** Design & construction supervision of 21 telephone exchange buildings at various locations in Punjab for Lahore Telecomm Regions-I and II respectively.
- **Heavy Electrical Complex:** Design of officer's and worker's housing colony at Taxila & Kot Najeebullah respectively.
- **Nobel Textile Mills, Pattoki:** Design and construction supervision of textile mills at Pattoki.
- **Development Wing, KW&SB:** Design and construction supervision of KW&SB Development Wing at 9th Mile on Shara-e- Faisal Karachi.

PUBLIC HEALTH

- **Karachi Sewerage Project-Sewerage Component (K-1 & K-2 & K2s):** K-1 is an ADB aided project in association with M/S BALFOUR International of UK, for upgrading sewage treatment plants #1 & #2. K-2 is an ODA financed scheme for development of Karachi's sewerage system. (KWSB)
- **Karachi Water Supply Project, Construction Supervision of Syphon 19&20:** A World Bank aided project for laying 3rd standby syphon for Karachi's water supply system. (KWSB)
- **Hyderabad Water Supply and Sewerage Project:** An ADB financed project. EC 's staff is

CONT. ON NEXT PAGE

and the environ in EC is buzzing with business. Everyone is bracing up to meet the emerging challenges. May it be the preparation of a proposal, the planning of a public service project, or the design of a motorway, EC's professionals are committed to give a touch of excellence to the jobs entrusted to them. Perhaps that is why people are turning more and more to EC, to know how best to plan and transform their ideas, ideally, into practical realities. EC intends, Inshallah, to keep moving forward with greater zeal in the months and years to come.

POSITIONS AVAILABLE

Highway Engineer with five years experience of highway design. Those having additional experience of construction supervision will be be given preference.

Graduate Civil Engineer having at least ten years practical experience of planning and construction supervision of highway projects. Job requirement is to coordinate project activities at site, with client and other agencies, to ensure progress of work as scheduled.

Graduate Civil Engineer having 5 years exerience in structural design, specially design of reinforced / prestressed concrete girder bridges. Knowledge of computer aided design procedures will be preferred.

Architects holding B Arch degree or Diploma in Architecture with a knowledge of AutoCAD. Minimum experience 2 years, a must!

Junior Engineers willing to accept challenges and persue a career in any discipline of Engineering.

Computer Programmer, graduate with experience of programming in DBase. Must have 5 years experience in programming.

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seconded to Balfours team working on the project. (HDA)

- **Lahore Waste Water Treatment Plant:** Design of waste water treatment plant for Lahore Development Authority. The project is in association with BALFOUR International and financed by ODA. (WASA)
- **Auxiliary Pumping Station:** Design of auxiliary pumping station at Lyari, Karachi. (KWSB)

IRRIGATION

- **Pat Feeder Canal:** Detailed design and construction supervision of about 500 Km Pat Feeder Canal system in Balochistan. This project is in association with Halcrow and Zaheeruddin Consultants, financed by ADB and OCEF. (WAPDA)
- **Kotri Barrage Rehabilitation:** Design and investigation supervision for rehabilitation works at Kotri Barrage. The project is in association with Coode Blizard and Partners, and financed by ODA.
- **BIAD Water Supply and Sanitation System:** The scheme envisages the provision of elementary infrastructure for the uplift of masses, living in the rural areas of Balochistan, in the shape of small clusters of basic amenities.
- **Ground Water Trickle Irrigation:** Feasibility study and design of Trickle Irrigation system in Balochistan. The project is in association with M/s Wakuti of Germany, and financed by the ADB.
- **Chanda Fateh Khan Dam and Kandar Dam in NWFP:** Feasibility studies, site investigations and design of two small dams in NWFP. (SDD): IPO NWFP

PORTS & HARBOURS

- **Port at Ormara**: Planning and detailed design of a harbour at Ormara. The project is in association with Frederic R Harris.
- **Refurbishment of Berths 1 to 4:** Rehabilitation of berthing facilities at Karachi Port Trust. Project in association with Rendle, Palmer & Tritton of UK.

SPECIAL PROJECTS

- Study for shelter for people of low income group.

PROJECTS COMPLETED

- Construction Supervision of 4th IBRD Highway Project, Section 1 from Karachi to Nooriabad. (NHA)
- Lowari Tunnel: Feasibility and contract documentation of Lowari Tunnel with piggy-back shuttle service.
- Headquarter building, Khan Brothers.
- Multan Gymnasium for M.D.A.

Foto From File

The Envicrete Episode

This quarter's picture was taken during a field visit by the Director Structures Division, Mr Ahmed Sulemany alongwith two other EC Engineers in 1990. Seen in the picture are (from left to right) Mr Anis ur Rehman, Mr Ahmed Sulemani, Mr Amin Khemani, Mr Iqbal Sandhu and Mr Munsif. The project was designed and supervised by EC and currently in operation