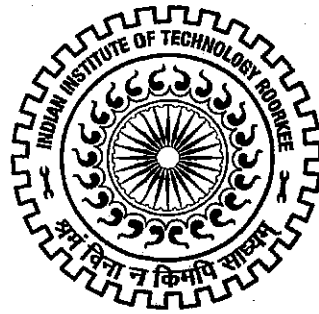


**भवन एवं निर्माण समिति
की अष्टम् बैठक का कार्यवृत्त**

**MINUTES OF THE EIGHTH MEETING OF THE
BUILDING & WORKS COMMITTEE**

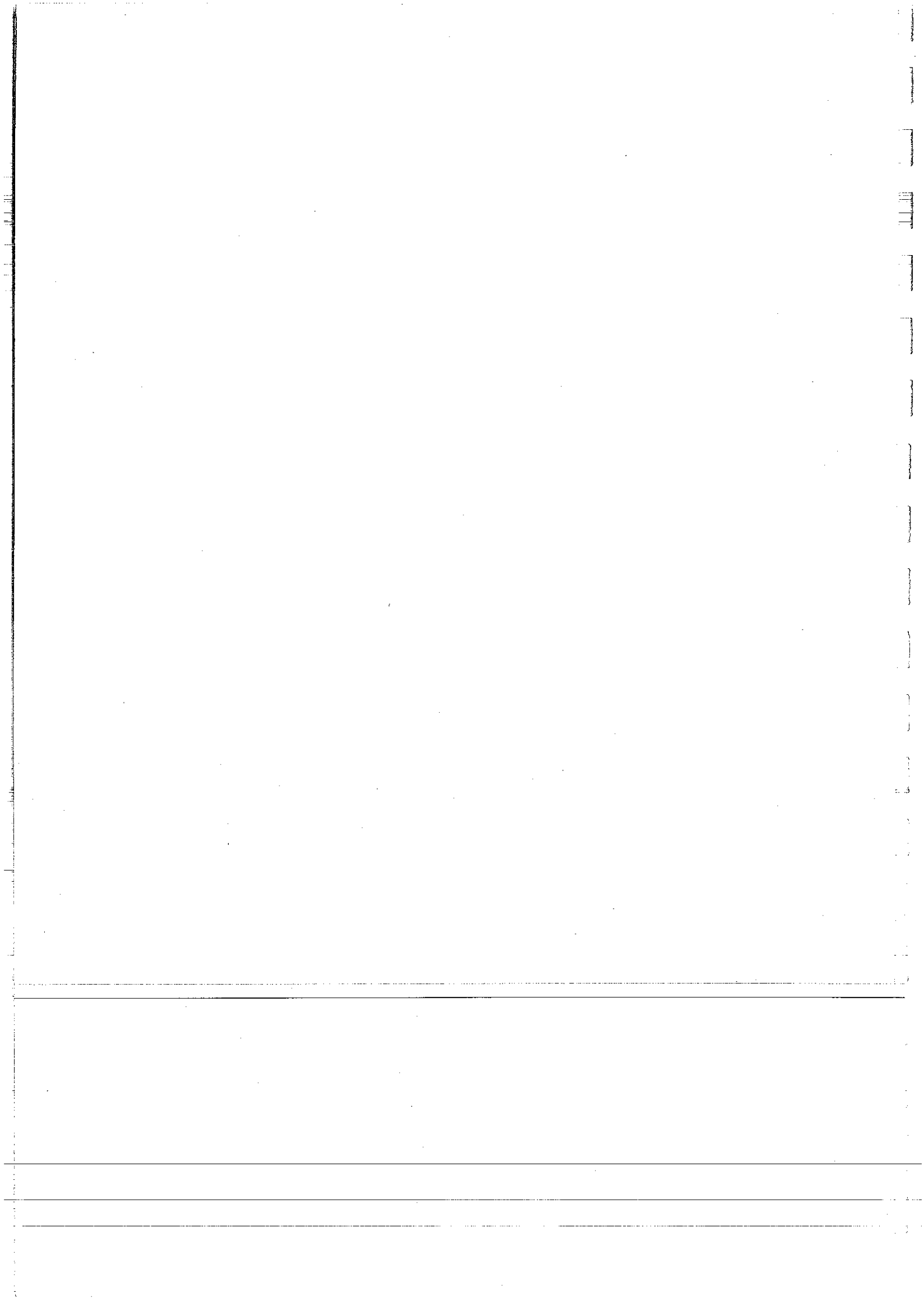
14TH SEPTEMBER 2004

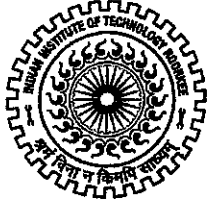


भारतीय प्रौद्योगिकी संस्थान रुड़की

रुड़की - 247 667 (भारत)

**INDIAN INSTITUTE OF TECHNOLOGY ROORKEE
ROORKEE-247 667 (INDIA)**





Lt Col A K Srivastava (Retd)
Registrar

भारतीय प्रौद्योगिकी संस्थान रुड़की

(पूर्व रुड़की विश्वविद्यालय)

रुड़की - 247 667, उत्तरांचल, भारत

INDIAN INSTITUTE OF TECHNOLOGY ROORKEE

(Formerly University of Roorkee)

ROORKEE - 247 667, UTTARANCHAL, INDIA

Fax : (91) 1332 - 285310, 273560,

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e-mail : regis@iitr.ernet.in

No. IITR/MS/8th B&WC/2004/406

Dated 17th September 2004

Subject: Recommendations (Minutes) of the 8th meeting of the Building & Works Committee held on 14th September 2004.

Enclosed herewith please find a copy of the recommendations (minutes) of the 8th meeting of the Building & Works Committee of this Institute held on 14th September 2004 for favour of information of the members and record. Members who attended the meeting are requested to kindly offer their comments, if any, within 20 days. If no comments are received, it will be presumed that they have no comments to offer and approve of the minutes as recorded.

Encl: as above

Yours faithfully,

(A.K.Srivastava)

Lt. Col. (Retd)

Registrar &

Member Secretary, B&WC

1. Prof. Prem Vrat
Director
Indian Institute of Technology, Roorkee
(Chairman)

2. Er. S. P. Singh
Chief Engineer, C.P.W.D.
Kendriya Bhawan
III Floor, Sector K, Aliganj
Near Purana Chauraha
Lucknow (U.P.)

