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CCI SRI LANKA

Bulletin

THE NEWS PAPER OF THE CHAMBER OF CONSTRUCTION INDUSTRY SRI LANKA

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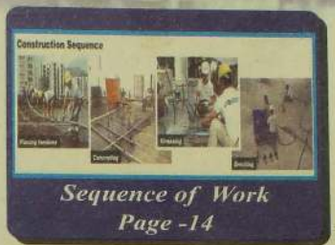

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FINANCE MINISTER INVITES CHAMBER TO PROPOSE NEW PROJECTS

A Chamber of Construction Industry (CCI) delegation led by it's President *Deshabandu* Surath Wickremasinghe was invited along with representatives of the other Chambers and Trade Associations by the Minister of Finance and Planning, Hon. Dr. Sarath Amunugama on 19th October, 2004 to discuss proposals for the forthcoming budget. At this meeting CCI agreed with the Minister on the need to enhance Government Revenue to facilitate economic growth and national development with investment in infrastructure development.

The reduction of the fiscal deficit enhancing Government revenue by widening the tax base, and the capturing of a larger number of Tax defaulters as against increasing the burden of tax on employed professionals and existing tax payers, were emphasized.

CCI also highlighted the tax avoidance by foreign consultants and contractors in particular and suggested that every foreign consultant and contractor at the time of entering into contracts in Sri Lanka should be required to open a tax file.

CCI was of the view that legislation must be enacted to make it obligatory that contracting parties should declare tax registration and disclose file numbers in all construction contracting documentation. The delegation reported that a large number of foreign consultants and contractors may not have obtained registration for taxes in this country and such evasions/leaks would have had sizeable impact on Government Revenue.

They also stated that sub-contracting and some construction input manufacturing and supplying sectors such as sand and bricks etc. remain largely informal. In that scenario, CCI was of the view that the sub-contracting system be converted to a formal sector by establishing a Sub-Contracting Exchange which is functioning quite effectively in certain countries and for other selected industries. Once the sub-contracting sector is formalized and registration criteria be introduced with a 'tax payer card', the entire construction Industry will become a responsible sector in the payment of taxes. Such introduction will necessarily result in enhancing efficient and competency of the level of the industry with the end product assurance.

Imports of spurious spare parts and sub-standard materials and under-invoicing also requires attention of the Government and some channels of monitoring will have to be introduced if correct levies are to be collected.

The Hon. Minister was of the view that CCI must come up with innovative proposals to generate economic activities and for mobilizing investments. He welcomed public-private partnerships as a successful formula to drive the economy and assured the facilitation of projects

President CCI, *Deshabandu* Surath Wickremasinghe assured Hon. Minister of CCI fullest co-operation regarding this matter.

Cabinet Approves Release of Offshore Sand Stocks

❖ RDA to release its existing stockpile of 1.6 million m3 of sand at Kerawalapitiya to the SLLRDC for sale to the public on the basis of replacement within one year.

❖ Establish a special fund in the SLLRDC from the proceeds of the sale of the Kerawalapitiya sand stockpile (less expenses for washing, sieving and replacement), solely for the purpose of part financing the preparation of a Master Plan for meeting the National sand requirements for the next twenty years.

❖ The SLLRDC to initiate action to seek Grant assistance to provide complimentary funding for activities entailed in the reparation of the Master Plan.

❖ The Minister in charge of the subject of Land Reclamation to appoint a Steering Committee to include a representative each of the Ministry of Environment, Ministry of Housing and Construction, Institute for Construction Training and Development, Coast Conservation Department, SLLRDC, University of Moratuwa, Chamber of Construction Industry to oversee the preparation of the Master Plan.

❖ Establish an Implementation Unit located within the SLLRDC to undertake the preparation of the Master Plan.

SLLRDC SIGNS MEMORANDUM OF UNDERSTANDING WITH RDA

Consequent to the decision of the Cabinet of Ministers, A Memorandum of Understanding has been entered into between Sri Lanka Land Reclamation and Development Corporation (SLLRDC) and Roads Development Authority (RDA) to enable SLLRDC to take over 700,000 cubic meters of sand stock piled at Kerawalpitiya, on the basis that the stock will be replenished on or before 30th April, 2005.

PRESENTATION ON BONDED SLAB POST-TENSIONING SYSTEMS IN BUILDINGS

As part of the Chambers' Agenda for Technical and Management Development of the Construction Industry it has facilitated a presentation on 'Bonded Slab Post Tensioning Systems in Buildings' in collaboration with VSL India (Pvt) Ltd. a fully owned subsidiary of VSL International Ltd. of Switzerland. The presentation will be made by Mr. R. Muthuganeshan, Managing Director, and his team of professionals from VSL India (Pvt) Ltd. at 6.00 p.m. on 19th November, 2004 at Hotel Galadari. Over 100 Construction Professionals are expected to attend the event.

CONSTRUCTION CLUSTER CREATED

A Cluster has been created to deal with issues relating to the Construction Industry under the National Council for Economic Development which has been appointed by Her Excellency the President to coordinate and implement Government Policy and Development Programmes. Ms. S.M. Karunaratne, Secretary Ministry of Housing and Construction Industry and Mr. Gratian A Pieris, Chairman, State Engineering Corporation are appointed to co-chair this cluster.

OUR RESPONSIBILITY

It is necessary that people work together in unison towards common objectives and avoid working at cross-purposes at all levels, if the ultimate in efficiency and achievement is to be obtained.

Provision of cost-effective services and solutions of quality to our members and stakeholders is our strategy to earn their respect and loyalty.

We need to grow by continually providing useful and significant products, services and solutions to the industry we already serve and to expand into new areas that are built on new technologies, competencies and stakeholder interests.

We need to view change in the market as an opportunity to growth. To use our resources, and as a commitment to develop innovative products, services and solutions. To satisfy the emerging needs of the industry, we need to demonstrate good citizenship, live up to our responsibility by being intellectual and a social asset to the community at large.

Betterment of our community is not a job left to a few. It is a responsibility to be shared by all stakeholders of such a society. We are guided by enduring values of business ethics that stretch back to our fundamentals.

For a Chamber that is closely associated with professionals there is no substitute for personnel and professional integrity doing well and doing good can go in hand in hand, trust and respect will always be a corner stone of success.

The Chamber must be managed by inspiration by sharing information. We need to empower our members and unleash ideas for the common good.

The Chamber is a business that must remain financially viable but profitable operations are not our only concern. A Chamber's success is dependent on trusting relationships as founded by all institutions of construction professionals. We need to be committed to uncompromising integrity. Elsewhere in this journal, we are addressing environmental issues promoting good citizenship in the observance of all laws of this country. Respect for environmental concerns will only enrich life of our community which is a fundamental obligation of civil societies.

In today's environment of global competitiveness, presence of multinational corporations, liberalization of trade and services, absence of good governance, etc. Redefining the role of a Chamber as we pursue business opportunities for our membership warrants attention of all stakeholders. We advocate exemplary citizenship by engaging in public-private-partnership (PPP) for model behaviour and activities in the governance of environment policy and practices. The social responsibilities of the private sector becomes an integral part of wealth creation processes which if managed properly will enhance the competitiveness and maximize the value of wealth creation to the society. The concept of corporate social responsibility has gathered momentum.

Today, the functions of an enterprise is intimately linked to creation of value through producing goods and services, society needs which will generate profits for its owners, while ensuring the welfare of the society and creation of employment opportunities. Long term sustain ability business success and shareholder value no longer can be achieved by maximizing short term profits, but instead only through market oriented responsible behaviour.

Organisations must be managed to produce an overall positive impact on the society. Corporate social responsibility has been defined as the continuing commitment to behave ethically and contribute to economic development while improving the quality of life of the workforce and their families as well as of the local community and society at large.

In the columns of this newspaper, we have continually focused on issues of competitiveness, regional cooperation and social responsibilities. We have advocated the need for good governance and political stability as important prerequisite requests for poverty reduction and equitable developments.

We have endeavored every effort to create new partnerships among different stakeholders, public-private sectors civil society, academia and interest groups. We are committed to work and partnerships creating strategic alliances to develop action oriented programmes delivering sustainable impact on ground.

We initiated the stakeholders' consultations by concluding Chamber's first annual sessions in August 2004. This forum process can be considered a successful experiment signifying that stakeholders' dialogue can lead to cooperation in good faith between parties with diversified views and interests. It has in fact lead to a sense of team spirit among those most closely involved in the construction industry and infrastructure development sectors. We are elated that we did succeed in initiating meaningful action to avert a crisis in the construction industry caused by non-availability of river sand.

We also, succeeded in initiating action for adoption of concrete roads and soil stabilization as emerging alternatives to satisfy the needs of Sri Lanka's road modernization programme. The achievement of this multi-stakeholder consultations the first annual session of the Chamber cannot be measured only in terms of what is on paper. It has to be measured in terms of intangibles: trust and good will built-up among participants and dynamics created within different organizations.

The Chamber will continue to hold stakeholder consultation forums and symposiums on issues related to construction industry and infrastructure sector on a more regular basis with the objective of formulating strategies and policies to promote economic, social and environmental progress with plan of action to be carried out in partnership between different stakeholder groups including statutory authorities. Creation of wealth and material of knowledge will form the package we will deliver.

SERVICE

IS THE CURRENCY THAT KEEPS
THE ECONOMY MOVING.
I SERVE YOU IN ONE BUSINESS,
YOU SERVE ME IN ANOTHER.
THE ECONOMY GETS A LITTLE BETTER.
WHEN BOTH OF US IMPROVE,
PEOPLE ARE SURE TO NOTICE.
WHEN EVERYONE IMPROVES,
THE WHOLE WORLD GROWS
STRONGER AND CLOSER TOGETHER.

RON KAUFMAN

Chamber Of Construction Industry Sri Lanka

CCI SRI LANKA

We Strive to...

- Be the voice of the Construction Industry
- Provide Management and skills education and training for the construction industry
- Be the promoter of services and business opportunities for the Chamber Members
- Catalize the formation of construction consortia
- Disseminate information for the Chamber Membership
- Facilitate market research and promote foreign Collaboration
- Promote Public / Private Partnership for Infrastructure and related projects
- Initiate the pension, health and retirement benefit plan for the construction industry

Invitation to Professionals in the Industry !

The Chamber has Provision in the Constitution to admit Construction professionals who have served the country with distinction, as Individual Members.

PROFESSIONAL DATABASE

All construction professionals could seek registration with the Chamber Secretariat to facilitate fulfillment of their employment/career expectations. The Chamber has now established a database to record construction professionals who are seeking employment opportunities, not only in Sri Lanka, but overseas as well. We shall provide maximum exposure and find right place for employment.

