



National Institute of Technology

Rourkela – 769 008(Orissa)

Minutes of the 12th Meeting of the Building and Works Committee, National Institute of Technology, Rourkela held on 11th October, 2010 at 9.30 A.M. in the Board Room at NIT, Rourkela.

Members Present:

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| 1. | Prof. Sunil Kumar Sarangi,
N.I.T., Rourkela. | ... | Director and Chairman |
| 2. | Shri Ajaya Kr. Nayak, DGM
Civil Engineering, Town Engineering Department,
SAIL, RSP, Rourkela. | ... | Member |
| 3. | Shri Vinod Kr Shrivastava, DGM
Refrigeration & Air Conditioning, RSP.,
SAIL, RSP, Rourkela | ... | Member |
| 4. | Prof. J.K. Pani,
Dean(PD), Civil Engg., NIT., Rourkela. | ... | Member |
| 5. | Prof. K.C. Biswal, CH | ... | Registrar & Secretary I/C. |

Invitees:

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| 6. | Prof. Prof. S. Rauta,
PIC, Electrical Maint., NIT., Rourkela. | ... | Invitee |
| 7. | Prof. Sarat Kr. Das
Civil Engineering, NIT Rourkela | ... | Invitee |
| 8. | Prof. K. C. Biswal,
Civil Engineering, NIT., Rourkela | ... | Invitee |
| 9. | Prof. Chitti Babu
Electrical Engg., NIT Rourkela. | ... | Invitee |
| 10. | Prof. A.K. Panda,
VP, Civil Engineering, NIT, Rourkela | ... | Invitee |
| 11. | Prof. A. K. Sahoo
VP, Civil Engineering Dept., NIT Rourkela | ... | Invitee |
| 12. | Prof. Y.K. Sahu,
VP, Electrical Engg., NIT Rourkela. | ... | Invitee |
| 13. | Mr. S. P. Mohaptra,
AEE (Civil), Estate Office, NIT Rourkela. | ... | Invitee |

Members Absent:

- | | | | |
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| 14. | Shri A. K. Singh,
Director, NITs, MHRD, New Delhi. | ... | Member |
| 15. | Prof. G.C. Mitra,
Retired. Work Secretary, Member, Govt. of Orissa. | ... | Member |
| 16. | Er. S.K. Upadhyay, Registrar | ... | Member |

The leave of absence was approved for all members absent.

BWC: 12(2010) -01: Welcome to the members by the Chairman.

Prof. S.K. Sarangi, Director, NIT., Rourkela and Chairman, Building & Works Committee welcomed all the members.

BWC: 12 (2010)- 02: Confirmation of the minutes of the 11th Meeting of the BWC held on 09.04.2010.

The minutes of the 11th Meeting were sent to the members vide letter No.NITR/2010/BWC-11/129, Dt. 22.04.2010. No comments were received from the members. This was further discussed in the meeting and confirmed by the BWC.

BWC: 12(2010)-03: To report on the action taken on the decisions made in the 11th Meeting of BWC held on 09.04.2010 and to discuss matters arising out of the minutes:

The report on the action taken on the decisions made in the 11th Meeting of BWC held on 09.04.2010 is presented for BWC's consideration.

The Board vide resolution No. BOG-23(2010)-07 dt.09.07.2010 approved Minutes of 11th BWC meeting held on 09.04.2010.

The Board advised the deviation statement approved by BWC vide resolution No.BWC-11(2010)-09 dt. 09.04.2010 for major projects to be put up to the Board in the next meeting. Revised deviation statement was discussed in the BWC meeting on 11.10.2010 and BWC approved the proposal is given in the **Annexure-A4**.

The Board also advised to explore the possibility of negotiating with architects towards reduction of Architect fees particularly on the new housing complex as this constitutes a number of repetitive blocks of same type design (BWC-11(2010)-06). M/s Arch-en-design have agreed to reduce their fees from 1.98% to 1.89% of the project cost for faculty residences.

