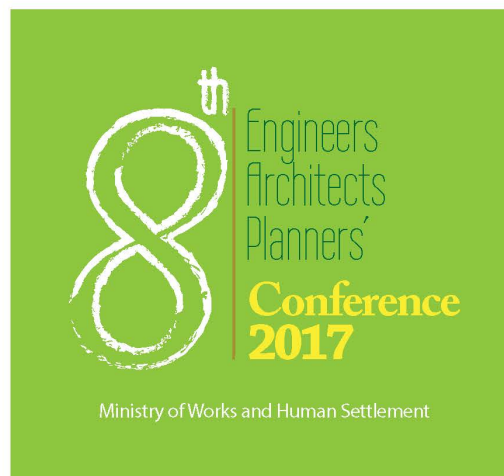




Theme

ENHANCING
SUSTAINABILITY *of*
INFRASTRUCTURES



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A. BACKGROUND

The Ministry of Works & Human Settlement (MoWHS) is responsible for development of human settlement planning, construction of roads, bridges, national infrastructure and provision of engineering support to Dzongkhags and Thromdes. The establishment of the Ministry dates back to the 1960's and since then has evolved to cope with the changing and increasing demand for infrastructure facilities and services. With the vision of *“a leading organization in the region in infrastructure development for human settlement and transportation”*, it has made significant progress in providing basic infrastructure facilities in remotest part of the country as well as the urban centers.

The last few decades in particular, under the leadership of farsighted selfless Monarchs has witnessed exponential development of infrastructure across the length and breath of the country, amidst the challenges posed by the geographical terrain, high cost and increasing disasters as an impact of climate change. The audience received by the professionals from His Majesty the King during the closing of the 7th National Engineers & Architects Conference in October 2014, has highly motivated and inspired the professionals. His Majesty reminded that *“engineers, architects and planners have enormous responsibility of successfully implementing the 11FYP programmes and activities in the construction sector (more than 20% of the total capital budget), and that professional groups of engineers, architects and planners cannot afford to fail, the implications of which would be colossal for Bhutan and its future”*. This has inspired the professionals who over the years demonstrated high level of commitment to work with professionalism and ethical conduct.

It is against this backdrop, this 8th Engineers, Architects and Planners Conference with the theme *“Enhancing Sustainability of Infrastructure”* was organized. Huge investment has been made in the development of infrastructure since the first five-year plan that began in the early 1960s and that investment in infrastructure will continue. The need to protect such investment has necessitated to come up with measures and hence this conference with the carefully chosen theme.

B. THE CONFERENCE

The 8th Engineers, Architects and Planners Conference was held from 5-7 June 2017, coinciding with the 11th day of holy month of *Saga Dawa*. It was a success. The conference facilitated gathering of professionals across the Central Agencies, Dzongkhags and Thromdes, promoted active participation and came up with implementable recommendations to professionalize systems. It was encouraging to see young professionals volunteering to make presentations during the conference. It assures commitment of the professionals who are mandated to create infrastructure, maintain society's built environment and consequently, its economic and social engines, critical for achieving Gross National Happiness.

The objective of the conference was:

- 1) Promote shared understanding towards creating sustainable human settlement and infrastructure development through professionalization and system improvement;
- 2) Derive implementable short term recommendations for 12FYP and also to serve as input to Policy & Legal discourse;

The gracious presence of Hon'ble Lyonchoen, Speaker, Ministers, Members of the Parliament, Chairperson of ACC, RCSC Commissioner, Head of Development Partners and senior officials from the Government and various agencies at the closing of the main day conference only testified the importance attached to this group of professionals and their contribution to nation building. It was such an inspiration and motivation for the professionals.

The hard work put in by the participants during the two days pre-conference, deliberating on key topics of concern, issues and ideas has led to twenty-one resolutions. Given the urgency and the importance of the Resolutions to professionalize the construction sector and enhance quality sustainability of the infrastructure, Hon'ble PM and dignitaries unanimously acknowledge the resolutions and instructed for submission to the Government. Accordingly, the Ministry is pleased to submit herewith the Resolutions to Government for approval.