Announcements

- **Indian Ocean Rim Association for Regional Co-operation (IOR-ACR):** Following the meeting of the IOR-ARC Business Forum on the 22nd August, 2004, The Ceylon Chamber of Commerce has nominated the Chamber of Construction Industry Sri Lanka as the focal point for Construction Sector in Sri Lanka.
- **Asian Plan Business Co-operation Meeting Between European Architects, Planners & Engineers & Asian Construction Companies Leipzig Construction Fair 1st-4th February, 2006 EU Asia-Invest Programmes:**

Chamber of Construction Industry Sri Lanka is accepted as an equal partner to facilitate participation of the Asian Companies that wish to enhance their planning and construction management capabilities or looking for potential partners from the EU with long outstanding experience to implement large projects and to undertake sub-contracts.

CCI New Members

SRI LANKA LAND RECLAMATION & DEVELOPMENT CORPORATION
P.O.Box. 56, No.3, Sri Jayawardanapura Mawatha,
Welikada, Rajagiriya.Tel. 011-2863705,011-2889485
Fax. 011-2862457 E-mail: sllrdc@sltnet.lk

ARQ SAND (PVT) LTD,
No.95, Ananda Rajakaruna Mawatha,
Colombo 10.
Tel. 011-2665858 Fax. 011-5331313
E-mail: daham@cmb.httligistics.com

KELANI CABLES LIMITED
P.O. Box. 14, Wewelduwa,
Kelaniya
Tel. 011-2911224 Fax.2910481
E-mail: devinda@kelanicables.com

THE PALK STRAITS CRISIS FOR SRI LANKA

The Sethu Samudra Ship Canal Project

by Prof. Willie Mendis - Senior Professor and Former Vice Chancellor of the University of Moratuwa

B.Sc (Eng)., M.Sc. (Urban and Regional Planning)., F.R.T.P.I. (Lon), F.I.T.P. (SL), Chartered Town Planner.

The Palk Straits separate Sri Lanka and India by a mere 30 kms of waterway. It suggests an ideal scenario for promoting development on it's either side by the process of *Transnational Spatial Planning* in the sub-region formed by Sri Lanka and the four States of Southern India. It's groundwork has already commenced with the ISLFTA. The follow-up with a Comprehensive Economic Partnership Agreement is under discussion. In this situation, the Palk Straits has assumed much significance for chartering Sri Lanka's future development which has already proposed a Land-Bridge to link Talaimannar with Rameshwaran. On the other hand, the Tamil Nadu State Government has presently viewed the latter as incompatible with the security concerns overflowing from Sri Lanka's 20-year internal conflict in it's north and north-east. It has been further aggravated with the issue of poaching by Indian fishermen straying into Sri Lankan waters across the Palk Straits defined by an internationally recognised maritime boundary agreed between the two countries in 1976. And now India has proposed the fast tracking of the implementation of the Sethu Samudra Ship Canal Project (SSCP) which had been on the 'drawing board' for nearly 140 years. It's purpose being to enable naval and commercial vessels to travel via the Palk Straits from the east to the west coast of India without circumnavigating around Sri Lanka. It's transit within the territorial waters of India has been described as originating at the Tuticorin new harbour and traversing across Adam's Bridge in the Palk Straits, upto Point Calimere in the Bay of Bengal.

It involves the digging of a Canal in a Part of the Straits which will have an impact on the ocean currents therein, and on the fragile coast in north-west Sri Lanka. Yet, the EIA prepared by India's Research Institute NEERI, for the proposed project had omitted to consider Sri Lanka's inputs in its study. Apparently, nor had Sri Lanka raised the issue with the Indian Authorities, until it very recently decided to entrust the study of the implications of the project to an Inter-Ministerial Committee. Meanwhile, a regional human rights organisation based in Tamil Nadu has claimed that the SSCP is a threat to 'humanity and Sri Lanka'. However, the spokesperson of the Indian High Commission in Colombo has reportedly assured that the 'Indian Government would not go ahead with the project if it held a threat to the ecology of Sri Lanka'. The latter reaffirms the abundant goodwill which prevails between the two countries.

Sri Lanka's political consensus seems to be that they cannot possibly be against the Canal being constructed within the territorial waters of India. Also, that the port of Colombo can compete with the outcomes of the Canal. On the other hand, a shipping expert has cautioned that, 'Sri Lanka has been planning and making preparations to build the Colombo South Port with a capacity to handle annually 08 million containers, with India as the principal hinterland, blissfully ignorant of India's plan to scuttle our project'. Nevertheless, the Indian Chief of Naval Staff during his visit to Sri Lanka has said that there is enough traffic for the two countries to come to an understanding.

Meanwhile it is noteworthy that there is political consensus for the environmental aspects of the project to be specifically The Foreign Ministry has stated that the impact of the SSCP is an important issue, and that simultaneously with its study, Sri Lanka is in a process of consultation with India regarding the project. Meanwhile, India has reportedly stated that Sri Lanka has been regularly kept informed of the project. The environmental scientist at Sri Lanka's premier Aquatic Resources Agency, NARA, has also commented that they were not against the SSCP, but would like the damage to the environment be avoided as much as possible. Others have advocated that the SSCP be integrated with the proposed Land-Bridge in the maritime boundary making it advantageous to both countries. Even a senior official at the Shipping Ministry of India has remarked that the height of the Bridge can be raised so as to allow vessels to pass underneath. The good news is the report that Sri Lanka's concerns on the project is being taken up at the highest levels of the two governments.

In the meantime, different interest groups have brought in dimensions that were not in the origins of the SSCP. These have included the pleadings of a Sri Lankan Academic who was supportive of the Project, that it should be implemented 'only after the Tamil areas of the Sri Lankan North-East acquired autonomy'. Another analyst in the Sri Lankan media has cautioned on the 'geo-political implications of the SSCP by it's nexus with India's strategic defense initiatives to hold the power balance over the critical sea-lanes in the Indian Ocean'.

In addition, an Indian Scholar and the Tamil Nadu Government have proposed a bargaining stance for the 'islet of Kachchativu to be granted to India on a perpetual lease'. Further, it is pertinent to note that Sri Lanka's proposal for a 'ferry service across the Palk Straits to a South Indian Port remains on hold'. These are suggestive of a looming 'Crisis in the Palk Straits for Sri Lanka'.

The aforesaid were the reasons that prompted a comprehensive research on the SSCP as a pre-requisite for undertaking any work on *Transnational Spatial Planning* in promoting development on either side of the Palk Straits. In the latter connection, the Author has been enquiring for some years on the attributes which can create an **'Indo-Lanka Development Corridor'.** Its findings have been promising for proposing to the two governments to consider the designation of an inter-active 'development area' bounded by the aforesaid sub-region of Sri Lanka and the four southern States of Tamil Nadu, Kerala, Karnataka and Andhra Pradesh. The catalysts for same include the proposed Land-Bridge with access to India's 'Golden Quadrilateral' Highway network, which has now been designated as part of the Asian Highway linking 23 countries. The latter becomes a key opportunity to develop Sri Lanka's 'competitive advantages' in the global marketplace. This portrays the centrality of the Palk Straits for cordial Sri Lanka-India relations so that the tiny island can prosper and live in security and harmony in the backyard of the huge neighbour. Therefore, it is opportune for the establishment of a permanent bilateral commission to oversee developments therein. It will also be timely for the Ministry of Foreign Affairs to harness all work on the Palk Straits Region being carried out in Sri Lanka by different sources under the umbrella of its Institute of International Relations, to sustain a comprehensive policy on same in the national interest.

Average Construction Material Prices

Average Construction Material Prices (Rs.) — *Source of Information: ICTAD*

Material Type	1999	2000	2001	2002	2003	2004
Cement (50 KG)	270	287	348	357	385	413
Sand (cubr)	1,340	1,455	1,600	1,834	2,320	3,520
Metal 3/4" (cube)	2,951	2,987	3,065	3,027	3,080	3,164
Bricks (1000nos)	1,840	1,837	1,818	1,830	2,231	2,567
Steel (r/f - 12mm) (Kg)	31.71	31.82	35.15	38.42	47.13	67.89
Asbestoes Sheets	743	719	754	812	815	815
Aluminium (sqft)	796	925	1,117	1,110	1,117	1,223
Calicut tiles (1000nos)	10,280	10.662	11,045	11,950	12,398	13,925

JATROPHA AN ANSWER FOR FUEL CRISIS

Introduction: Jatropha curcus is a drought-resistant perennial, growing well in marginal/poor soil. It is easy to establish, grows relatively quickly and lives, producing seeds for 50 years.

Jatropha the wonder plant produces seeds with an oil content of 37%. The oil can be combusted as fuel without being refined. It burns with clear smoke-free flame, tested successfully as fuel for simple diesel engine. The by-products are press cake a good organic fertilizer, oil contains also insecticide.

It is found to be growing in many parts of the country, rugged in nature and can survive with minimum inputs and easy to propagate.

Jatropha curcus grows almost anywhere-even on gravelly, sandy and saline soils. It can thrive on the poorest stony soil. It can grow even in the crevices of rocks. The leaves shed during the winter months from mulch around the base of the plant. The organic matter from shed leaves enhance earth-worm activity in the soil around the root-zone of the plants, which improves the fertility of the soil.

Regarding climate, Jatropha curcus is found in the tropics and subtropics and like heat, although it does well even in lower temperatures and can withstand a light frost. Its water requirement is extremely low and it can stand long periods of drought by shedding most of its leaves to reduce transpiration loss. Jatropha is also suitable for preventing soil erosion and shifting of sand dunes.

Distribution and Habitat: It is still uncertain where the centre of origin is, but it is believed to be Mexico and Central America. It has been introduced to Africa and Asia and is now cultivated world-wide. This highly drought-resistant species is adapted to arid and semi-arid conditions. The current distribution shows that introduction has been most successful in the drier regions of the tropics with annual rainfall of 300-1000 mm. It occurs mainly at lower altitudes (0-500 m) in areas with average annual temperatures well above 20°C but can grow at higher altitudes and tolerates slight frost. It grows on well-drained soils with good aeration and is well adapted to marginal soils with low nutrient content.

Botanical Features: It is a small tree or shrub with smooth gray bark, which exudes a whitish coloured, watery, latex when cut. Normally, it grows between three and five meters in height, but can attain a height of up to eight or ten meters under favourable conditions.

Leaves: It has large green to pale-green leaves, alternate to sub-opposite, three-to five-lobed with a spiral phyllotaxis.

Flowering and Fruiting Habit: The trees are deciduous, shedding the leaves in the dry season. Flowering occurs during the wet season and two flowering peaks are often seen. In permanently hu-mid regions, flowering occurs throughout the year. The seeds mature about three months after flowering. Early growth is fast and with nursery plants may bear fruits after the first rainy season, direct sown plants after the second rainy season. The flowers are pollinated by insects especially honey bees.

Fruits: Fruits are produced in winter when the shrub is leafless, or it may produce several crops during the year if soil moisture is good and temperatures are sufficiently high. Each inflorescence yields a bunch of approximately 10 or more ovoid fruits. A three, bi-valved cocci is formed after the seeds mature and the fleshy exocarp dries.

Seeds: The seeds become mature when the capsule changes from green to yellow, after two to four months.