The Board advised that in future, new proposals for construction will be examined by the BWC and the Board based on the actual requirement of plinth area for each building or activity keeping the existing facilities in view. A rough plinth areas and rate estimate as per CPWD or state norms, will have to be submitted, duly examined by the BWC before such a project can be sanctioned by the Board.

The report on the action taken on the decisions made in the 11th Meeting held on 09.04.2010 is given in the Annexure.

(Annexure-A1, Page No.7 - 8)

BWC: 12(2010) - 04: Review of ongoing Civil Projects:

A copy on the progress report on ongoing Civil Projects was put up for consideration of the Committee.

BWC reviewed the ongoing Civil Projects. The report is given in the Annexure. BWC expressed concern at the slow progress of many projects, but accepted the underlying reasons of labour shortage to be genuine. All concerned were advised to make conscious effort to accelerate pace of work, commensurate with the externally imposed situations.

(Annexure-A2, Page No. 9 - 13)

BWC: 12(2010) -05: Review of ongoing Electrical Projects:

A report on the progress of ongoing Electrical Projects was put up for perusal of the Committee.

BWC reviewed the ongoing Electrical Projects. The report is given in the Annexure. BWC expressed concern at the slow progress of many projects, but accepted the underlying reasons of labour shortage to be genuine. All concerned were advised to make conscious effort to accelerate pace of work, commensurate with the externally imposed situations.

Annexure-A3, Page No. 14 – 16)

BWC: 12(2010)-06: Hotline Connection from Chhend to NIT Rourkela.

The Institute receives HT power from WESCO and distributes to its academic buildings, hostels and residential quarters. The present connected load is a little over 1 MVA which may reach 5 MVA when the planned expansion is implemented. The present load shedding and other power cut pattern is playing havoc with our equipment and research programmes. Unscheduled power cuts, black outs and brown outs are :-

- a) Destroying electronic equipment.
- b) Hampering research programmes
- c) Making class room teaching difficult in the absence of projection equipment.
- d) Hampering students evening preparation, particularly at the time of examinations.

In view of the above, we requested WESCO for a priority electricity connection at 33 KV. Such connections, popularly known as “Hot Lines” are available to Institutions of Higher Learning in many other states, including many NITs.

On advice of WESCO, a survey of the path of the new line has been carried out and the cost has been estimated. The total distance is about 10 km and total cost over Rs.4 crore for a 33 KV (2 x 3 + 1 wire) transmission line on mini towers. In addition, the Institute is already setting up its own 33 KV internal main ring with 33 KV to 400 V substations.

It was proposed to set up an appropriate 132 KV – 33 KV substations at Chhend, Rourkela or permit WESCO to set up and operate such a facility exclusively for NIT. The Institute has already approached OPTCL and WESCO and has received indication of favorable action. The cost of the project is expected to be around Rs.5.00 crores.

BWC approved the proposal for consideration of the Board.

BWC: 12(2010)- 07: Proposal for New Constructions:

1) 1500 Seater Auditorium.

At present the student strength is about 3500 which is likely to increase to 6000 in 10 years. The faculty strength is likely to increase up to 500 and that of non-faculty strength 550 in addition to other scheme personnel. The capacity of the existing Institute auditorium is 700 and it is inadequate for convocation and student functions. A 1500 seater Auditorium may be constructed for conducting convocation and students functions . Approximate cost will be Rs.15.00 (fifteen crores).

BWC approved the proposal.

2) Proposal for Construction of 3rd Floor (in G + 3 system) in the Extension portion of C.V. Raman Hall of residence.

The number of rooms in the existing C.V. Raman Hall of residence is 194. After extension, the no. of rooms will be increased by 400. In view of the increase in students strength, it is proposed to construct another floor in the extension portion for which foundation has already been laid. Additional financial implication will be Rs.500.00 (five hundred lakhs) approximately.

BWC approved the proposal.

3) Proposal for extension of Mining, Ceramic and Computer Science Buildings.