3. Mr. P.K.Gupta
Director (T),
Department of Secondary & Higher Education
Govt. of India
Ministry of Human Resource Development
Shastri Bhawan, New Delhi 110 001
 4. Mr. S. K. Grover
Dy. Financial Adviser
The Ministry of Urban Development
& Poverty Alleviation,
Govt. of India,
New Delhi - 110 011
 5. Er. R.C.Mittal
The Chief Engineer
Public Works Department
Uttaranchal Govt.
Dehradun - 248 001 (Uttaranchal)
 6. Er. Prahalad Singh,
Dy. G. M.,
Uttaranchal Power Corporation Ltd.,
Roorkee - 247 667
 7. Er. Salek Chand
Institute Engineer
Indian Institute of Technology, Roorkee
 8. Dr. N.K.Garg, - Special Invitee
Dy. Director,
Central Building Research Institute, Roorkee
 8. Prof. V. K. Gupta - Permanent Invitee
Chairman Estate & Works
Indian Institute of Technology, Roorkee

 9. Prof. S.Ray - Permanent Invitee
Dean, Administration
Indian Institute of Technology, Roorkee
 10. Lt. Col. A.K.Srivastava - Member Secretary
Registrar
Indian Institute of Technology, Roorkee
-
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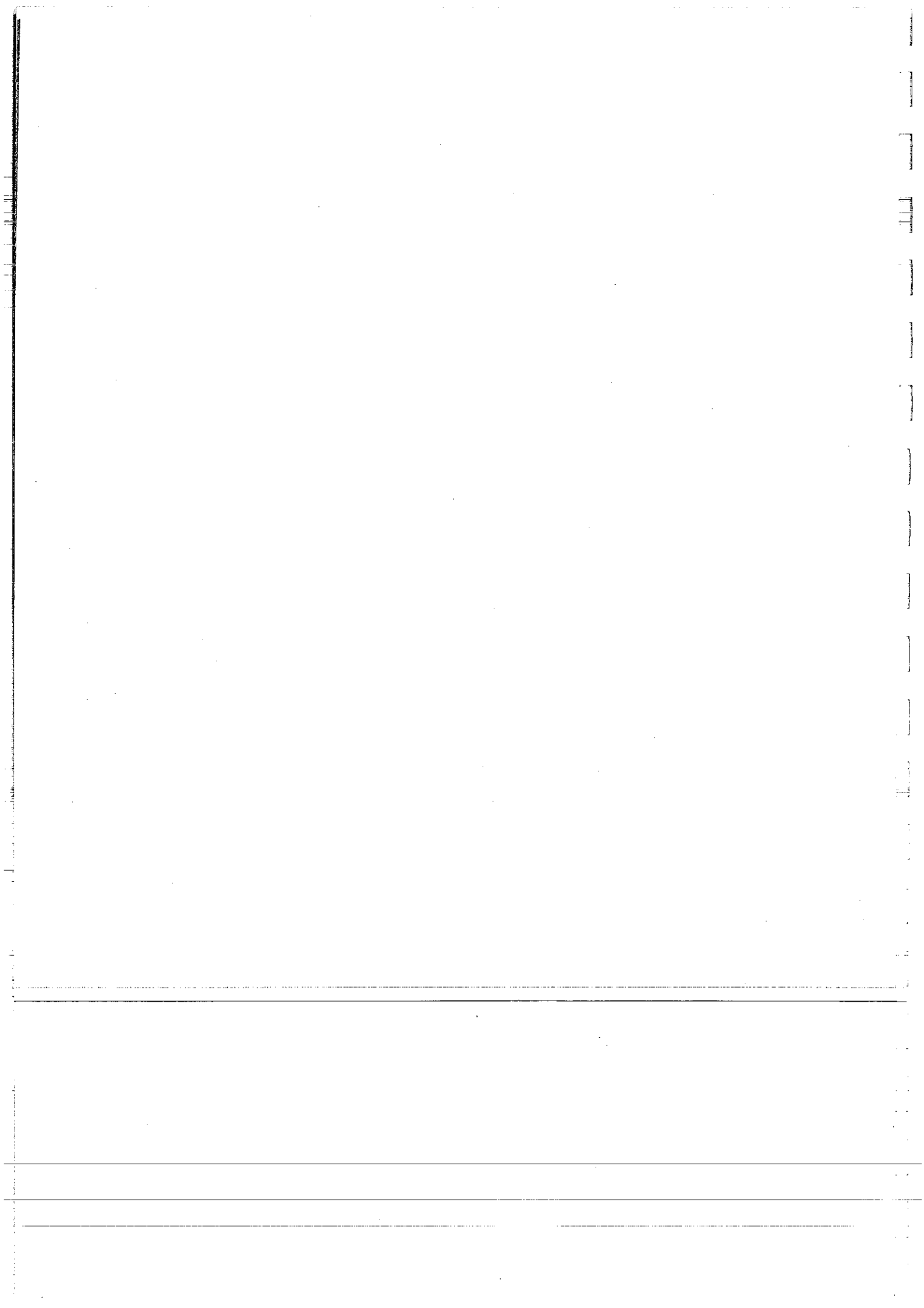
INDIAN INSTITUTE OF TECHNOLOGY ROORKEE
ROORKEE - 247 667



INDEX

Item No.	Particulars	Page (s)
8.1.0	Confirmation of the minutes of the 7 th meeting of the Building & Works Committee held on 26.3.2004.	2
82.0	Action taken report on the minutes of the 7 th meeting of the B&WC held on 26.3.2004.	2
8.3.0	<u>ITEMS FOR CONSIDERATION</u>	
	8.3.1 To consider the Administrative Approval and Expenditure Sanction to the Revised Preliminary Estimate of Rs. 3,17,30161.00 for Construction of VVIP Guest House as submitted by C.P.W.D.	2
	8.3.2 To consider the Administrative Approval and Expenditure Sanction to the Revised Preliminary Estimate for Rs. 4,26,46000.00 for Construction of Faculty Lounge as submitted by C.P.W.D.	3
	8.3.3 To consider the revised proposal for renovation of S.W.P. Hangar.	3
	8.3.4 To consider the proposal for infrastructure development of Institute Sports Association in respect of Inter-IIT Annual Sports Meet 2005.	4
	8.3.5 Progress report of the on going Major Works.	
	8.3.6 To consider the Administrative Approval and Expenditure sanction for housing NMR facility in the premises of Institute Instrumentation Centre (IIC) of Rs.37.00 lakhs.	4-5 6
	Appendix 'A'	7-10
	Appendix 'B'	11-18
	Appendix 'C'	19-21

17 SEP 2004



Minutes of the 8th meeting of the Building & Works Committee held on 14th September 2004 at 12.00 Noon in the Board Room of the Institute.

The following were present:

1. Prof. Prem Vrat, Director - Chairman
2. Er. S.P.Singh, Chief Engineer, CPWD, Lucknow - Member
3. Er. Prahalad Singh, Dy. G.M., UPCL, Roorkee - Member
4. Er. Salek Chand, Institute Engineer - Member
5. Dr. N.K.Garg, Dy. Director, CBRI - Special Invitee
6. Prof. V.K.Gupta, Chairman, E&W - Permanent Invitee
7. Prof. S. Ray, Dean Administration - Permanent Invitee
8. Lt. Col. (Retd) A.K.Srivastava, Registrar - Member Secretary

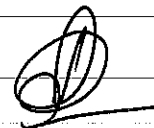
The Chairman, Building & Works Committee welcomed the members to the 8th Meeting of the Committee. He expressed a warm welcome to the external members and expressed his gratitude for their guidance and contribution in the proceedings of the meetings.