Soil Type: Grows on well-drained soils with good aeration and is well adapted to marginal soils with low nutrient content. On heavy soils, root formation is reduced. Jatropha is a highly adaptable species, but its strength as a crop comes from its ability to grow on very poor and dry sites.

DO FINANCIAL REGULATIONS, TREASURY CIRCULARS REALLY OBSTRUCT THE ADMINISTRATION AND EXECUTION OF CONSTRUCTION PROJECTS FUNDED BY THE CONSOLIDATED FUND?

Eng. (Brig.) K. D. A. Perera

1. Introduction:

a. It is often experienced that during the execution of a project and even after completion, payments for work done are unduly delayed. Very often Clients stop payments because there are no visible funds in the contract/project. Such delays compel Contractors to borrow money from the Banks at high interest rates, which in turn erode into their profits. All these factors contribute directly or indirectly to delays in project execution.

b. For example, a M1 Contractor's final bill certified by the Consultant/Engineer and submitted to the Client on 23rd Nov. 1999. Still this payment has not been finalized. The delay is nearly four years and eleven months. This is the situation of a delayed payment to that particular M1 Contractor. There are so many cases as such.

c. Presently the responsibility for delayed payment oscillates from one state official to another with no conclusive decisions. Arguments generally centre around the Financial Regulations, Public Finance Circulars, issued by the General Treasury and Guidelines on Government Tender Procedure revised edition August 1997 etc., which are often used out of context as a shield in defence of their delays. Ironically, these are the very instruments that have been created to streamline and expedite the procurement and execution of construction projects.

d. This paper attempts to analyse the causes for this unhealthy situation and enlighten the reader on the regulatory instruments that are available, which if strictly followed could help avoid the recurrence of such problems.

2. Financial Regulations:

a. ***The Financial Regulations 1992 revision (FR) are a set of rules and guidelines laid down by the Government for the carrying out of the financial transactions in an orderly manner and are not intended to be an obstruction to the execution of Government construction projects and other programmes of work.*** Chapter XIII of Financial Regulations 1992 revision, provides the Guidelines for Government servants to procure goods, services and administer works on Government contracts. Chapter XIII of Financial Regulations has been amended by the Government Guidelines on Tender Procedure revised edition August 1997, which is also called the Blue Book.

b. The Financial Regulations are flexible in that they empower "***a Head of Department may, in appropriate circumstances, deviate from the procedures laid down, if he is satisfied that such deviation is necessary in the public interest. Full reasons for doing so should be recorded and the Head of Department should justify his actions***". This is the authority, interpretation and the direction given by the President, Minister of Finance and the Treasury for Heads of Departments to take decisions in any construction project, or any other programme. (Please refer the Foreword page No. VIII and Authority in page No. IX in FR 1992 revised edition).

3. Project:

a. What is a Project? A Project is a proposal for capital investment to set-up facilities, which are expected to provide/produce goods, services or works. A construction project is an activity related to works, and an investment, which has operational activities with each activity having a commencement time and a completion time.

The resources used are money, material, machinery and men for the accomplishment of all activities of the entire project giving consideration to time, cost and quality.

b. Steps to be taken for a project to be administered properly are as follows: -

1) Feasibility Studies/Site Investigations/Highway Surveys/ Engineering Surveys

2) Pre - procurement activities
   - i Environment clearance
   - ii Social impact and assessment
   - iii Land acquisition, compensation and resettlement
   - iv Relocation of utilities

3) Preparation of an Engineer's Estimate/Firm Total Cost Estimate
   - i Architectural design
   - ii Structural design
   - iii All other relevant designs related to the particular project
   - iv Specifications
   - v Bills of Quantities

4) Preparation of tender documents

5) Approval of tender documents and the Engineer's Estimate

6) Tender notification and issue of tender documents

7) Evaluation of tenders

8) Approval of tenders by the appropriate authority

9) Awarding of tenders

10) Implementation of the tender award (Contracts)
   - i. Contract administration and issuing of payment certificate after certification by the Engineer.
   - ii. Issue of practical certificate of completion.

11) Issue of final certificate of completion after the defects and liability Period.

4. Procedure in obtaining a construction project (capital works) & how monetary provision is made.

a. There are two stages in getting the approval for a construction project (capital works) by any Head of Department/Government Department, ie., preliminary approval under FR 35 and final approval under FR 36. Approval under FR 35 is given for the project concept in principle and approval under FR 36 is given for the cost of the project/Firm Total Cost Estimate.

b. The Head of Department has to request well in advance through the Line Ministry Secretary to the Department of National Planning, to obtain the necessary approval for the project. Thereafter, the Department of National Planning will scrutinized the requirements and inform the Head of Department/Line Ministry Secretary about the decision of the approval. However, if it is a larger project generally (Rs. 10 Million and above) the approval from the Cabinet of Ministers has to be obtained.

c. Incurring of expenditure on designs, preparation or engaging Consultants to undertake the feasibility studies has to be done after obtaining the preliminary approval under FR 35. If the funds are available in the current year votes, the Head of Department shall select and appoint a Consultant for the preparation of designs, drawings, specifications, Bills of Quantities and tender documents. The Bills of Quantities shall be prepared as per FR 20, Guidelines 10, 12.1, 12.2 and Public Finance Circular No. 352 (13) dated 03.09.2001 & 352 (14) para 1 dated 11.09.2001/ Public Finance Circular No. 352 (22) para 2 dated 30.09.2004.

d. If funds are not available, Head of Department shall request the Treasury in obtaining the necessary allocation in carrying out the feasibility studies for the preparation of Firm Total Cost Estimate. Therefore, it is strongly suggested that the Treasury should provide an allocation to the Client Department at the time of conveying the approval in order to carry out the feasibility studies prior to the submission of Firm Total Cost Estimate under FR 36. This allocation is very important at this stage because Firm Total Cost Estimates can be prepared only after attending to site investigations, feasibility studies and engineering surveys, highway surveys and where applicable pre-procurement activities.

e. After the feasibility, studies the Head of Department will request the Treasury with the summary sheet of the Firm Total Cost Estimate and project brief to obtain the final approval under FR 36 for the project cost.

f. To obtain the necessary funds for the implementation of the project, it has to be included in the Annual Estimates of the Government. Therefore, in order to include this project in the Annual Draft Estimates for the following year, Head of Department has to inform the Treasury, generally before end of May in the current year. Once the Annual Budget of the Government is approved by the Parliament, the Head of Department will initiate the tender process such as appointment of Tender Board and Technical Evaluation Committee, approval of tender document, inviting bids etc. Refer Guidelines 13.1

5. Briefing by the Head of Department/ Project Brief

a. Before the commencement of the Project, the Head of Department, along with the end user of the project, should brief the Consultant about the requirements of the project. It is advisable for the Head of Department to prepare a project brief in writing and hand it over to the Consultants in the first meeting itself. The requirements should be sufficiently discussed by all interested parties concerned and clearly indicated to the Consultant, prior to the preparation of plans, Bills of Quantities and Engineer's Estimates. The end user and all other interested parties should give all the minor details of the project to the Consultant/Architect who will include all these requirements and prepare a complete set of drawings so that the Estimator can prepare a properly structured Bills of Quantities.

b. Once the drawings are completed, it is customary for the Consultant to present the drawings to the Head of Department, explain the project in detail, and obtain his signed approval for proceeding with the preparation of an Engineer's Estimate. Thereafter, no changes should be entertained except for minor changes, which could be accommodated at the estimating stage, and not after. If a new Head of Department or new end user assumes duties, he/she should not interfere in the preparation of Engineer's Estimate by changing the scope of the work, unless it is extremely important. In principle, these changes/after thoughts should not be encouraged or should be kept to a bare minimum.

c. Therefore, it is duty of the Head of Department/direct end user/all other interested parties concerned to provide all the details of the project to the Consultant in the preparation of all drawings and thereafter Firm Total Cost Estimate.

6. Feasibility studies / Site Investigations / Highway Surveys/ Engineering Surveys, Preparation of an Engineer's Estimate / Total Cost Estimate and Tender Documents

a. The most important step in the contract administration process is the preparation of a design cum construction oriented Engineer's Estimate for the project. In doing so, Consultant shall plan and carryout a detail feasibility study, site investigations, engineering surveys / highway surveys and where applicable pre-procurement activities. If feasibility studies, site investigations and engineering surveys/highway surveys are not done properly, invariably variations could occur from the very beginning, thereby the project will be delayed, and there will be cost overruns as well. Therefore, Head of the Department should obtain an allocation if not available, from the Treasury at the time when request is made for the preliminary approval (FR 36) for the project. Thereafter allow sufficient time for the Consultant to attend to the procurement planning, contract management components and especially for the preparation of firm Total Cost Estimates, so that the variations, which could occur, can be minimized.

b. In addition, FR 20 guides the Consultants on how to prepare a Bills of Quantities/Engineer's Estimate. If any Consultant prepares the Engineer's Estimate as per FR 20, there could be no cause for any quantity variations except for a very few. In the case of building Projects, any variation above Damp Proof Course (DPC) level cannot be accepted as all completed drawings are given to the Estimator, at the time of estimation. However, below Damp Proof Course (DPC) level variation can be accepted sometimes due to adverse physical conditions encountered, which are unforeseeable even by experienced Consultants, in spite of the feasibility studies done, which is covered by provisions of contingency for payment as per FR 20.

c. Specifications play a major role in the preparation of Firm Total Cost Estimates / Engineer's Estimate. It clearly states the quality of materials, the workmanship desired and the method of doing the work. It enables the Contractor to quote correct rates for the works. If the Bills of Quantities are not worded in a manner that indicates the requirements of the specification, variations will invariably occur. This situation will entitle the Contractor to claim an additional payment, which become a burden to the Client, resulting in both delayed payment to the Contractor and delays to the project. Therefore, strict compliance of wording Bills of Quantities items in relation to the specifications by the authorities should be followed.

d. In the preparation of Total Cost Estimates, the FR 20 states as follows:

FR 20 Total Cost Estimates

' The Total Cost Estimate of each project should be determined on the basis of a carefully priced Bills of Quantities which is supported by detailed schedules showing requirements of material, labour, plant and equipment utilization and schedules of prices on which the Bills of Quantity rates

See page 07

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were arrived at. There should be supporting documents to monitor price changes and translate them to rate changes, as a matter of routine, for use if needed. The Total Cost Estimate prepared for Examination of Works Proposals in terms of Financial Regulations should be prepared on this basis adding 10 percent for Contingencies and a further 10 percent to allow for escalation of prices within that year. If the work has to be phased out over more than one year, the allowance for price escalation should be 10 percent for the first year, 20 percent for the second year, 30 percent for the third year and so on, in respect of the work to be done each year. The allowance for Contingencies and price escalation should be indicated separately in the preparation of Total Cost Estimates and should not be disclosed even at the time of calling for tenders or at negotiation with the Contractors, when the exact approved Total Cost Estimated (excluding these percentages) should be used.'