The present floor space for the Departments of Mining, Ceramic and Computer Sc. Engineering are insufficient for holding Classes, Laboratory and Seminar etc. It is proposed to extend and renovate the buildings of the above departments as per requirement.

<i>Sl. No.</i>	<i>Name of the Department</i>	<i>Existing Floor Area (M²)</i>	<i>Proposed Additional Floor Area (M²)</i>	<i>Estimated Cost (Lakh)</i>
1.	Mining Engineering	1726.0	1902.0	400
2.	Ceramic Engg.	1755.0	2523.0	500
3.	Computer Sc. Engg. (including present Electronics Dept.)	4066.0	3345.0	680

BWC approved the proposal.

4) Proposal for construction of additional water supply capacity.

Due to inadequate water supply from Jhirpani (Koel River), students, staff and faculty members of NIT Rourkela suffer for water. Many times, it is required to make temporary arrangement through water tankers. The student, faculty and staff strength are likely to increase up to 8000 by the year 2014-15. Keeping this in mind, it was proposed to store water atleast for 24 hours for emergency requirement. Such a system would require additional ground sumps (Total capacity should be about 16 lakh gallons) with chlorination facility, electrical pumping system to feed the hostels and quarters. A rough estimate puts the cost around Rs.4.00 (four crores).

BWC approved the proposal.

5) Renovation of Hill Top Water Tank and Construction of Boundary wall.

The Hill Top Water Tank was constructed since 1961 and it has become very old. It requires renovation to check seepage, security enclosure and road access. It is proposed to renovate the Hill Top Water Tank with boundary wall around the Tank and a walking path. The estimated cost of renovation including the boundary wall construction will be Rs.25.00 (twenty five lakhs) approximately.

BWC approved the proposal.

BWC: 12(2010)-08: Deviation Statement for all the Projects.

The Board vide resolution No. BOG-23(2010)-07 dt.09.07.2010 approved Minutes of 11th BWC meeting held on 09.04.2010 with an advise to put a detailed deviation statement on the major construction projects Considering the changes in foundation design, addition of basement floor, stone cladding and other minor aspects of construction. The revised deviation statement for all the projects is given in the annexure.

BWC reviewed and approved the proposal.

(Annexure-A4, Page No. 17 - 40)

BWC: 12(2010)-09: Any other item with the permission of the Chair.

1) Analysis of rate for rate contract.

The Institute normally follows DSR rates for estimating its construction projects. Often the rates are far different, both positively and negatively, from the prevailing rates of construction at Rourkela. To address to this problem, the Institute has been operating its own “NITR Schedule of Rates” for two years.

The draft schedule of rates is under preparation and will be finalized shortly. The BWC authorized the Chairman to approve it when ready, on behalf of the Committee.

BWC approved the proposal.

2) Dismantling of collapsible Decorative frame structure for Homi Bhava Hall of Residence.

The Homi Bhabha Hall contained a large decorative beam near the main entrance. The structure collapsed during storm on 24.08.2010. The cost of the structure was 1.7 lakhs. There was no consequential damage of significance. A Committee under the chairmanship of Dean(P & D) was appointed to examine the possible faults in design and construction.

BWC examined the report of the Committee (given in Annexure) in details. Two types of faculties were identified :-

- a) some faculty assumptions as wind load at design stage and
- b) to some degree wrong practice of reinforcement overlap, exceeding 50% at one place. Other aspects such as construction material and practices were found to be adequate.

The committee decided to claim upto Rs.8.7lakh from the architect M/s Bose Brothers. M/s Bose Brothers are working on the extension of the Hall for additional 180 rooms, which on a pro-rate basis should cost approximately Rs.5.4 crore with an architect fee [@25%] Rs.13.5 lakh. M/s Bose Brothers were contacted over phone and they agreed to provide the architectural services for free including the intellectual property involved. The committee agreed to check the structural calculations and electrical layout using the Institutes own expertise.

It was also decided to reconstruct the beam with a different design at Institute cost. The structural design will be verified by Prof. A.K. Sahoo and Prof Sisir Sahoo using recent structural engineering tools.