Before taking up the agenda items, the Committee thanked the under-mentioned outgoing members and recorded its appreciation for their valuable contribution in the meetings of the Committee.

1. Er. J.M. Lal
Dy. G.M., Uttaranchal Power Corporation Ltd.,
Roorkee 247 667
2. Prof. S.K.Kaushik
Chairman, Estate & Works
IIT Roorkee
3. Prof. M.L.Kapoor
Dy. Director,
IIT Roorkee

The Committee also welcomed the under-mentioned new members and hoped for their valuable contribution and active participation in its functioning.

1. Er. Prahalad Singh
Dy. G.M.
Uttaranchal Power Corporation Ltd.,
Roorkee 247 667



17 SEP 2004

2. Dr. N.K.Garg
Dy. Director
Central Building Research Institute,
Roorkee 247 667
3. Prof. V.K.Gupta
Chairman, Estate & Works
IIT Roorkee
4. Prof. S.Ray
Dean Administration
IIT Roorkee

Deliberations:

All the items of the Agenda were discussed and the deliberations/
recommendations are summarized as under:

Item No. 8.1.0 Confirmation of the minutes of the Seventh Meeting of the Building & Works Committee held on 26th March 2004.

Having received no comments on the minutes, the B&WC confirmed the minutes of the above meeting as recorded and circulated.

Item No. 8.2.0 Action taken Report on the minutes of the Seventh Meeting of the Building & Works Committee held on 26th March 2004.

The B&WC noted the actions taken on the minutes of the above meeting, as given on page 2-3 of the agenda note.

Item No. 8.3.1 To consider the Administrative Approval and Expenditure Sanction to the Revised Preliminary Estimate of Rs. 3,17,30,161.00 for Construction of VVIP Guest House, submitted by the C.P.W.D.

The Committee noted that the 7% Departmental Charges included by the CPWD in the revised Preliminary Estimate have now been waived.

The Committee also noted that the Board of Governors had approved the previous estimate for the Guest House for Rs.3,39,51,500.00 in principle, in the 9th meeting held on 19th June 2004, while approving the minutes of the meeting of the Building & Works Committee held on 26th March 2004, with the remark that 7% Departmental charges may be got waived from CPWD. The Committee, therefore, resolved that the revised estimate of Rs.3,17,30,161.00 submitted by the CPWD after waiving the Departmental Charges (**Appendix 'A'**) be placed before the Board of Governors for approval.

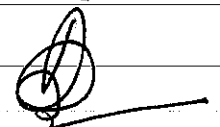
Item No. 8.3.2 To consider the Administrative Approval and Expenditure Sanction to the Revised Preliminary Estimate of Rs. 4,26,46,000.00 for Construction of Faculty Lounge, submitted by the C.P.W.D.

The Committee noted that the 7% Departmental Charges included by the CPWD in the revised Preliminary Estimate have now been waived.

The Committee also noted that this work has been rescinded by the CPWD, and the tenders recalled. The Committee decided to put the said work on hold, with the intention of prioritizing the utilization of funds for the other requirements, if necessary. The funds transferred to the CPWD for the Faculty Lounge, should be adjusted against the other ongoing works.

Item No. 8.3.3 To consider the revised proposal for renovation of the S.W.P. Hangar.

After extensive discussion, the Committee decided that the revised proposal for renovation of the SWP Hangar be accepted in principle. However, the



17 SEP 2004

proposal be further examined internally in detail, in respect of the following aspects:

- (a) Acoustic design be done scientifically, after measuring the decibel level requirement and the sound reflection/absorbing capacity of the various components of the Hangar.
- (b) Stage lighting be included.
- (c) Automatic screen be included.
- (d) Furniture be given lower priority; the item may be shifted to Phase II of the work, to be taken up in future.

Item No. 8.3.4 To consider the proposal for infrastructure development of Institute Sports Association in respect of Inter-IIT Annual Sports Meet 2005.

At the outset, a detailed presentation on the proposal costing Rs.788.00 lakhs was made by Dr. Ajay Gairola, Deputy Chief Sports Adviser, before the Committee. After a lengthy discussion, the Committee decided that only such renovation and new facilities which are most essential for the successful conduct of Inter IIT Annual Sports Meet- 2005 to be organized at IIT Roorkee, may be taken up presently, which amounted to Rs.188.00 lakhs, as given at **Appendix 'B'**. The proposal for Rs.188.00 lakhs be placed before the Finance Committee & Board of Governors for approval.

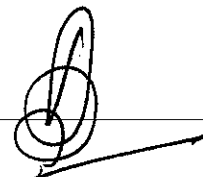
Item No. 8.3.5 Progress report of the ongoing Major Works.

The progress report of the on going Major Works was noted with the under-mentioned observations/decisions:



17 SEP 2004

- (a) The construction of the Faculty Lounge (estimated at Rs. 4,26,46,000/-, after deducting the departmental charges from the original estimate), is put on hold till further orders.
- (b) The role of the Monitoring Committees constituted by the Institute for monitoring the works being executed by the CPWD should be advisory in nature. However, the Monitoring Committees' advice for correcting the apparent defects, when pointed out, should be complied with, as removing certain types of defects from any structure, after completion, is not possible. Further, the Superintending Engineer, CPWD, Dehradun, be nominated as a member on all Monitoring Committees.
- (c) Chief Engineer CPWD, Lucknow, who is also a Member of the B & WC, informed the Committee that the CPWD is fully responsible for the safety and quality of all the buildings being constructed by them at IIT Roorkee.
- (d) Delays in completion of the ongoing works should be avoided at all costs, and penalty clauses in the contract should be invoked against the defaulting contractor(s), in case any work falls behind schedule.
- (e) IIT Roorkee will take over the new buildings constructed by the CPWD/other agencies, only after applying the necessary quality tests, checks etc.



Item No.8.3.6 To consider the Administrative Approval and Expenditure Sanction for housing NMR facility in the premises of Institute Instrumentation Centre (IIC) of Rs.37.00 lakhs.

The Committee decided that an estimate of Rs. 37.00 lakhs submitted by the Construction Division of the Institute (**Appendix 'C'**), for construction of a building, external electrification etc. for housing the central NMR facility in the premises of Institute Instrumentation Centre, be accepted and placed before the Finance Committee and Board of Governors for approval.

The meeting ended with a vote of thanks to the Chair.



17 SEP 2004

GOVERNMENT OF INDIA
CENTRAL PUBLIC WORKS DEPARTMENT

Appendix 'A'
Item No.8.3.1

State: Uttaranchal

Division: Roorkee Central Division Branch: D&R

Name of work: C/o V.I.P Guest House at IIT Roorkee.