e. This FR 20 has been emphasized in Government Guidelines on Tender Procedure revised edition Aug. 1997. Guideline 12.1 of the blue book.

f. According to the FR-20 and the Public Finance Circular No. 352(13) dated 03.09.2001, 10% Contingency provision, and according to Public Finance Circular No. 352 (14) Para 1 dated 11.09.2001 /Public Finance Circular No. 352 (22) Para 2 dated 30.09.2004 provision for price escalation shall be included in the Engineer's Estimates/Total Cost Estimate. ICTAD/ID/04 has to be used in selecting the correct preliminaries and Construction Management Services.

g. An Engineer's Estimate has to be prepared in such a way that it should be a design cum construction oriented Engineer's Estimate. The Estimator/Consultant should have the designs knowledge as well as construction experience, so that a proper Engineer's Estimate can be prepared. The Engineer or Consultant shall prepare the Engineer's Estimate using only all the detailed drawings and not on sketches. It is also noted that many Engineer's Estimates are prepared by without visiting the site, site investigation reports and feasibility studies. The Tender Document/Bills of Quantities are merely copied from the computer for tender purposes without visiting the sites. There are instances tenders are awarded without even acquiring the site. This gives rise to variations not consistant with FR 20 and Public Finance Circular No. 358 (4) Annexure 6 dated 29.11.1999.

h. All these factors contribute to unnecessary variations, and invariably will delay the payment to the Contractors as well as delaying the projects. The Engineer/ Estimator/Architect/ Consultant should take the blame for this situation and have no right to find fault with the provisions of Financial Regulations and Public Finance Circulars which they have not complied with. Authorities should make the site visits, feasibility studies and site investigations be mandatory for the Consultants/ Estimators in the preparation of the Engineer's Estimates. Thereby, the variations, which may occur can be minimised. The higher authorities concerned should implement these instructions strictly through the Executive Agencies.

i. The detailed drawings required in the preparation of a proper Engineer's Estimate/Firm Total Cost Estimates are as follows: -

1) Engineering survey of the site/bore hole details if any
2) Architectural drawings, plans, sections, elevations, and details of doors, windows, roof, ceiling and foundations
3) Structural drawings
4) Electrical drawings
5) Water supply & sewerage drawings
6) Air - conditioning drawings
7) PABX system drawings
8) Fire system drawings
9) Service details drawings of lifts and escalators
10) Landscaping drawings

j. The Total Estimated Cost/Engineer's Estimate breakdown is as follows:

1) Construction cost -
Preliminaries Bill No. 1-
BOQ Items No. 2

2) Contingency - 10% of the Construction Cost

3) Design Consultancy Fee to be decided with respect to the project

4) Escalation -
i. Escalation for 1st year (10% of Construction Cost)
ii. Escalation for 2nd Year (20% of Construction Cost)
iii. Escalation for 3rd Year (30% of Construction Cost)

5) VAT - 15% - Construction Cost + Design Consultancy

k. Once the preparation of an Engineer's Estimate and Bills of Quantity items are completed, the Engineer's Estimate has to be checked to ensure that the correct pricing are applied by using periodically available rates published by District/Divisional Secretaries, price fixing committees and the market rates in the area (Guideline 162.1). Thereafter, Engineer's Estimate has to be checked and approved by an independent competent professional for whether adequate provisions for desirable construction methods and the specifications have been provided.

l. Preparation of Tender Documents/Standard Bidding Document. The Institute for Construction Training and Development (ICTAD) has prepared and issued on behalf of Treasury and the Government of Sri Lanka a Standard Bidding Document (SBD/01 2001 edition) for procurement of works, to be used by the Client Departments in the administration and the execution of projects funded by consolidated fund. This document consists of 2 volumes.

m. The Client Departments are informed that, "No amendments should be made in the body of volume 1 section 1 & section 3. However, if there are any special conditions it can be included in the contract data and the bidding data. But these special conditions should in any way be unfair contractual Conditions.

n. Therefore, the Head of Departments should inform the Consultants to plan and prepare the Firm Total Cost Estimate, specifications, tender documents, conditions of contract, contract data and bidding data according to the Financial Regulations, Public Finance Circulars and Guidelines from Government Tender Procedures, for the betterment of the construction industry as well as for the Clients/Contractors.

The relevant Financial Regulations, Public Finance Circulars, Guidelines, which are required in the preparation of Tender Documents, are given below:-

1) Public Finance Circular No. 372 dated 06.05.1999
2) Public Finance Circular No. 372 (1) dated 30.12.1999
3) Public Finance Circular No. 384 dated 10.03.2000
4) Public Finance Circular No. 352(11) dated 09.02.2001
5) Public Finance Circular No. 352(13) dated 03.09.2001
6) Public Finance Circular No. 352(14) dated 11.09.2001 amended on 30.09.2004
7) Public Finance Circular No. 352 (17) dated 04.12.2001
8) Public Finance Circular No. 364 (3) dated 30.09.2002
9) Public Finance Circular No. 352 (21) dated 15.10.2002
10) Public Finance Circular No. 352 (22) Para 2 dated 30.09.2004
11) FIN letter No. 1076-260-180 dated 26.08.2001
12) FR 20, Guidelines 12.1, 12.2, 21, 46.2, 58, 62.8, 126, 144, 148.1 and 155 amended of blue book.
13) ICTAD ID/04 Preparation of Preliminaries

7. Tender notification and Issue of tender documents, Receipt of tenders and Opening of tenders, Evaluation of tenders, Approval of tenders by the Appropriate Authority and Implementation of Tender Award

a. The Limits of Authority for projects funded through the Consolidated Fund have been increased by issuing an Addendum (3) to the Public Finance Circular No. 358 (5) dated 06.09.2002. Please refer letter No. FIN-1076-260-164 dated 14th Sept. 2004 issued by Deputy Secretary to the Treasury (DST).

1) Authority Limits for Projects Funded by Consolidated Fund

Guideline No. 14 - The Limits of Authority for the Tender Awards

i. Head of the Department up to Rs. 01 Mn.
ii. Departmental Tender Board up to Rs. 25 Mn.
iii. Ministry Tender Board up to Rs. 100 Mn.
iv. Cabinet Appointed Tender Board above Rs. 100 Mn. (Cabinet of Ministers)

Guideline No. 15 Minor Tender Boards up to Rs. 5 Mn.

Guideline No. 179 Authority for deviating from Tender Procedure

i. Head of the Department up to Rs. 200,000
ii. Departmental Tender Boards up to Rs. 5 Mn.
iii. Ministry Tender Board up to Rs. 10 Mn.
iv. Secretary to the Treasury/DST up to Rs. 50 Mn.
v. Cabinet of Ministers above Rs. 50 Mn.

b. The Tender notification and Issue of tender documents, Receipt of tenders and Opening of tenders, Evaluation of Tenders, Approval of Tenders by the Appropriate Authority and Implementation of tender award is the next process in contract administration. The following Public Finance Circulars have given instructions for the Technical Evaluation Committee Members to prepare the Technical Evaluation Committee Report [Refer Guideline 129(1)]. A time frame for the evaluation of tenders has also been given. (Refer Guideline 8.1).

i. Public Finance Circular No. 352(2) dated 11.02.1998
ii. Public Finance Circular No. 352(3) dated 02.03.1998
iii. Public Finance Circular No. 352(6) dated 29.05.1998
iv. Public Finance Circular No. 370 dated 13.05.1999
v. Public Finance Circular No. 352 (10) dated 24.10.2000
vi. Public Finance Circular No. 352 (11) dated 09.02.2001
vii. Public Finance Circular No. 358 (4) dated 29.11.1999 annexure 6
viii. Guidelines 21, 144, & 155 amended of blue book.

c. In the case of tenders handled by the CATB, with the assistance of the Technical Evaluation Committee, the Cabinet Appointed Tender Board will recommend the contract award to the Cabinet of Ministers and the Secretary to the Cabinet will inform the Cabinet Approval to the Head of Department through the Line Ministry for further action. The Head of Department shall inform the Contractor immediately as per Public Finance Circular No. 404 dated 21.03.2003 (within 14 days of the approval of the Cabinet of Ministers/appropriate approving authority).

8. Variations

a. Variations, which are inevitable, occur during the implementation of the Project, and we shall discuss how the variation orders should be approved with financial cover using the Financial Regulations, Public Finance Circulars and Guidelines on Government Tender Procedure revised edition Aug. 1997. In order to reduce the occurrences of delays in payments for variations, these Financial Regulations, Public Finance Circulars and Guidelines on Government Tender Procedure revised edition August 1997 should be followed properly and quickly by State Officials. No one can say that the Financial Regulations, Public Finance Circulars and Guidelines obstruct the administration and execution of Government Construction Projects. On the contrary, actually they assist and guide the State Officials in getting the approval for variations with financial cover.

b. Variations can occur in two ways. Firstly, quantity variation or excess quantities in the items appearing in the BOQ and secondly new items which do not appear in the BOQ. Some Consultants break-up the variations into the following categories:-

1) Items missing in the BOQ
2) Unforeseen Circumstances
3) Alteration to BOQ for improved performance, quality and cost effectiveness
4) New works ordered by the Client

9. Authorization of variation orders up to 10% of Contract Sum

a. Now, we will discuss how efficiently, effectively and economically, a Head of Department can approve any variation with financial cover that may occur during the course of the construction project.

b. A Contract Variation Order (CVO) may be authorised by the Head of Department, provided that the net sum of the variation order and any previous variation does not exceed the contingency provisions provided in the approved Contract Budget, normally 10% of the original Contract Amount. Refer Public Finance Circular No. 352 (11) dated 09.02.2001 Para (4) and Para (5) and Guidelines 153.1, 153.2 and Public Finance Circular No. 352(13) dated 03.09.2001.

c. The Public Finance Circular No. 352(15) dated 8/10/2001 has clearly spelt out and has delegated authority to the Head of Department to take immediate action in approving the variations and executing of Contract Management (Guideline 148.1). By this Circular, a Project Panel has to be instituted where they will recommend the variation approval immediately to the Consultant and the Contractor, with financial cover. The Project Panel will consist of the Head of Department or his representative, end user, Accountant and the Engineer or the Technical Officer of the Department.

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the Contractor and the Consultant will be summoned to this panel if required.

d. When a variation order is given in terms of the Conditions of Contract SBD/01 Clause 40, the Contractor shall provide the Engineer with the quotation or rate analysis, for carrying out the variation order within 7 days or such extended time given by the Engineer. After assessing and within 7 days, Consultant/Engineer shall forward the Contractor's quotation or rate analysis to the Head of Department/Project Panel for approval. Refer Public Finance Circular No. 352 (11) dated 09.02.2001 and Public Finance Circular No. 352 (15) dated 08.10.2001.

e. If the Contractor's quotation is unreasonable and variation (item not appearing in the BOQ) is urgent and the Contractor has also not agreed for the Engineers' new rate/quotation, Head of Department can approve the variation order on principle. Thereafter order shall be given to the Contractor to carryout the work and the Contractor could be paid at departmental rates or provisional rate recommended by the Engineer or the Consultant in the immediate interim bill.

f. Thereafter, Head of Department with the help of the Project Panel will immediately reconsider and finalize the new rate and inform the Contractor accordingly considering the recommendations made by the Engineer/Consultant. The Contractor may refer the matter to Adjudicator, if he disagrees with the rate approved by the Head of Department.

g. The 10% contingency provision, which is a mandatory requirement, shall be used by the Clients in approving these variations. Public Finance Circular No. 352(13) dated 03.09.2001.

h. Therefore, the Financial Regulations and Public Finance Circulars guides and advises the Consultant/Client on how to take quick decisions for a variation within 10% that may occur during the implementation of the contract/award.