BWC approved the proposal.

(Annexure-A5, Page No.41 -)

3) Construction of New Gate:

It was reported that the construction of new gate would be completed shortly. After new gate is made operational, it was decided to close the old gate with construction of suitable boundary wall at the space made available in front of the old gate.

BWC approved the proposal.

4) **Use of fly ash Bricks:**

The Institute is considering for some time the use of Fly Ash – cement bricks which have shown consistently superior performance in lab tests. But in view of the low accumulated experience with this product, the committee was apprehensive about its use in important constructions. The BWC also considered the shortage of quality red bricks in Rourkela area and controls on use of red bricks in large quantity. While fly Ash – Cement bricks are normally a shade more expensive than red bricks, UPRNN has agreed to provide them at the same rate as red bricks.

The BWC decided the following:

- a) UPRNN and other contractors may be permitted on the recommendation of the construction committee to use fly ash cement bricks (not fly ash – lime) in peripheral structure (e.g. Boundary walls and small appendages to larger constructions, pipeline supports, man holes etc. but not in main building interiors.
- b) Dean (P.D.) and construction committee was advised to include Fly Ash cement bricks in all new proposals for construction.

It was decided that the same may be used for secondary structures such as boundary wall etc. for the time being. However, for future projects, the same may be included in the BOQ.
Accordingly, the concerned Architects should be informed.

BWC approved the proposal.

The meeting ended with thanks to the Chair.

(S. K. Upadhyay)
Registrar & Secretary
Building & Works Committee

(Sunil Kr Sarangi)
Director & Chairman
Building & Works Committee

Report on the action taken on the decisions made in the 12th Meeting of BWC held on 11.10.2010

<i>BWC item No.</i>	<i>Item Descriptions</i>	<i>Action taken</i>
BWC: 12(2010)-03:	<p>To report on the action taken on the decisions made in the 11th Meeting of BWC held on 09.04.2010 and to discuss matters arising out of the minutes:</p> <p>i). The Board also advised to explore the possibility of negotiating with architects towards reduction of Architect fees particularly on the new housing complex as this constitutes a number of repetitive blocks of same type design (BWC-11(2010)-06. M/s Arch-en-design have agreed to reduce their fees from 1.98% to 1.89% of the project cost for faculty residences.</p> <p>ii) The Board advised that in future, new proposals for construction will be examined by the BWC and the Board based on the actual requirement of plinth area for each building or activity keeping the existing facilities in view. A rough plinth areas and rate estimate as per CPWD or state norms, will have to be submitted, duly examined by the BWC before such a project can be sanctioned by the Board.</p>	
BWC: 12(2010) - 04:	<p>Review of ongoing Civil Projects:</p> <p>BWC reviewed the ongoing Civil Projects. The report is given in the Annexure. BWC expressed concern at the slow progress of many projects, but accepted the underlying reasons of labour shortage to be genuine. All concerned were advised to make conscious effort to accelerate pace of work, commensurate with the externally imposed situations.</p>	Works are in progress.
BWC:12 (2010) - 05:	<p>Review of ongoing Electrical Projects:</p> <p>BWC reviewed the ongoing Civil Projects. The report is given in the Annexure. BWC expressed concern at the slow progress of many projects, but accepted the underlying reasons of labour shortage to be genuine. All concerned were advised to make conscious effort to accelerate pace of work, commensurate with the externally imposed situations.</p>	Works are in progress.
BWC: 12 (2010)- 06:	Hotline Connection from Chhend to NIT Rourkela	Under process.
BWC: 12(2010)- 07:	<p><u>Proposal for New Constructions:</u></p> <ol style="list-style-type: none"> 1500 Seater Auditorium. Proposal for Construction of 3rd Floor (in G + 3 system) in the Extension portion of C.V. Raman Hall of residence. Proposal for extension of Mining, Ceramic and Computer Science Buildings. 	