FUND: }
Major Head: } Deposit
Minor Head: }
Detailed Head: }

This revised preliminary estimate framed by Er. V.K. Asol, Executive Engineer, Roorkee Central Division, CPWD, Roorkee and processed by Er. Yamin Beg, Executive Engineer (P)-III, the office of the Chief Engineer(NZ-II), CPWD, Lucknow for the probable cost of Rs. ~~3,39,51,500.00~~ i.e 3% contingencies 3,17,30,161.00
7% D.C.

REPORT

History:

This preliminary estimate amounting to Rs. ~~3,39,51,500.00~~ i.e 3% contingencies & 7% D.C. has been framed to cover the probable cost of the above mentioned work and for accord of revised A/A & E/S from the competent authority. Earlier the preliminary estimate was framed on the basis of tentative projections given by the IIT, Authority without any architectural drawings for an estimated cost of Rs. 3,31,71,700.00 i.e internal furniture and furnishing. This estimate was modified by IIT at their level and sanction was conveyed for Rs. 235.00 Lacs only vide their letter No. Const/1734E dt. 13-01-2003 excluding the cost of internal furniture and furnishing.

At that time exact location of proposed work site was not known, and as such cost of bulk services, internal W/S could not be ascertained and not included in old estimate

After submission of previous estimate the Arch. Drawings and specification etc. have been prepared by the consultant as appointed by IIT. The architectural drawing said specification have been approved by the IIT.

This revised Preliminary Estimate has been framed on basis of the drawings and specifications finalized by the consultant and duly approved by the IIT. This estimate does not include the cost of internal furniture and furnishing and a separate estimate will be submitted further after the architectural drawings are approved by the IIT. However the revised Preliminary Estimate includes the cost of compound wall to be erected around the V.I.P Guest House

The increase in cost is mainly due to increase in plinth area, provision of underground specification and development work e.g. bulk services, W/S and compound wall retaining wall etc

Design and scope: 1- This estimate has been prepared on the basis of Architectural drawings prepared by the consultant and duly approved by client. Guest House comprises of 10 Nos. double room and 20 Nos. single room suits. As per meeting held on 03-02-2003 at Roorkee and as per the minutes of meeting issued on 07-02-2003, the requirement was modified. Accordingly the revised drawing were prepared and approved by the IIT. The plinth area of the buildings has been increased from 2440 sqm. to 3038 sqm. Area of 2000 sqm. was considered in original estimate.

2- Following provision have also been made in this estimate

- i) Partly load bearing and partly framed structure designed for earthquake resistance
- ii) Provision for fire fighting, internal water supply and fire alarm, internal electrical installation i.e copper wiring and wiring for telephone power points.
- iii) Some of the provision were not considered in previous estimate. However Extra provisions have been made in this estimate for furnishing and

increase entrance hall and superior finish tile in the entrance hall, dado of toilets and dressing space. A further provision of POP on ceiling, textured painting, glass walls, stainless steel patch fitting to A.C. doors have also been taken in this revision.

- iv) Provision of AC has been made in each room with glass in external doors attached to the sun.
- v) Provision has also been made for development work of bulk services boundary wall including retaining wall and septic tanks under ground, pump well and horticulture works.

Specification: The work shall be carried out as per CPWD specification 1956 Vol. 1 to Vol. 4 with upto date correction slips and/or manufacturers requirements.

Foundation: Fully isolated RCC footings and partly load bearing spread footing brick masonry foundation laid over lean cement concrete.

Superstructure: RCC beams column and slabs, 23 cm thick brick masonry filler walls where required.

Flooring: Ordinary flooring in carpet area and marble flooring in non carpeted area. Superior quality tiles e.g. marbanite flooring and dado of toilets.

Doors/Windows: Decorative finish flush door shutters and aluminum section windows with grills in the windows with external doors & windows having wire gauge shutters.

Finishing: All inner wall shall be plastered with cement mortar and finished with superior quality paint (Plastic Emulsion). External portion shall be finished with Distressed clay ceramic tiles (unglazed) 10 mm thick as per the specification decided by architect and approved by the client.

Rates: Plinth area rates 01-01-1992 with 46% cost index and prevailing market rates.

Cost: Rs. ~~3,19,51,500.00~~ ^{31720161.00} i/c 3% contingencies and Exc. 2.7%.

Method: By contract after call of tender.

T & P: No special T&P required. All necessary T&P shall be arranged by the contractor at his own cost.

Land: Available with client department in IIT Roorkee.

Time: 18 months after receipt of sanction.

19/11
ASST. ENGINEER(P) III
NZ II CPWD LUCKNOW

[Signature]
EXECUTIVE ENGINEER(P) IIE
NZ II CPWD LUCKNOW

[Signature]
SUPERINTENDING ENGINEER(P)
NZ II CPWD LUCKNOW

[Signature]
17 SEP 2004

GENERAL ABSTRACT

NAME OF WORK: C/O FACULTY LOUNGE AT I.I.T. ROORKEE

Sl. No.	Description of Work	Original Estimate		Revised Estimate			
		Civil	Electrical	Civil	Electrical	Total	
1.	Building Portion	18360103.00	3315081.00	21675187.00	21692946.00	4577574.00	26270520.00
2.	Development Work		102200.00	102200.00	2763618.00	465002.00	3228620.00
3.	Bulk Services		515000.00	515000.00		515000.00	515000.00
4.	Boundary wall including retaining wall				1716021.00		1716021.00
	Total	18360103.00	3932281.00	22292387.00	26172585.00	5557576.00	31730161.00

Add Departmental Charges 7%

~~2221111.00~~

Total

~~33951272.00~~

Say

~~Rs. 3,39,51,500.00~~

31730161.00

S.d./
A.E. (P)
C.P.W.D., Lucknow

S.d./
E.E. (P)III
C.P.W.D., Lucknow

S.d./
S.E. (P)
C.P.W.D., Lucknow

S.d./
Chief Engineer (NZ-II)
C.P.W.D., Lucknow

17 SEP 2004

Name of the work: C/o V.I.P. Guest house at IIT Roorkee.

The reasons for deviations in the cost of work has already been mentioned in the history sheet of the revised estimate as submitted vide Chief Engineer (NZ-II), CPWD, Lucknow office letter even no. 11929-33 dated 24.11.2003. Some main reasons are reiterated below for ready reference.

Sl. No	Description of items	Original provisions	Revised provisions	Remarks
1.	Plinth Area	2000 Sqm	3038 Sqm	Increase in plinth area.
2.	Development work	----NIL----	As per actual plot Area-9100 Sqm	No provision taken in original estimate.
3.	Boundary wall proposed	----NIL----	As per requirement of site	----do----
4.	Departmental charges	----NIL----	@7%	----do----

Remarks : The revised estimate does not include any provisions for internal furniture & furnishing .