10. Authorization of variation orders likely to exceed or exceed 10% of the Contract Sum

a. If that variation order exceeds 10% or if the contract sum is likely to be exceeded or an increase in the cost is anticipated, the Head of Department should go for a revision of Total Cost Estimate immediately under FR 72 and Guideline No. 153.3, instead of waiting till the Project is over. (Please refer Public Finance Circular No. 352 (15) dated 8.11.2001). Unfortunately, the procedure today is that Heads of Departments, without using the provisions of this Circular, due to unknown reasons, wait till the project is over to request for the revision of Total Cost Estimate and thereby delay the payments to the Contractors.

b. In the case where the Cabinet of Ministers is the appropriate authority, a Cabinet Memorandum may be submitted by the Minister requesting approval for contract variation orders and award of change order, **without going through the process of Cabinet Appointed Tender Board**, provided the Secretary of the Ministry concerned is satisfied with the variation (Refer Guideline 153.4). For this purpose, the Secretary may obtain the assistance of a Technical Evaluation Committee appointed by him, inclusive of a Treasury Representative nominated by the Secretary to the Treasury. There is however, no objections to the Treasury representative who has served earlier in the Technical Evaluation Committee assisting the relevant project without seeking fresh approval for a nomination of a Treasury Representative. Please refer letter No. FIN 1076-200-207 dated 24.09.2001, issued by Secretary to the Treasury.

c. It is observed that only few Line Ministry Secretaries follow this provision provided in the Guideline 153.4 taking the responsibility and take necessary action to submit the Cabinet Memorandum without going through the process of CATB.

d. Only when the Secretary to the Ministry is not satisfied with the variation, then he should sought Cabinet approval through the Minister, for the appointment of a Cabinet Appointed Tender Board to consider it.

e. Under exceptional circumstances, if there is no time in obtaining the rate analysis / quotation due to the emergency / catastrophe situation, it is the duty of the Head of Department to grant approval to the Contractor through the Consultant to carryout the variation order immediately. At the same time, it is the duty of the Contractor to submit the rate analysis immediately and checked by the Consultant and forward it to the Client for approval [without waiting till the variation or project is over, refer PF Circular No. 352(15) dated 08.10.2001], within the 10% of the Contract Sum or even exceeding the 10% Contract Sum procedure. The Contractor may refer the matter to the adjudicator if he/she disagrees with the rate approved by the Client.

f. Again, the Financial Regulations are very clear and the correct directions are given to the Heads of Departments to act immediately if the variations are likely to exceed 10% of the Contract sum.

11. Payment Procedure

a. The Head of Department should note that the contract agreement he has signed with the Contractor, "in consideration of the execution and completion of the works and remedying of defects wherein the Initial Contract Price or such other sum as may become payable under the provisions of contract at the times and in the manner prescribed in the contract". In Conditions of Contract (SBD/01, 2001 edition), it clearly states that the Employer shall pay the Contractor for interim bills the amount certified by the Engineer within 14 days (clause 43.1) of the date of each certificate, and in Final bill the Employer shall pay the Contractor amount certified within 28 days (Clause 57.1) of the issue of Engineer Certificate on the amount due.

b. If the Employer makes a late payment, the Contractor shall be paid interest on the late payment in the next payment. Interest should be calculated from the date by which payment should have been made up to the date when the late payment is made at the prevailing rate of the 1% over the lending rate of the Central Bank to Commercial Banks.

c. The payment procedure has been delegated and spelt out in simple manner by the following Financial Regulations namely FR 135, 136, 137, 138 and 139. The following stages or functions may be distinguished in expenditure. They are authorization, approval, certification and payment.

d. FR 136 (6) clearly states regarding payments that the records of the Authorising Officer are compared and reconciled at least once a month with those of the Certifying Officer so that the Authorising Officer may know the precise amount available for future commitments.

e. Public Finance Circular No. 352(11) dated 9.2.2001 states that Accountant responsible for the payment and the Engineer are equally responsible to make the payment within the specified period of time in the agreement an Engineer should take action to keep the Accountant informed in advance, with respect to the value of bills in hand, in order to make prior arrangements for the payments.

f. It is very unfortunate to note that in spite of the Financial Regulations, Public Finance Circulars and instructions issued by the Treasury, some Executive Agencies get unnecessarily involved in too many internal procedures and various Committees in approving variations and making payments. Although Financial Regulations and Public Finance Circulars have streamlined the approval and the payment procedures, some Heads of Departments still follow lengthy procedures and delay the approval and payments to the Contractors, which in turn result in delaying of the project as well as incurring of additional costs to the Government/Tax payer.

g. We observe that there is a delay in the approval and payment for excess work. This excess work can be approved and paid using either the 10% contingency provision or from the savings of the Bills of Quantity items & price escalation contingency. Even the extra work can be paid similarly. However, a Public Finance Circular has to be issued by the Treasury covering the use of savings from the Bills of Quantity items, the contingency items, and price fluctuation contingency provision for payment to excess works, extra works within the Total Estimated Cost.

12. Conclusion & Recommendations

a. **Conclusion:** In conclusion, let me discuss how variations, which occur, can be reduced or avoided, so that the Contractors, who carry out the instructions of the Engineer and Client on variations, are paid promptly by the Public Servants/Client Departments without blaming the Financial Regulations, Public Finance Circulars and Guidelines on Government Tender Procedure. The grievances of the Contractors for non-payment for work done or delayed payment for excess and extra works can then be reduced or avoided. It is urged that the Heads of Departments ensure that the following steps/actions are taken immediately. This is for the benefit of everybody concerned as well as the Construction Industry, which will finally contribute to the economy of the country as well.

The country urgently requires pro-active, dynamic decisions to be taken using these much-valued Financial Regulations, Public Finance Circulars and Guidelines on Government Tender Procedure.

b. **Recommendations:**

1) Selection of a proper Consultant for the project.

2) Site visits for the Consultants/ Estimators shall be made mandatory.

3) A complete feasibility study, site investigations, Engineering Surveys, Highway Surveys are made use in the preparation of Engineer's Estimates.

4) No copying of previous Bills of Quantities for the tender documents, without visiting the sites and site investigation reports.

5) Preparation of all drawings required for the project for estimation. Estimation from sketches should be stopped immediately.

6) Approval for all the drawings by the respective Chartered Architects, Chartered Engineers (Civil, Electrical, Mechanical) depending on the relevant project.

7) Preparation of a Design cum Construction Oriented Realistic Engineer's Estimate by the Design Engineer or a Chartered Engineer using method of construction/statements, their designs and construction experience, and allocating a realistic contract period for the project. Please refer Public Finance Circular No. 372, stated 0605 999.

8) Tender documents, specifications along with the Bills of Quantity shall not be forwarded to the Tender Board for Tender Award if sufficient provision is not available to meet the cost of the Contract award. Please refer Public Finance Circular No. 352 (14) para 3 dated 11.09.2001.

9) If a new Head of Department/User has taken over the duties, he/she shall not interfere in further requirements and changing of scope and disturb the estimation process, and even during the construction stage. After thoughts should not be entertained as a principle unless it is an extremely important requirement for the project.

10) Mandatory 10% contingencies and proper price escalation contingencies for each year shall be included in the Tot Cost Estimate as per FR 20.

11) Immediate actions/approvals for variations using Public Finance Circular No. 352 (11) dated 02.09.2001 and Public Finance Circular No. 352 (15) dated 08.10.2001 within 10% of contingency and savings from Bills of Quantity and price escalation.

12) If the Engineer's Estimate exceeds 10% mandatory contingency provision action by the Head of Department for the Revision of Estimates under FR 72 and PF Circular No. 352 (15) dated 08.10.2001.

13) To pay the Contractors within the times specified on or before as given in the Conditions of Contract, which should not be amended in elsewhere or contract data.

14) To carry out monthly reconciliation of the accounts with the Authorising Officer and the Certifying Officer, so that the Authorizing Officer shall know exactly precise amount available for future commitments and for further actions. Please refer Financial Regulations No. 136 (6).

d. From what has been explained above, it should be clear that the Financial Regulations, Public Finance Circulars and Guidelines on Government Tender Procedures, do not in any way impede or slow down the management of contracts. On the contrary, when intelligently interpreted, clearly understood and diligently applied, the Financial Regulations, Public Finance Circular and Guidelines on Government Tender Procedure should give confidence and strengthen the hands of the Heads of the Departments/Public Servants, so that the question of delayed payments to Contractors can be avoided or reduced to a minimum.

e. Therefore, the cause of such delays can be attributed to the attitudes of officials, which sometimes arise due to their lack of knowledge of the procedures well documented in the Financial Regulations, Public Finance circulars and through Guidelines on Government Tender Procedure.

BONDED SLAB POST-TENSIONING SYSTEMS IN BUILDINGS:

Narrated by: R.Muthu Ganesan
Managing Director: VSL INDIA Pvt. Ltd.,

Introduction: Post-Tensioning systems have been used commonly throughout the world in Bridges, Dams, Storage Tank and Buildings etc. They are technically mature and have earned a good reputation commercially.

Post-Tensioned concrete slabs are widely used for the floor systems of office buildings, parking garages, shopping centres and some types of residential buildings. The popularity of this type of construction is due to the economic savings that result from reduced slab thicknesses, longer spans and reduced construction time due to the earlier removal of form work.

Principles of Post-Tensioning: The pre-stress is permanently introduced into the structure after the concrete has attained the required strength. This is achieved by the stressing of suitably arranged, high-strength pre-stressing tendons. Post-tensioning generates favorable stress conditions in the structure, enabling efficient use of building materials while controlling deformations under service conditions.

Advantages of Post Tensioning Systems in Building:

- Achieve Larger Column free space.
- Allows greater span / depth ratio
- Reduced floor height with increased number of floors.
- Best suited for heavier loads.
- Earlier removal of form work, leads to reduce the project time
- Reduces the dead load of the structure gives optimum size of the foundation Less deflection, Less Tensile Stress & Crack width control
- Due to reduction of steel quantity lesser materials to be handled at site.

Fig-1 Yasotha Hospital at, Hyderabad

- It allowed more Architectural freedom and flexibility to care the conduits, a/c vents, etc.