	<p>4. Proposal for construction of additional water supply capacity.</p> <p>5. Renovation of Hill Top Water Tank and Construction of Boundary wall.</p>	
BWC: 12 (2010)- 08:	Deviation Statement for all the Projects.	As per the decision of the BOG vide resolution No. BOG-24(2010)-05, a committee was constituted who will study the aspects of the projects and submit the report before the next meeting.
BWC:12(2010)- 09:	<p>Any other item with the permission of the Chair.</p> <p>1. Analysis of rate for rate contract.</p> <p>2. Dismantling of collapsible Decorative frame structure for Homi Bhava Hall of Residence.</p> <p>3. Construction of New Gate:</p> <p>4. Use of fly ash Bricks:</p>	.

(S. K. Upadhyay)
 Registrar & Secretary
 Building & Works Committee

<i>BWC item No.</i>	<i>Item Descriptions</i>	<i>Action taken</i>
BWC: 11(2010) - 04:	Review of ongoing Civil Projects: <ol style="list-style-type: none"> 1. Construction of Bio Medical Science Building. 2. Construction of Electronics and Electrical Science Building. 3. Lecturer Hall Complex. 4. Faculty Residence. 5. Construction of Hostel Building 	<ol style="list-style-type: none"> 1) Building partially handed over. Finishing works in other areas in progress. Building to be handed over by 31.10.10. 2) Ground Floor roof 70% completed and First Floor roof 50% completed. Brick work in progress in basement and Ground Floor. 3) 4 Lecture Halls in basement and Ground Floor handed over. 4) Finishing works in 2 blocks in progress, which will be handed over by 31.12.10. Additional 2 blocks will be handed over by 31.3.11, and last 2 blocks by 30.06.11. 5) 128 rooms have been handed over. Additional 128 rooms will be ready by 14.10.10. Another 256 by 30.12.10 and balance 500 rooms by 30.6.11.
BWC:11 (2010) - 05:	Review of ongoing Electrical Projects: <ol style="list-style-type: none"> i) Biomedical Electrical wiring. ii) 33 KV Substation. iii) Air-conditioning in B. Behera Auditorium 	<p>Work is in progress Under process.</p> <p>Under process.</p>
BWC: 11 (2010)- 06:	Selection of Architects / Consultants for New construction Projects	Work orders issued to all Architects for major projects (Ph.II).
BWC: 11(2010)- 07:	Road network throughout the Campus for better connectivity	Work order issued. Work in progress.
BWC: 11 (2010)- 08:	Proposal for development of Water Ponds/Water bodies.	Under process.
BWC:11(2010)- 09:	Revised Deviation Statement of the Ongoing Major Projects (Phase-I).	Details of revised deviation statement was put up in the BWC Meeting (copy enclosed).
BWC: 11 (2010)-10:	Prequalification of Civil/Electrical Contractors for New Construction Projects (Phase – II) (e.g. Mechanical Science Building, Satish Dhawan Hall, Golden Jubilee Building, Lecture Hall Complex and Faculty Residence).	Under finalization.
BWC: 11(2010)-12:	Proposal for New works:	

	<p>The following new works are proposed.</p> <ol style="list-style-type: none"> 1. Provision of Low side AC work in Biomedical Building. 2. 0.18 MLD Sewage Treatment Plant for Hostels: 3. Selection of AC Consultant for existing and New Academic Buildings. 4. Dismantling of Space Frame in the existing Gate and re-erection near Biju Patnaik Library: 	<p>Under process</p> <p>Work order issued. Drawing submitted to consultant for approval.</p> <p>Worker order under issue.</p> <p>Dismantled and erected in front of Library.</p>
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BWC: 11(2010)-13:	<p>Any other item with the permission of the Chair.</p> <ol style="list-style-type: none"> 1. Registration of Contractors. 2. Review of Water supply to NIT Campus 5. Payment of Cess @1% under the Building and other construction and payment of Minimum wages to the worker working under different Civil, Electrical and other agencies etc. 	<p>Completed. Reviewed.</p> <p>Under process.</p>
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Annexure-A2

Annexure-A3

Annexure-A4