C. THE RESOLUTIONS

The conference had three sub themes; a) Professionalizing Infrastructure, Systems & Specialization, b) Human Settlement Planning & Management c) Road Maintenance Strategies. Under each sub-theme various presentations were made and around twenty-one Resolutions were proposed. Some Resolutions pertain to the Ministry, while rest are high-level requiring approvals of the Government for implementation. Below are the Resolutions submitted for Government's approval:

Resolution 1:

Rectify and improve the existing procurement system. The proposed areas of improvement are listed below:

- a) *Milestone Contract*, which pre-identifies physical and financial progress to be achieved, should be introduced/ incorporated in the contract document and enforced strictly. Contracts with contractors, who repeatedly fail to achieve agreed milestones, should be terminated before the value of completed work exceeds 50% of the contract price to ensure that the remaining work attracts competition. Contract document is currently silent on the timing of termination of contracts.
- b) *Mobilization Advance* should be decreased to 5% of the contract price (currently 10%), payable in 2 installments i.e. 2.5% per occasion. Payment of the 2nd installment of mobilization advance should be released only after ensuring proper utilization of

the 1st installment. Recovery of mobilization advance should begin after achievement of 10% of physical work progress and it should be fully liquidated when the contractor has completed 80% of the works.

- c) *Pre-Bid Meeting* should be conducted mandatorily for Large and Medium contractors to address concerns of bidders, clarify ambiguities in bid documents, and to mutually agree on the project duration and others.
- d) *E-Tool* should be uniformly applied across all agencies, including corporations and donor-assisted projects. This is because assessing the capacity of a contractor and ensuring prevalence of requisite experience and capability for successfully completing a project applies to all projects, irrespective of whether the project is RGoB financed or donor funded.

Specifically, under E-Tool, following amendments are proposed:

- (i) Technical score for *Bid Capacity* should be raised from existing 10 to 30 points. Bidders who fail to meet the *Bid Capacity* criteria should be disqualified from further evaluation;
 - (ii) Cut-off technical score should be raised from existing 65 to 70 points
 - (iii) Contractors should be required to own 70% of critical equipment and 50% of general machineries required for a particular project. Experience reveals that contractors who propose to hire equipment from others have difficulty in completing projects on time;
 - (iv) *Credit line Facility* should not be considered in technical evaluation as it does not serve the intended purpose;
 - (v) *Number of Works in Hand* for Large contractors shall be limited to a maximum of 3 (currently 5 nos.) without upper financial ceiling. Alternatively bid capacity may warrant otherwise but not beyond 5 in any case;
 - (vi) *Number of Works in Hand* for Medium and Small contractors should be limited to a maximum of two and one respectively. Upper financial ceilings for Medium contractor shall be up to 20 million and for Small contractor up to Nu.5 million;
 - (vii) *Specific Work Experience* of the contractor/firm should be assessed based on the experience of individual employees of the contractor/firm who have been employed by the contractor/firm. The employment of such HR should be at least for a minimum period of one year;
- e) *Defects Liability Period* should be increased from existing one (1) year to a minimum of three (3) years as stipulated in the Economic Development Policy (2016) to compel contractors to assure quality of construction work upfront.