Fig 2 Tendon layout in slab

Application in Building: The Post-tensioning system uses up to five strands in flat and circular shaped ducting and anchorages. The strands are individually stressed and are gripped by wedge action. After stressing, the duct is subsequently filled with a cementitious grout, which is injected under pressure, so that the strands are fully bonded to the surrounding concrete and prevents corrosion of the strand.

Fig 3 Hall mark IT Park at Chennai

The applications are given below:

- Post -Tensioning in slabs
- Post- Tensioning in beams
- Transfer girders
- Transfer Plates
- Post-Tensioning in foundations
- Post-Tensioning in Domes

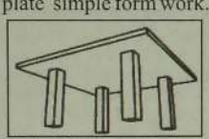
Fig 4 Tendon layout in beams.

Design Application of Bonded Post-Tensioning Systems in Buildings

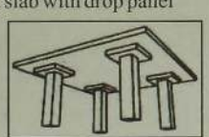
- **Floor System:** In Post-Tensioning different systems will be available but for a given flooring design and detailing of all the post tensioning systems are possible but, however the designers can decide the system, which gives a commercial advantage.

- Following are different type of Post-tensioned Slab:

1) Flat plate simple form work.

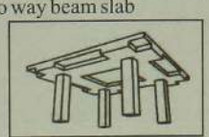


2) Flat slab with drop panel

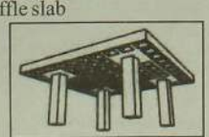


3) One way beam slab

4) Two way beam slab



5) Waffle slab



Design: Most of the designers in the Sub-Continent follow the British standards for designing of a post-tensioned slab. He also refer to standards from Australia and America. In spite the designers feel the British code is more appropriate for Sub-Continent conditions.

Fig 5 Cyber Gateway at Hyderabad

The design is carried in two stages as given below:

A) Limit state of Serviceability
B) Limit state of collapse

A) Limit State of Serviceability: This mainly state about the deflection and vibration of the particular system. But however, the limitations given in the code is not accepted for the post-tensioning system, because of the major influence of level of pre-stress. The Code has given 3 classifications to care the serviceability conditions and is listed below:-

1) Class1 member No tensile stress
2) Class 2 member allowing tensile stress and not visible crack.
3) Class 3 member allowing tensile stress and maximum of 0.2mm crack width.

For Sub-Continental conditions the designers feel Class 3 member gives an economical solution.

a) Preliminary sizing of post-tensioning floors:

Preliminary sizing of post-tensioning floors depends on the loadings and the panel size. But span/depth ratio is no where available in the code, because the depth is mainly governed by the uplift force.

The uplift force is governed by the amount of pre-stress and the eccentricity with respect to center of gravity of particular section, here we have enclosed the figure showing the uplift force for a typical flat slab system.

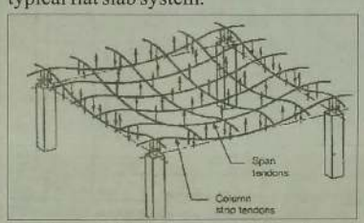


Fig 6. Uplift force due to cable profile

Herewith the table is attached for two way post-tensioned flat slab with Class 3 member design.

Live Load (kN/m2)	Span / Depth Ratio
0~5	50
7.5	45
10	43
12.5	40
15	37
20	35
25	35

b) Concrete:

Minimum grade of concrete recommended for post-tensioning is M35, during the time of stress transfer the strength of concrete should be 25N/mm². To achieve the strength of concrete design mix should be used.

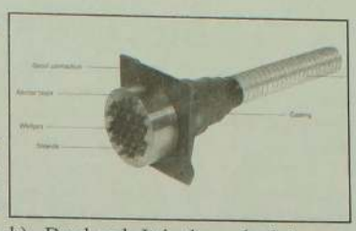
c) Post -Tensioning System:
Post-tensioning system contains

1) Anchorage
2) Galvanized Duct
3) Strands

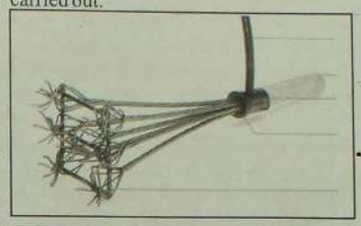
1) Anchorage: Anchorage is a steel block which transfers the force to the concrete, in post tensioning industry there aretwotypesofanchorages available.

a) Live end, the stressing end is called live end. It contains the casting and anchor block with wedges.

Fig 7



b) Dead end: It is the end of the post tensioning cable, were the stressing is not carried out.



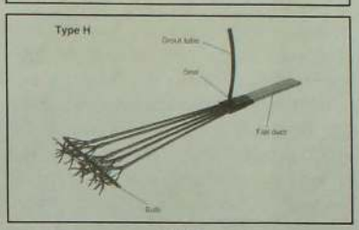
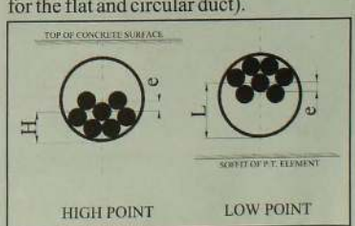


Fig 8

2) Galvanized Sheathing: For applications, corrugated galvanized flat or circular steel ducts are used. Generally, the sheathings are encasing the strands in it, which is grouted after stressing. The sheathing are protecting the strands against corrosion before grouting.

Fig 9 Galvanized Sheathing

3) Strands: Generally for buildings the diameter of 12.7mm shall be used. The ultimate tensile strength of the strand is 183.7 kN. As per code the stressing level shall not exceed 80% of UTS. The designers mostly use 76% of UTS as jacking force for design purpose. To calculate the effective cover for the design the following care is adopted (both for the flat and circular duct).



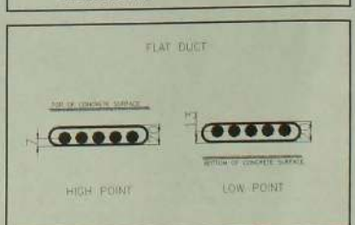


Fig 10 Effective cover (flat and circular)

d) Losses in Post-Tensioning: As soon as the initial stressing is completed, all the strands will undergo losses. However, the designers can predict the total losses and shall be considered into account for the design. As per code the losses are limited to 20% of UTS for post-tensioning. The losses are described in two stages as follows:-

See page 14

VISTA ENGINEERING CELEBRATES 5th ANNIVERSARY

Vista Engineering & Trading (Pvt.) Ltd., celebrated their 5th Anniversary on the 2nd September 2004 having emerged to be a major player in a relatively short period, in providing high quality Zinc Aluminium Roofing solutions for their steadily growing customer base requiring products and services for Commercial and Domestic applications.

The Vista office complex and their factory which is equipped with the latest State-of-the-Art Machinery imported brand new and probably the best available in Sri Lanka, is located at Borelasgamuwa. Their Roofing Machine rolls out Colour bonded and Non-Colour Zinc Aluminium Roofing Sheets in customized lengths using raw materials imported from Australia and Korea and the end product is of very high quality free of dents due to the prime condition of the machinery used. They are also able to deliver orders in the quickest period due to the same reasons. One of the advantages of this type of Roofing is the ability to have a very nominal slope while maintaining an impressive appearance.

Besides Roofing Material, Vista was responsible to popularize Guttering using Zinc Aluminium colour bonded material in custom made shapes at affordable prices. Another innovation is the introduction of Valance Boards using the same material instead of traditionally used Timber which has to be painted and tends to perish over a period of time, while their Valance Boards lasts for many years. Their product portfolio includes Valley Gutters, Barge Board Flashings, Wall Flashings and Ridge Covers avoiding the need of using Cement and provides a wide array of colours. Other products fabricated by Vista include Louvers available in varied designs and colours and Vista Tile Clad which gives an appearance of steps and is becoming more and more popular in Sri Lanka.

Vista also undertakes Projects on turnkey basis or for specific items for Pre-Fabricated/Pre-Engineered Steel Structures to be used as factories, roof structures, canopies etc., which could be erected in a very short period, even within weeks or months.

According to Vista, their vision is to share the steel innovations with their customers and show what the miraculous steel could do and eliminate any fears that they may have in the usage of steel for their requirements in order for them to take advantage and enjoy the enormous benefits. For example, Railway Stations situated in the Coastal Belt and constructed so many years ago have survived the exposure to elements without any regular maintenance which is absolute proof of the durability.

While steel is being used extensively at present for Commercial Structures in all over the world including Sri Lanka, even for home builders this should be the future as in the case of other developed countries as a house can be erected in weeks using steel columns along with Zinc Aluminium Roofing and civil part to be done thereafter in the conventional way.

BONDED SLAB POST TENSIONING SYSTEMS....

Cont... Page 13

1) **Short term losses:**
   a) Friction loss
   b) Wedge draw in
   c) Elastic shortening of concrete
2) **Long term losses:**
   a) Shrinkage of concrete
   b) Relaxation of strand
   c) Creep

Depending on the above losses, the designers can check the design, tensile stress limitation with code, both in the transfer stage and at working stage.

B) Limit State of Collapse:

The moment of resistance of a particular system is calculated based on the formula given in the code.

Mu = Fpb Aps (d-dn)

The moment of resistance of the particular section is compared with the applied moment and also the moment of resistance given post-tensioning is greater than the applied moment. Additional reinforcement shall be provided at appropriate locations to compensate the moment difference.

Bursting Reinforcement:

The bursting stresses are developed in live and dead ends when pre-stressing is being applied. At the particular locations by the provision of additional reinforcement it should be strengthened.

Shear Reinforcement: Normally the flat slab and the flat plate will be subjected to punching shear failure. The nominal shear stress will be calculated and compared with the limiting shear stress in the code. If the value is exceeding the limit reinforcement or thickness of the slab may be revised

Hardware Used in Bonded Slab Post-Tensioning:

- Multi-strand Tendon, Galvanized Duct, Anchorages, Wedges
- Stressing Jack & Pump.
- Flexible Hose, Grouting Pump & Tapes.

Stressing Jacks

Grouting Compressor

Hydraulic Pump

Fig 12 Post tensioning hardware

Construction Sequence

- Place the bottom reinforcement
- Laying of the Tendon to the required profile
- Concreting of the Slab
- Stressing of the Tendon
- Grouting of the Tendon

Sequence of Work

Fig 13

After stressing is completed the recess block shall be filled with mortar

Fig 14

Reference:

BS8110 CODE OF PRACTICE FOR REINFORCED CONCRETE
VSL CONSTRUCTION SYSTEM TECHNICAL REPORT 43

TRADE DEFICIT NARROWED IN JULY 2004

Trade deficit in July, 2004 decreased to US dollars 158 million compared to US dollars 232 million in the previous month.

The exports earnings in July, 2004 crossed the US dollars 500 million level for the third time since December 2000 and stood at US dollars 506 million, when compared with US dollars 493 million in July 2003 and 459 million in June 2004. The import expenditure in July 2004 decreased to US dollars 664 million from US dollars 691 million in June 2004.