Executive Engineer
Roorkee Central Division,
CPWD, Roorkee

No: DB(3)/RCD/G.H./ 360

Date: 16/3/2004

To,

Institute Engineer
I.I.T., Roorkee



17 SEP 2004

**PROPOSED BUDGET FOR INFRASTRUCTURE
DEVELOPMENT**
(INTER IIT MEET Dec. 2005)

S.N.	Item	App. Cost in RS. (Lacs)
1.	Development of new sports arena	26.0
2.	Three synthetic (six layered) tennis courts	31.0
3.	One synthetic basket ball court with fencing and proper sitting and lighting arrangement	10.5
4.	Relaying, sitting and lighting arrangement for volley ball courts	5.0
5.	Renovation of badminton hall	18.0
6.	Cabling and switch gear for the complex	30.0
7.	Renovation of Stores/ pavilion	25.0
8.	Renovation of LBS stadium (relaying of pitch, strengthening of sitting stairs, lighting and watering systems)	19.5
9.	Lighting and control room at swimming pool	7.0
10.	Renovation and revival of squash courts	16.0
	Total	188.0



17 SEP 2004

1. Details and justification of the development of new sports arena

Presently we have only L.B.S. stadium ground for Hockey, Cricket, Football and Athletics. All these games are played on the same ground but it will not be possible to arrange all these events simultaneously during Inter IIT and other Tournaments. Therefore New Sports Arena is urgently required to conduct successfully these events during Inter IIT meet – 2005.

Board of Governors realized this difficulty and allocated the land in front of Saraswati Kunj (WRDTC experimental farm) for sports. The total area of this land is about 20000 m² (2 ha.). Accordingly it is now proposed to develop this land into modern sports arena. It would require an expenditure of Rs. 26 lakhs as per details given below:

Sl. No.	Item	App. Cost in Rs. (lakhs)
1.	Development charges @Rs.50 per m ² for approx. 20,000 m ² (leveling, compaction, grass, tracks)	10.0
2.	Sitting arrangement	4.0
3.	Lighting	5.0
4.	Store/Change room (2 nos)	2.0
5.	Tube well	1.0
6.	Sprinkler	3.0
7.	Misc.	1.0
	Total	26.0

2. Details and justification of three synthetic tennis courts

Presently there are 6 tennis courts (4 Hard courts and 2 gravel courts). These courts are scattered in IIT Campus. None of these courts are 'state of art' courts and require lot of maintenance and manpower. The lighting arrangement at these courts is also not proper. Out of these courts only three courts are operational. Rests of the courts are lying abandoned due to poor maintenance and lack of funds. It is proposed to have 3 state-of-the-art synthetic tennis courts having proper lighting, sitting and drainage arrangements. Other IIT's are already having such courts or are in the process of building these. This would require an expenditure of Rs. 31.0 lakhs as per details given below:

S.No.	Item	No. of Units	App. Cost In Rs. (lakhs)
1.	Courts @Rs.4 lakhs per court having 6 layers	3	12.0
2.	Base surface preparation for total area of approx.(10,000 sq. ft.) @Rs.50 per sq. feet.	3	5.0
3.	Lighting @Rs.2.5 lakhs per court	3	7.5
4.	Fencing/drainage @Rs.1.0 lac	3	3.0
5.	Sitting arrangements @ Rs. 1.0 lac per court	3	3.0
6.	Misc. expenses		0.5
	Total		31.0

3. Details and justification of synthetic basketball

Presently there are 3 basketball courts in L.B.S. stadium. These courts were built about 40 years ago. All of these courts are having hard surface. None of these courts has proper lighting arrangement and sitting facilities.

It is proposed to have one synthetic basketball court having proper lighting and sitting arrangement. Synthetic court provides extreme comfortable and shock absorbent surface. It would require an expenditure of Rs. 10.5 lakhs as per details given below.

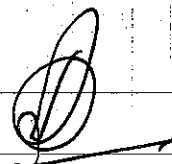
S.No.	Items	App. Cost in Rs. (Lakhs)
1.	Synthetic Court including base surface preparation and boards etc.	6.0
2.	Sitting arrangements	1.0
3.	Lighting	2.5
4.	Fencing	1.0
	Total	10.5

4:Details and justification of relaying, sitting and lighting arrangement for volleyball courts

Presently there are two Volleyball courts which are located at the side of swimming pool. Both of these courts do not have sufficient room for sitting during competitions.

These courts are also not as per national and international standards. Pole to pole distance has now been changed from 10 meters to 11 meters. It is proposed to renovate these courts with standard dimensions and proper sitting and lighting arrangement. It would cost approx. Rs. 5.0 lakhs as per details given below:

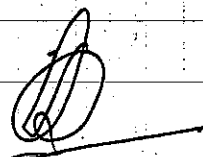
S.No.	Item	No. of Units	App. Cost in Rs. (lakhs)
1.	Courts relaying @Rs.0.5 lakhs per court for 2 courts	2	1.0
2.	Sitting arrangement @Rs.0.5 lakhs per court	2	1.0
3.	Lighting @1.5 lakhs per court	2	3.0
	Total		5.0



5. Details and justification of renovation of badminton hall

The present Badminton hall has three wooden courts. These courts were built long ago. The wooden strips have been damaged due to moisture (roof leaks during rainy season) and termite. It is proposed to replace the damaged wooden strips and also provide synthetic rolling mats on two courts. The synthetic rolling mats provide extreme comfort conditions to the player. The existing lighting arrangement is also inadequate and inefficient. It is to be replaced by a properly designed and effective lighting scheme. This will require a major change in the location and type of luminaries. The renovation would cost approx. Rs.18.0 lakhs as per details given below:

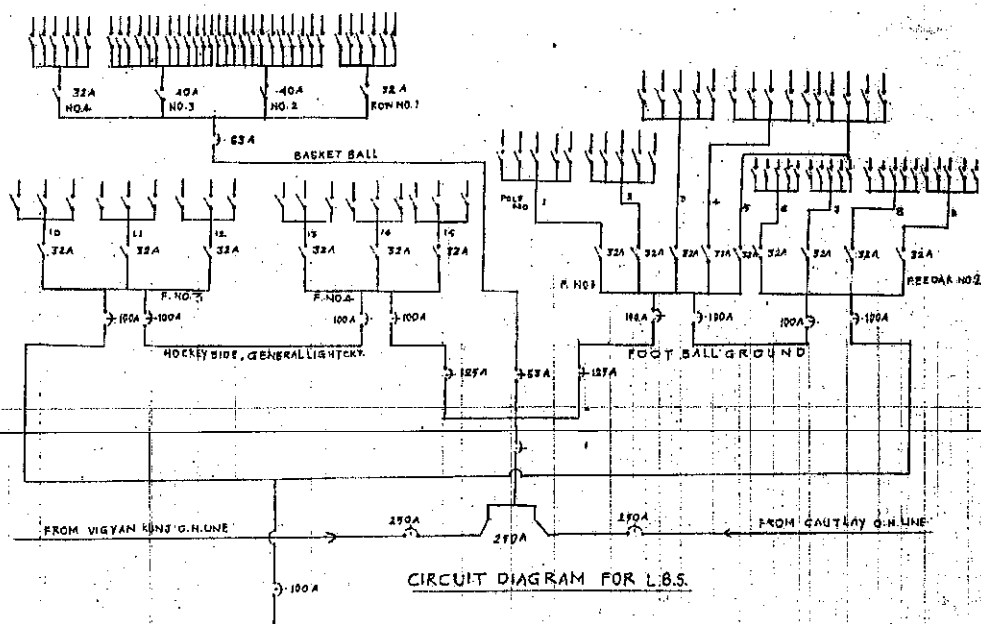
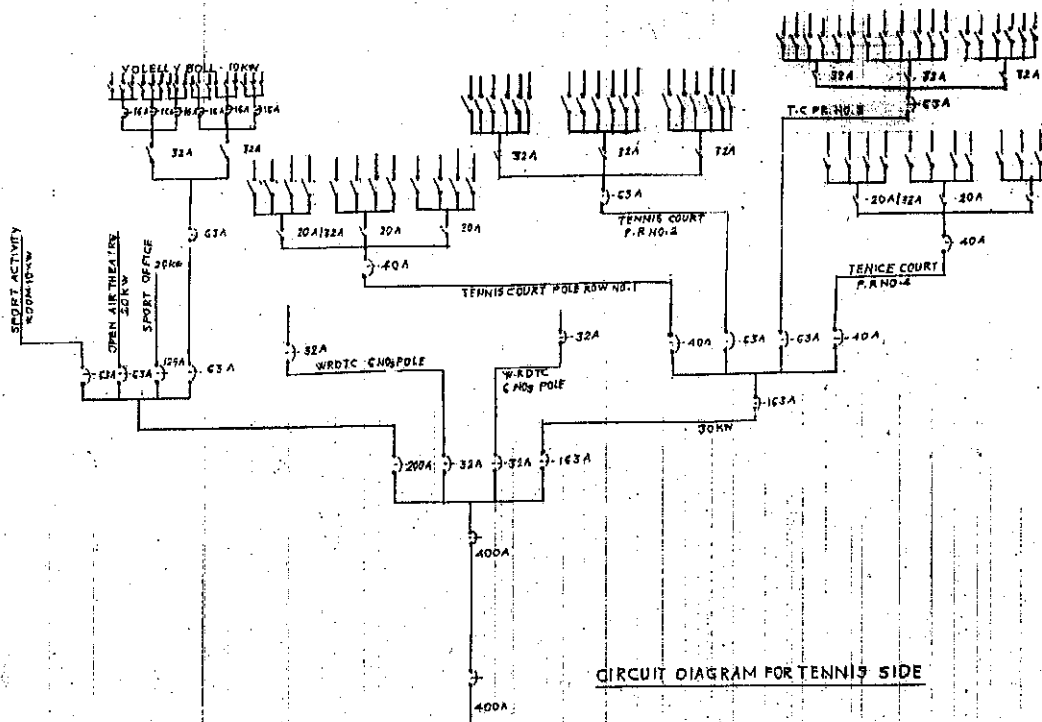
S.No.	Item	App. Cost in Rs. (lakhs)
1.	Wooden floor repairing /roof repair and ventilation etc.	5.0
2.	Lighting	4.0
3.	Synthetic rolling mats @ Rs. 4. 0 lakhs for 2 courts	8.0
4.	Sitting	1.0
	Total	18.0 lakhs



17 SEP 2004

6. Details and justification of cabling and switchgear for the complex

The new sports complex including the swimming pool and 'Student Activity Centre' would require the laying of separate cable and installation of switchgear. The cost of cabling and switchgear is estimated as Rs. 30 lakhs.



[Handwritten Signature]

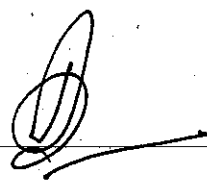
7. Details and justification of Stores/Pavilion

The pavilion at the LBS was built in 1919-20. Presently the whole pavilion is in dilapidated condition and is beyond repair. It is proposed to bring the whole building down and rebuild it preserving the old architecture but with a better layout and facilities. Such renovation has already been attempted successfully with the parts of main building. This reconstruction would require an expenditure of about Rs. 25.0 lakhs (construction of about 500 m² area @ Rs. 5000 per m²).

8. Details and justification of renovation of LAL BAHADUR SHASTRI Stadium

Lal Bahadur Shastri Stadium is the main play field of IIT Roorkee. It is having an area of approx. 40,000 m² (4 ha). The present lighting at L.B.S Stadium is not sufficient and as such students cannot practice in late evening hours as the classes usually run till 6. P.M. Students are not able to practice during weekdays. By providing adequate lighting activities like cricket, general conditioning, and athletics etc. can continue till late. This will also motivate students to come to sports ground late in the evening. The watering system of the stadium is also not proper. It is proposed to have proper lighting and watering arrangements in the stadium. Stairs for sitting purpose also need strengthening and renovation. The complete renovation would cost approx. Rs.19.5 lakhs as per details given below:

S.No.	Item	App. Cost in Rs. (lakhs)
1.	Lighting arrangements	6.0
2.	Watering system	3.0
3.	Renovation of stairs etc.	4.0
4.	Lawn development @ Rs.5 per m ² .	4.0
5.	Development of two more fenced cricket practice cement pitches with synthetic grass	1.0
6.	Relaying of existing matting cricket pitch	1.5
	Total	19.5



17 SEP 2004

9. Details and justification of lighting and control room at swimming pool

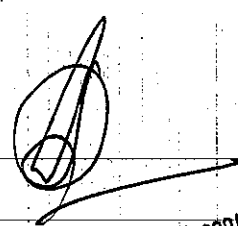
At present the lighting condition at swimming pool is not proper. Proper lighting arrangement is necessary so that students could practice in late evening hours after classes. The installation of an aeration plant at the swimming pool is necessary to further improve the water quality. A control room at swimming pool is also required. The details of expenditure are given below:

S. No.	Item	App. Cost in Rs. (lakhs)
1.	Lighting	3.5
2.	Control room	1.5
3.	Aeration plant	2.0
	Total	7.0

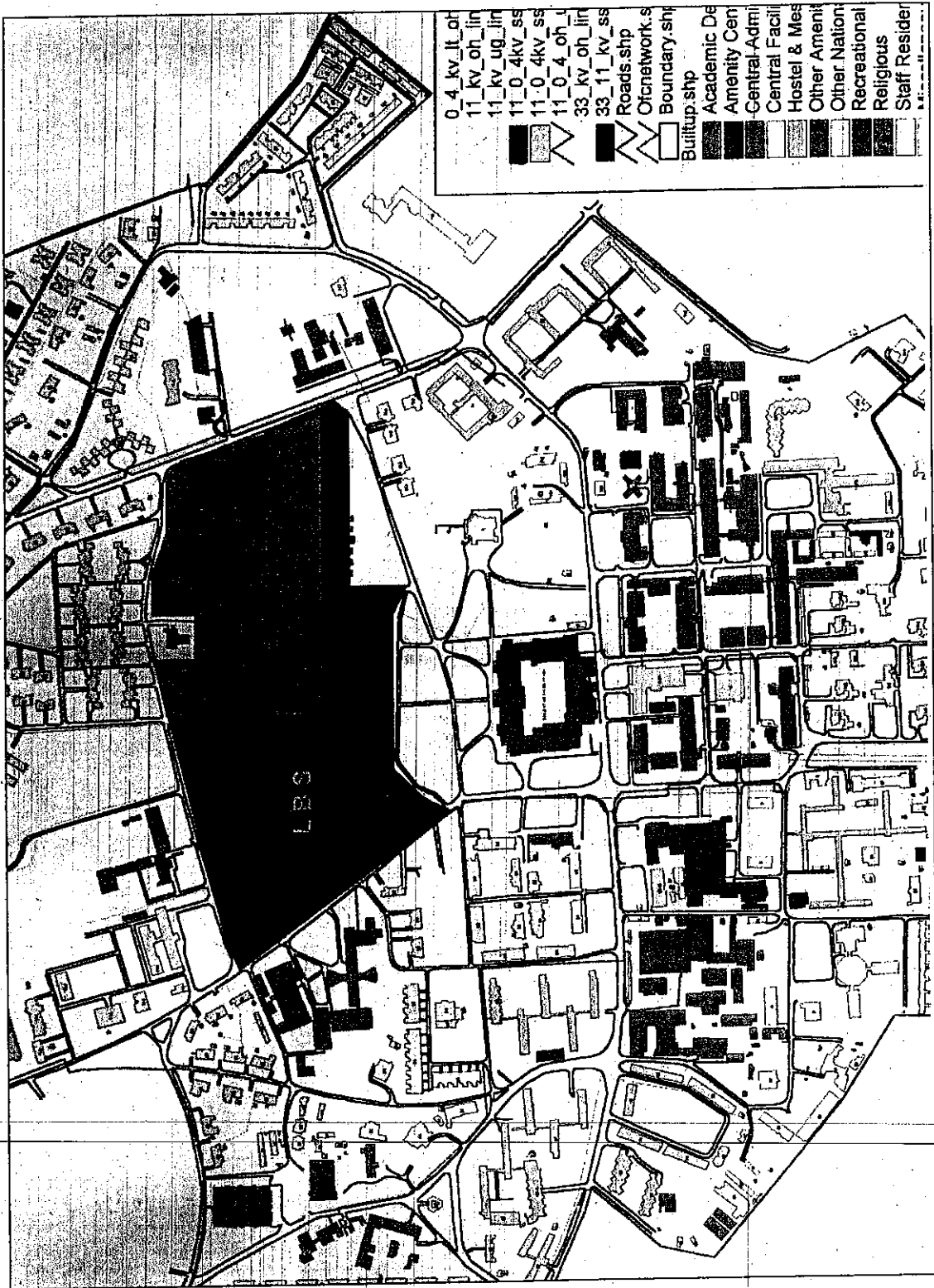
10. Details and justification of renovation and revival of squash courts

Squash court complex with seven courts was developed about fifty years ago. Out of these seven courts, presently only three courts are in running condition. Four courts had to be abandoned due to shortage of funds. It is proposed to revive two of these courts again. Squash is likely to be included in Inter IIT meet – 2005. This would require an expenditure of Rs.16.0 lakhs as per details given below.

S.No	Item	No. of Units	App. Cost in Rs. (lakhs)
1.	Glass wall (back) only @Rs.2.30 lakhs per court	2	4.6
2.	Hard plaster and wooden flooring @Rs.4.2 lakhs per court	2	8.4
3.	Lighting @Rs.1.0 lakhs per court	2	2.0
4.	Sitting @Rs. 0.5 lakhs per court	2	1.0
	Total		16.0



17 SEP 2004



Sports Complex


ESTIMATE FOR THE CONSTRUCTION OF BUILDING FOR NMR FACILITY AND EXTERNAL ELECTRIFICATION

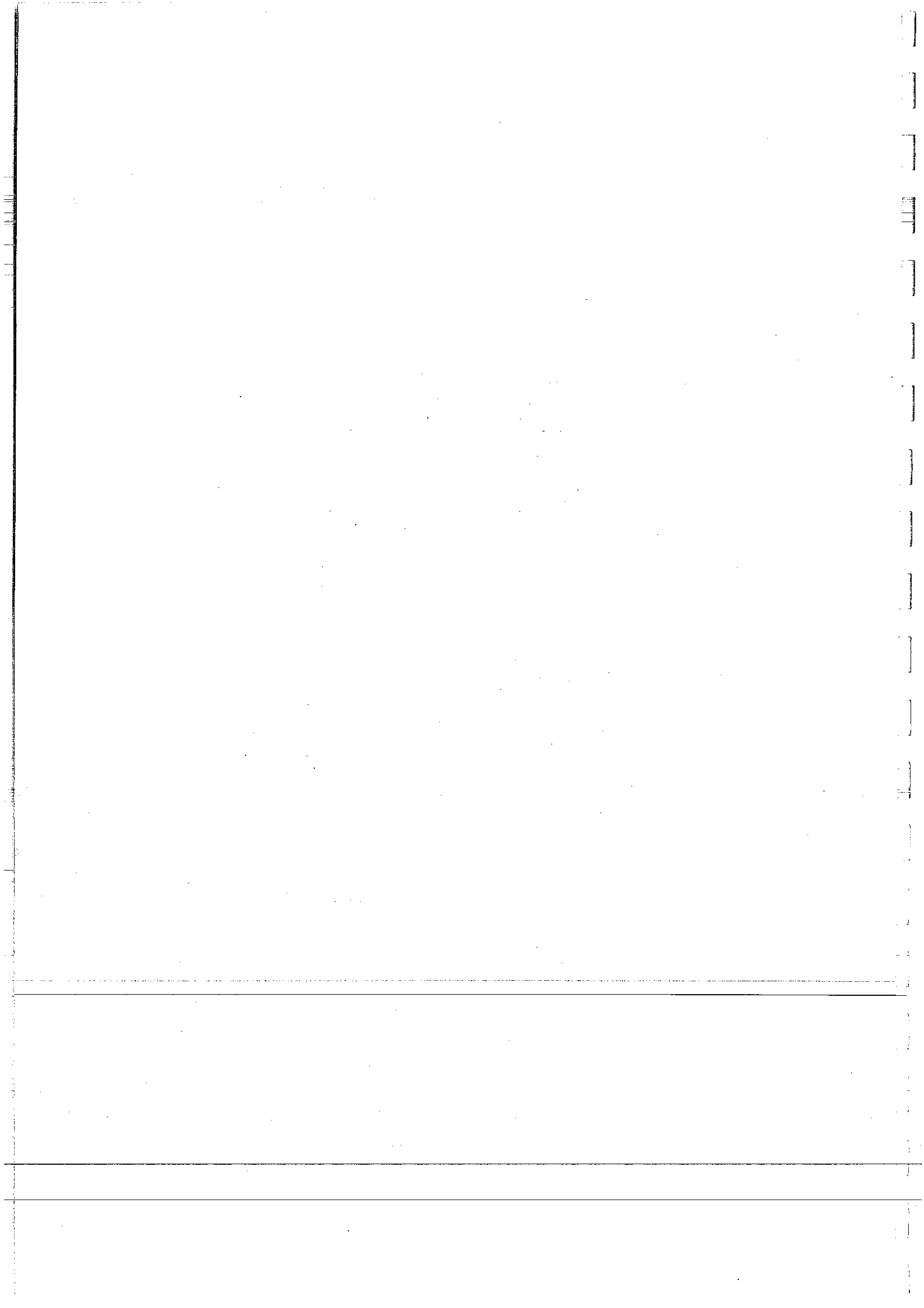
Sl. No	Name of work	Plinth Area M ²	Plinth Area rates Rs. Per M ²	Estimated Cost Rs.
1.	Construction of building for NMR facility			
	(a) At Ground floor	450.00	5182.00	2331900.00
	(b) At first floor	70.00	4556.00	318920.00
			Total =	2650820.00
2.	Add 20% extra for extra ordinary specifications such as aluminium doors and windows jointless ceramic floor tiles etc.			530164.00
3.	Add 10% Extra for internal electrification for sophisticated Machines, P.C. Lab. and A.C.'s			265082.00
4	Add for External electrification, panel board and cable etc.			150000.00
			Total =	3596066.00
			3% Contingencies	107882.00