Resolution 2: Specialization

- a) Encourage and promote specialization by inserting a clause in the contract document “*Major contract works shall have the prime contractor engaging specialized sub-contractors and their agreements shall form part of the bidding documents*”. Standardization of certain elements supported by specialized training opportunities and awareness campaign must be encouraged.
- b) *The Council of Engineers & Architects* will be instituted within the financial year 2017-2018 with the setting up of secretariat in the Ministry of Works and Human Settlement. The prime responsibility of the Council will be to ensure professionalism and maintain the Engineering Ethics and Code of Conduct. The Council will be the focal agency for all Engineers and Architects in Public and Private sector.
- c) *The Committee for Certification of Structural Engineers*, which is currently established as per the executive order of the Ministry, in the absence of the Engineering Council, must begin its certification process within the next 2-3 months. This will enable the structural design to be carried out by certified structural engineers and reduce the scrutiny process by *Thromde*. It will not only ensure safety, improve quality construction and enhance accountability, but also importantly fast track building design and drawing approvals and improve the existing TAT.
- d) Specialized building works must be carried out by certified professionals for better quality, accountability and job creation. Building works executed without deployment of certified professionals shall not be issued Occupancy Certificates.

Resolution 3:

Bhutan Standard Bureau, Bhutan Electricity Authority and Bhutan Power Corporation should urgently initiate drafting of *Standard for Internal Electric House Wiring*. This is because house wiring is often suspected as the cause of fire accidents in many cases. In the absence of a lack of Standard for Internal House Wiring, building owners have liberty to use sub-standard electrical wires and fittings during construction, susceptible to fire hazards.

Resolution 4: Sustainable Human Settlement

- a) The respective local governments should implement the *Incentives for Management of Protected Zones within Thromde Boundary*, approved by *Lhengye Zhungtshog* on March 2016. The agencies responsible for providing subsidies and incentives such as MoAF, BPC etc must fully cooperate and support the Local Government, as per the procedure prescribed in the *Lhengye Zhungtshog Directives*. However, while implementing the incentives, agencies that have concern on revenue reduction and other issues may apprise the Ministry and Government.

- b) Expedite *Enactment of the Spatial Planning Bill*. DCR (Development Control Regulations) is an important tool to ensure implementation of the approved plan in a convivial manner that is in keeping with the overall policy and strategies. However, it does not have the legal backup which impacts strict compliance leading to social, cultural and safety related implications. Therefore it is of utmost importance to have the Spatial Planning Act in place.
- c) The Dzongkhag Human Settlement Sector (DzHS) recently approved by RCSC through OD recommendation should be implemented on a priority basis. The sector must be mandated to strictly carry out monitoring of non-compliance to DCR.

Resolution 5: Thromde reform for Sustainability

- a) While complete HR autonomy may not be possible at this juncture, Government to support Thromdes in achieving some flexibility in recruitment and management of critical positions and support/operation levels. This will equip Thromdes in fulfilling their mandate of providing effective and efficient service delivery to public.
- b) Municipal Finance & Management reform initiated within the Thromdes, which is based on Accrual Accounting System, must be *sustained even after project completion*. This is because it is an instrumental strategy and a tool to help Thromde achieve financial sustainability. The system promotes transparency/accountability within the management and garner effective revenue collection through updated taxpayer database and valuation of assets. It also enables improved planning and budgeting through revenue reporting and budget forecasting for expenditure. To this effect, the Ministry of Finance is requested to limit transfer of finance personnel within the Thromdes, so that finance personal trained on Accrual Accounting System in the Thromdes are not transferred to Ministries and other agencies, who uses Cash Based Accounting. This is to ensure sustainability of the system and avoid cost inefficiencies.

D. GOVERNMENT APPROVAL AND WAY FORWARD

The proposed Resolutions have taken into account the practical difficulties encountered by the sector. The Resolutions will have far reaching impact towards professionalizing the way we conduct business and achieve the goal of improving quality and sustaining the built infrastructure. The Ministry is committed in pursuing strict implementation of the Resolutions and is gratified that Hon'ble Lyonchoen and dignitaries who attended the final day of the Conference sees value in those Resolutions and expressed appreciation of the conference theme "*Enhancing Sustainability of Infrastructure*" and its timeliness. As instructed by Hon'ble Lyonchoen, the Resolutions requiring national level intervention is submitted herewith for kind approval of the Government. The Ministry solicits in receiving the instructions at the earliest.