The export earnings of textiles and garments, all agricultural products, food and beverages, mineral exports, diamonds, jewellery and plastics increased in July 2004 as compared with June 2004. Industrial exports dominated by textiles and garments grew by 4 percent in July 2004, compared to July 2003 .

The export of textiles and garments increased by 7 per cent in July, despite the stiff competition in the international market in the wake of possible dismantling of Multi Fiber Arrangement in 2005.

Increases in export earnings were seen in food and beverages (29 per cent), chemical products (17 per cent), plastics (16 per cent), jewellery (24 per cent) and vulcanized rubber products (11 per cent). The export earnings declined in mechanical and electrical equipments (15 per cent), leather (32 per cent) and travel goods (40 per cent).

Export earnings in the first seven months in 2004 increased by 8.4 per cent to US dollars 3,112 million as compared with US dollars 2,871 million in the same period in 2003. Industrial exports increased by 9 per cent to US dollars 2,423 million in first seven months of 2004 Compared to the same period of previous year.

The agricultural exports grew by 12 per cent in the first seven months of 2004 as compared with 2 per cent decline during the corresponding period in 2003 reflecting higher performance in all plantation crops.

Import expenditure on sugar, wheat, milk products, fertilizer, textile, building materials, transport equipments and machinery and equipments decreased during the same period.

The import expenditure on petroleum products increased by 4 per cent in July 2004 compared with June 2004.

The expenditure on petroleum products increased by 34 per cent to US dollars 93 million in July 2004 compared to 20 percent increase an year earlier. The higher expenditure on petroleum products which accounted for 49 per cent of overall monthly growth of imports is attributed to soaring oil prices in the international market. The fertilizer imports increased to US dollar 10 million in July 2004 from US dollar 2 million in July 2003. In intermediate goods category, the expenditure on textile imports increased by 10 per cent, indicating the potential for higher exports of apparel in the coming months.

In the first seven months of 2004, expenditure on imports increased by 19 per cent to US dollars 4,396 million from US dollars 3,694 million which posted 8 per cent growth in 2003. The import of investment goods increased by 36 per cent to US dollars 939 million reflecting increases in machinery and equipment, transport equipment and building material.

Source: Central Bank of Sri Lanka

GDP GREW BY 5.2 PER CENT IN THE SECOND QUARTER OF 2004

In the second quarter of 2004, Gross Domestic Product (GDP) grew, in real terms, by 5.2 per cent over the corresponding quarter of the previous year. The growth in the second quarter of 2004 was lower than the growth recorded in the corresponding quarter of the previous year, 5.6 per cent, and in the first quarter of 2004, 6.2 per cent. This deceleration was mostly due to the deceleration in factory industry, particularly for the export market, in this quarter and the negative impact of the drought in certain districts that affected the 2003/2004 Maha season agricultural production as well as hydro power generation. Nevertheless, the growth in the first half of 2004, at 5.7 per cent, just exceeded the first half growth in 2003 at 5.6 per cent. Based on the first half performance, and taking account of the impact of the drought on Yala agricultural production, as well as the increase in fuel prices on all economic sectors in the second half of the year, GDP growth for the year as a whole is projected in the range of 5.0 to 5.5 percent.

The Services sector, which has continuously recorded over 6 per cent growth during the last 8 quarters, continued to record the highest growth (7.1 per cent) and contributed 76 per cent to the overall economic growth in the second quarter of 2004. The Agriculture sector, where growth rates have been most volatile over time, grew by 3.3 per cent and contributed 11 per cent to the overall growth. The industry sector, where growth has been less smooth over time in certain sectors, grew by 2.6 per cent and contributed 13 per cent to the overall economic expansion.

Services Sector:

The transport, storage and communication sector recorded the highest growth of 12.9 per cent in the second quarter compared to 9.7 per cent reported in the corresponding quarter of 2003. This growth was driven by the performance in the telecommunications and port services sub-sectors. The telecommunications sector, which has continued to grow at a high pace, expanded further by 28.5 per cent. Mobile phone usage increased by 49 per cent over the second quarter of 2003. The subscriber level of mobile users is reported to be 1.65 million.

Port services expanded by 12.8 per cent in comparison to 7.2 per cent growth in the corresponding quarter of the previous year. During the reference period, the Colombo Port including South Asia Gateway Terminal (SAGT) handled a significant volume of 521,710 TEUs, lower only to the record 540,694 TEUs handled in the third quarter of 2003. Of the total TEUs handled, domestic throughput volumes grew by 18 per cent, while the transshipment TEUs, which account for a two-third share, rose by 12 per cent during the quarter. Capacity expansion and improved efficiency at the Sri Lanka Ports Authority have also contributed to this healthy growth.

The transport sub-sector, which increased by 5 per cent in the second quarter 2003, expanded further by 5.5 per cent. Reflecting the expansion in the air travel category, total passenger kilometres flown by Sri Lankan Airlines during the quarter increased by 21.8 per cent. The passenger kilometres flown by the three domestic airlines indicated a drop in internal air travel after fulfilling the pent-up domestic demand for travel to the North following the ceasefire. The passenger kilometres operated by Sri Lanka Railways increased by 5 per cent, while that of cluster bus companies declined significantly. However, private omnibus services grew by 3 per cent. With the satisfactory performance in the domestic and external trading sectors, road haulage activities rose by 4.5 per cent. Expansion in the transport sector was also reflected in the increase in petrol and diesel sales volumes, where prices remained subsidised by the government, despite a 34 per cent import price increase in dollar terms alone, for crude oil.

The Banking, Insurance and real estate sector grew by 7.7 per cent compared with an increase of 11 per cent in the corresponding quarter of the previous year. The Banking sector alone grew by 8 per cent, while the insurance, leasing, stockbroking, moneybroking, and other financial and real estate sub-sectors grew by 7.4 per cent.

The leasing and real estate sub-sectors grew at a higher rate compared with the banking sector. The gross interest income of the banking sub-sector recorded a stagnation during the quarter, but non-interest income grew by 27 per cent, reflecting the continuation in the expansion of fee-based financial service activities.

The Services (n.e.s.) category, which includes all unclassified services such as private education, health, hotels and restaurants, advertising, private security, janitorial, personal and all other business services, grew by 4.3 per cent against an increase of 4.5 per cent recorded in the same period of 2003. The growth reflected enhanced activities in the hotel services, health, and computer software development sub sectors. Tourist arrivals fell by 2.8 per cent. Although arrivals from India fell by 22 per cent, arrivals from Europe, America and Australia rose to offset this decline to some extent. Yet, foreign guest nights of all graded hotels recorded a substantial increase of 16.8 per cent, while local guest nights declined by 13.6 per cent.

Industry Sector:

The industry sector grew by 2.6 per cent. The contraction in the Electricity sub-sector and just adequate growth in factory industry were mainly responsible for this comparatively low growth. The Manufacturing sector grew by 3 per cent as against an increase of 7.3 per cent during the corresponding period of the previous year. The factory industry sub-sector, which covers large and medium scale enterprises, grew by 3.1 per cent compared with 8.9 in the second quarter of last year. Of the factory industries, the textiles and wearing apparel sub-sector recorded a growth of 1.8 per cent, while the other export oriented industries such as rubber products, petroleum products, and processed diamonds performed well. Domestic market oriented industries such as liquor, beverages, wood products, building materials, and basic metal products also performed well in response to higher demand.

Construction:

The Construction sector continued to grow during the second quarter as in the first quarter, but at a higher pace, 7 percent. The growth was largely due to the increase in housing construction activities and refurbishment and expansion in the hotels sector catering to the anticipated increase in tourist arrivals. The growth in construction activities was reflected in the production and sale of construction materials and high imports of building materials.

Mining and Quarrying:

Value added in the Mining and Quarrying sector grew by 7.9 per cent, compared with a decline of 2.4 per cent in the corresponding quarter of the previous year. The mining of gems and other minerals, which suffered a setback in May last year due to the floods during that period in key gem mining areas, was able to resume activities to full potential from this year. The quarrying sub-sector continued to expand as the demand for its products grew with enhanced construction activities.

Electricity/Water/Gas:

The Electricity, Water and Gas Sector contracted by 21.1 per cent compared with an increase of 75.5 per cent in the corresponding quarter of the previous year. Electricity generation and the demand for electricity increased by 4.2 per cent and 5.8 per cent, respectively, due to expanding demand from the household and commercial sectors. The demand for electricity was met by increasing thermal power generation by 74 per cent due to the drop in hydropower generation by 41 per cent over the same period of year 2003. Consequently, the value added in the electricity sub-sector decreased substantially by 24 per cent as a result of higher usage of thermal power, including emergency hired thermal power under dry weather conditions, which had higher generation costs. During the quarter, 66 per cent of the total electricity was generated thermally in comparison to 39.5 per cent in the same period of 2003. Meanwhile, water distribution recorded a growth of 3.9 percent compared with 4.3 percent growth in the corresponding quarter of the previous year.

Source: Central Bank of Sri Lanka

NEW INITIATIVES TO IMPROVE CONSTRUCTION INDUSTRY EFFICIENCY

If the recent initiatives are an indication to go by, it seems that the Government is beginning to understand the importance of the Sri Lankan Construction Industry and ready to take action intended to improve its efficiency.

In June the **'Think Tank on Construction Industry'** was appointed by the Minister for Housing & Construction Industry, Eastern Province Education and Irrigation Development, Hon. Mrs. Ferial Ashraff to expedite the Construction Industry Policy and the draft Construction Industry Bill and also to advise the government on a framework to develop the construction industry.

This was followed by the launch of the **'Construction Cluster'** by Dr. P. B. Jayasundera, Secretary to the Treasury in October, as part of the **National Council for Economic Development** (NCED). NCED acts as the umbrella for more than twenty 'clusters' formed for individual sectors and industries, coordinating their proposals into a National policy framework.

Thus, the role of the Construction Cluster is to consult the industry and to identify the key issues that affect the industry, establish priorities, allocate resources and initiate action to address these issues. This means the responsibility is now with the construction industry itself to formulate its own development strategy.

Some of the issues that keep the Sri Lankan construction industry from taking -off have been discussed over and over and solutions proposed with little or no remedial action, while some others may have altogether escaped the attention of the industry stakeholders due to the poor shape that the industry has been in recent times.

Now the industry leaders, experts and all stakeholders have a fresh opportunity to set aside their differences and individual agenda and to work together.

At a time the Sri Lankan Construction Industry is feeling the pressure from globalisation, shortage of skilled labour, shortage of basic construction materials, individual efficiency of an enterprise may not be sufficient to ensure stability and efficacy, unless the collective efficiency of the industry is enhanced.

In this regard you are invited to send your views.

Please send a brief outline indicating:-

- The issue
- Proposed solution
- Benefits arising from the solution to the construction industry
- Benefits arising from the solution to the National economy
- Resources required
- Who should take action?