Grand Total Rs. 3703948.00
Say **Rs. 37.00 Lacs**

Appendix 'C'
Item No.8.3.6

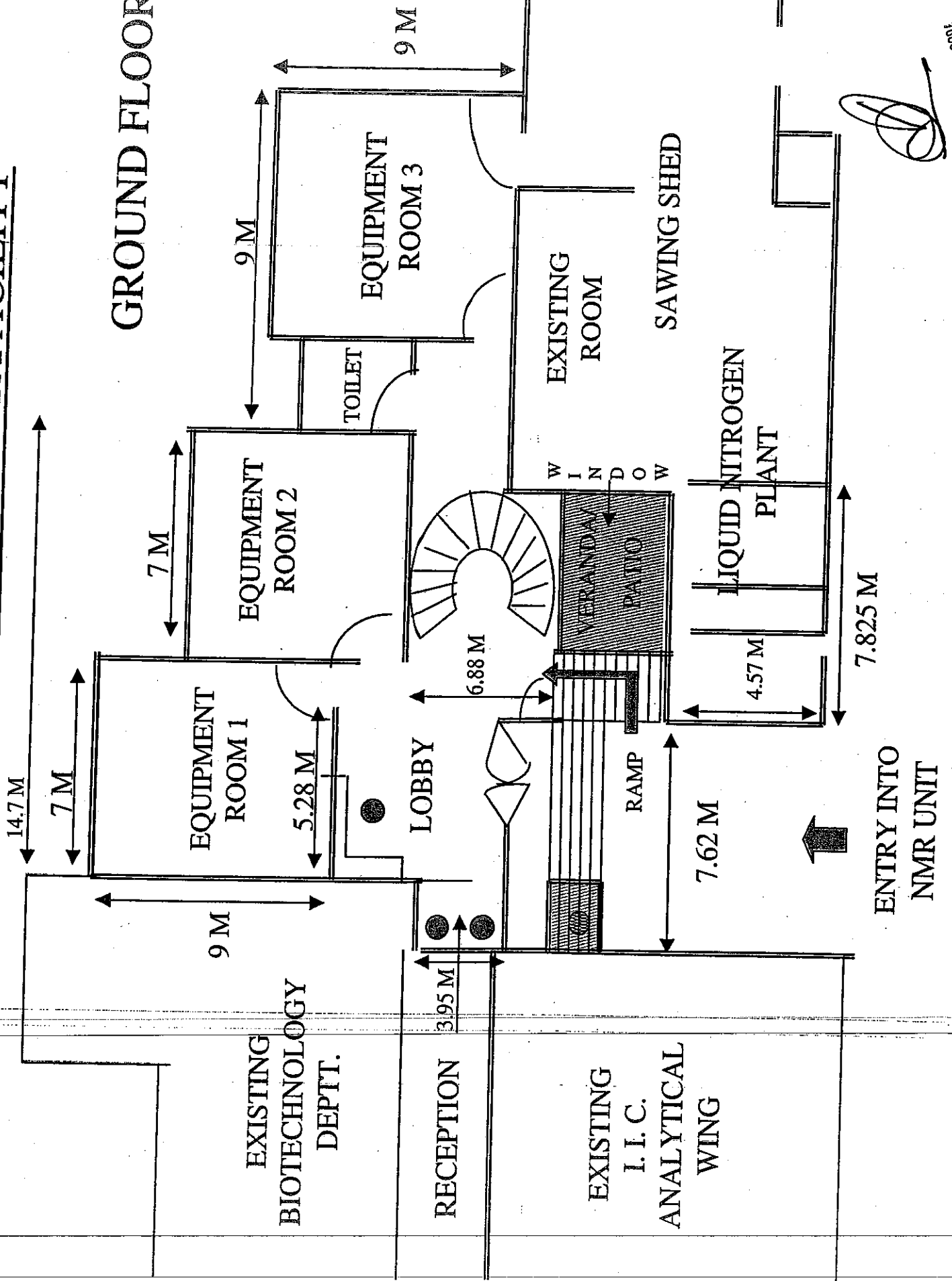

10.9.04
INSTITUTE ENGINEER


11 SEP 2004

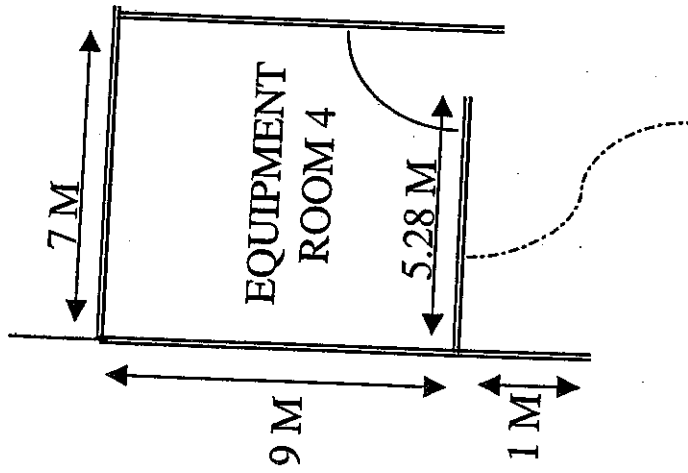


SITE PLAN FOR CENTRAL NMR FACILITY

GROUND FLOOR



17 SEP 2004



FIRST FLOOR

Room 1 to 4

- NMR Labs

Equipment Room 2

- existing refrigeration section

1000