Please send your submissions to:-

Mrs. S. M. Karunaratne,
Co-Chairman,
Construction Cluster Ministry for Housing & Construction Industry,
Eastern Province Education and Irrigation Development,
Sethsiripaya,
Battaramulla,
Rajagiriya.

Availability of Cement

	First Quarter		Second Quarter		Third Quarter		Fourth Quarter		Annual	
Year	Index	Point to point % change	Index	Point to point % change	Index	Point to point % change	Index	Point to point % change	Index	Point to point % change
1998	MT'000' 708.5=100		MT. 587.6=100		MT. 823.4=100		MT. 719.0=100		MT. 2,838.9=100	
1999	106.2	6.2	146.4	46.4	111.2	11.2	107.6	7.6	108.3	8.3
2000	113.6	7.0	118.9	-18.7	115.4	3.8	106.6	-0.9	113.5	4.7
2001	120.2	5.8	116.4	-2.2	98.3	-14.8	98.9	-7.3	107.7	-5.1
2002	86.7	-27.9	108.8	-6.5	90.5	-8.0	118.3	19.7	100.4	-6.8
2003	97.7	12.8	110.3	1.4	89.6	-1.0	39.1	-67.0	83.1	-17.2
2004	109.8	12.3	114.8	4.1						

Data Source: Department of Census and Statistics

Generation of Electricity

	First Quarter		Second Quarter		Third Quarter		Fourth Quarter		Annual	
Year	Index	Point to point % change	Index	Point to point % change	Index	Point to point % change	Index	Point to point % change	Index	Point to point % change
1998	Gwh. 1,339=100		Gwh. 1,356=100		Gwh. 1,433=100		Gwh. 1,431=100		Gwh. 5,561=100	
1999	106.4	6.4	108.0	8.0	110.2	10.2	110.7	10.7	108.9	8.9
2000	117.9	10.8	109.8	1.6	117.4	6.5	121.9	10.1	116.8	7.2
2001	125.2	6.2	122.6	11.7	105.8	-9.8	115.0	-5.7	116.9	0.1
2002	116.7	-6.8	126.4	3.1	127.4	20.4	127.4	10.8	124.6	6.5
2003	136.9	17.3	132.7	5.0	135.9	6.7	138.3	8.5	136.0	9.1
2004	147.6	7.8	143.2	7.9						

Data Source: Ceylon Electricity Board

Number of Tourist Arrivals

	First Quarter		Second Quarter		Third Quarter		Fourth Quarter		Annual	
Year	Index	Point to point % change	Index	Point to point % change	Index	Point to point % change	Index	Point to point % change	Index	Point to point % change
	Number 104,763=100		Number 68,382=100		Number 92,628=100		Number 115,290=100		Number 381,063=100	
1999	121.2	21.2	125.5	25.5	114.7	14.7	101.8	1.8	114.5	14.5
2000	120.9	-0.2	115.3	-8.1	106.6	-7.1	83.4	-18.1	105.1	-8.3
2001	128.9	6.6	134.8	16.8	60.5	-43.2	46.4	-44.3	88.4	-15.9
2002	88.8	-31.1	117.1	-13.1	112.5	85.9	100.5	116.3	103.2	16.7
2003	115.1	29.5	139.8	19.4	131.6	17.0	141.0	40.4	131.4	27.3
2004	126.0	9.5	135.9	-2.8						

Data Source: Sri Lanka Tourist Board.

DOES EARLY MARKET ENTRY ALLOW UNFAIR GAIN TO IMITATIONS?

The benefits of innovation and early market entry have been grossly oversold. So much has been written about the benefits of innovation, and so little about imitation, that it has become a one-sided argument.

On the basis of sheer proportions, someone might conclude that imitating the innovations of others is an ineffectual, infrequent, and economically unimportant exercise. That conclusion would be dead wrong.

The evidence in favor of imitation is often hidden from public view. Whereas firms/persons are often eager to trumpet the occasions when they were "first" to discover something, they are often less willing to publicize their skills at imitation can be found in nearly every nook and cranny of the world economy. Imitation is not a fad, nor is it restricted to a few industries.

Some firms are caught off-guard by the introduction of new and innovative products. They fail to recognize the potential of anew product introduced by a small, entrepreneurial company until demand for that product explodes.

Even then, they might view its initial success as fad that will quickly dissipate. Often they are right.

But at some point the incumbent is forced to react to a trend that it did not see coming and that has now passed it by. Typically, the incumbent is forced to catch up, and catch up quickly. It copies because it has no other choice.

In other cases, firms consciously prefer to wait patiently on the sidelines until the fog clears. They seek benefits from moving slowly. Typically, watchful waiting is game played by industry leaders with strong competitive skills in distribution and advertising, and the funds to fight and win.

Imitation runs the gamut from surreptitious and illegal duplicates of popular products, to truly innovative new products that are merely inspired by pioneering brand.

Counterfeits are copies that carry the same brand name or trademark as the original. They are an attempt to rob the innovator of due profits.

Usually low-quality and shoddy, counterfeits are the least creative attempt at imitation. What sets them apart from other forms of imitative products is their illegality. Clones are often legal products in their own right. The absence or expiration of patents, copyrights, and trademarks makes many of them legal. Typically, clones sell the same basic products as the innovator but at a lower price and without the prestigious brand name.

Creative adaptations are the most innovative kind of copy. They take an existing product and either improve upon it or adapt it to a new arena of competition. Firms that enter a growing market after an innovator sometimes have access to newer technology. That allows imitators to "leapfrog" the innovator with a superior product.

Creative imitation often takes the form of recognizing the potential of an innovation developed in one industry for use in another. Imitations not restricted to products and services. It is also possible to copy procedures or strategies.

Copycat modes: Procedures are often culturally bound. Consequently, imitations of them often must be tailored to fit a particular society. That means such imitations must entail a healthy degree of innovation. Imitators and later entrants succeed using one or a combination of three strategies:

Offer lower prices than the pioneer. Typically there are two ways to pursue this strategy: by selling an exact duplicate of the pioneer's product at a reduced price, or selling a trimmed-down, bare-bones version at a much lower price. Both strategies attempt to expand the market into the mainstream, attracting consumers who would otherwise be unwilling to pay the high prices demanded by the pioneer.

Sell a superior product. Some imitators succeed by being "second but better." Their strategy is to improve upon the pioneer's design and hope that consumers will prefer a superior design to early entry.

Two cases in which later entrants leap-frogged pioneers stuck on an inferior standard are word processors and spreadsheets. Later entrants were able to surpass pioneers because they did not enter until the memory capacity of personal computers had grown large enough to support full-featured programs.

Use their market power to overwhelm the weaker pioneer. In theory, pioneers erect impenetrable barriers to entry that keep copycats at bay. In practice, however, those barriers are weak to nonexistent when matched against the sheer market power-marketing clout, existing distribution channels, financial resources held by industry giants whose existing products are challenged by the pioneers' innovative entry.

It is clearly cheaper to imitate than to innovate. The imitator avoids many of the costs incurred by the innovator. An innovator frequently can spend much less time and money on research than the innovator because the product's existence and characteristics provide the imitator with a great deal of information that the innovator had to obtain through its own research.

The imitator's advantage is greatest in those product categories where advertising and distribution are most important. Small pioneers who rush to market with innovative entries face the worst odds of all in such circumstances.

Imitation is not always successful. Many times the later entrant is unable to unseat the pioneer.

One way to improve the chances of successful later entry is to treat unlikely threats as likely. Incumbents typically fail to see the importance of emerging innovations. In some instances, that is because the pioneer's idea is not new at all. There is often a long history of previous entries that met with failure. That sets up the expectation of continued failure as new entrants try their hand at the market.

Successful followers should enter quickly after the market has formed, not necessarily after the first pioneer has entered. The imitator's reaction should be to market potential, not to the pioneer's first move.

The most successful later entrants seem to favor patience over a panicked quick response.

Some imitators get too close for comfort. They imitate the pioneer's product too closely and get caught. Typically, it is an industry giant who enters a market pioneered by a small entrepreneurial upstart with a copy that is virtually identical to the pioneer's product. The small pioneer then plays the role of a martyr being attacked by a large bully. The courts and bad press then force the imitator to withdraw.

Some imitators compound their problems by combining identical copies with brutish competitive behaviour. That reinforces the pioneer's position as a martyr. The result can be devastating for the imitator in terms of market position and negative publicity.

The conventional wisdom regarding order-of-entry effects is oversold but not incorrect. There are many instances where pioneering pays-off in the premier market position. But there are also many other cases where first entrants came in last and last entrants came in first.

That is not a new argument. Nearly two thousand years ago, the Bible challenged the conventional wisdom regarding order effects in a larger context. Matthew 19:30 summed it up best: " ... many who are first will be last, and many who are last will be first." Now that is sage advice for later entrants.

L&T-CASE EQUIPMENT PRIVATE LIMITED LAUNCHES LOADER BACKHOE MODEL 851 IN SRI LANKA

Gold Digger To Your Prosperity

L&T-CASE EQUIPMENT PRIVATE LTD. Mumbai, India has introduced a new state-of-the-art loader backhoe-L&T-CASE Model 851 to the Sri Lankan market after a successful launch in India. Engineered for higher performance, productivity and reliability, L&T-CASE 851 is the result of intense product application, testing and reliability studies done within India using globally proven technology from CNH Global N.V.

L&T-CASE 851 incorporates the load sensing, flow compensation hydraulic system for simultaneous operations, a 96 H.P. Diesel engine, a rugged transmission and rear axle and the patented uni-system stabilizer play adjustment.

Increased backhoe breakout forces (5631 Kg) and lift capacity (2100Kg), increased loader implement lift performance (3425 Kg), a new high comfort-total vision cab, increased front axle oscillation (22 Degrees) for enhanced off-highway capability are some of the benefits and features available to the users on L&T-CASE 851 loader backhoe.

L&T-CASE model 851 loader backhoe is manufactured by L&T-CASE Equipment Private Ltd, a joint venture of Larsen & Toubro Limited India and CASE CORPORATION U.S.A. (a CNH Global N.V. Company) - at its manufacturing plant located at Pithampur near Indore (India). The plant is equipped with the latest machinery, tooling and painting facility to manufacture and achieve high standards of product quality and reliability. The plant is certified ISO 9001 for design, manufacture and supply. The L&T-CASE model 851 loader backhoe is manufactured utilizing world renowned components such as Perkins Engine, Turner Powertrain: UK Transmission, New Holland Tractors: Belgium Axles, Cassappa: Italy, Rexroth: France and Danfoss: Denmark hydraulic components.

Proficiency in operation like trenching, digging, spreading, grabbing, grading, dozing, backfilling, rock breaking etc., with various attachments has ensured that 851 is the "One-Up" amongst competitors. The L&T-CASE model 851 backhoe loader is already in operation in Sri Lanka with K. D. A. Weerasinghe & Co., (Pvt.) Ltd., ELS Construction (Pvt.)Ltd., Consulting Engineers & Contractors (Pvt.) Ltd., and Hovael Construction (Pvt.) Ltd.

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