



Er. H.P. Singh  
Executive Engineer

ਪੰਜਾਬ ਟੈਕਨੀਕਲ ਯੂਨੀਵਰਸਿਟੀ ਜਲੰਧਰ

**PTU** PUNJAB  
TECHNICAL  
UNIVERSITY

Esid. Under Punjab Technical University Act, 1996  
(Punjab Act No. 1 of 1997)

Ref No

PTU/CC/1228

Dated

20/11/2013

**Sh. D.L. Sharma, President,**  
Vardhman Spg. & Gen. Mills Ltd.,  
Chandigarh Road, Ludhiana.

**Sh. Amrit Sagar Mitral**  
CMD, Sonalika Tractors Ltd,  
Hoshiarpur.

**Dr. A. P. Singh, Dean/P&D,**  
Punjab Technical University,  
Jalandhar.

**Sh. A. N. Chowdhry (Special Invitee),**  
3-B, Jyoti Nagar,  
Jalandhar.

**Dr. Prabhjot Kaur (Special Invitee),**  
Officiating Director Mohali Campus,  
C102B, Phase-7 Industrial Area, Mohali.

**Sh. Inderjit Kumar (Special Invitee),**  
(PH Experts)  
House No. 116, Phase 3B/I,  
S.A.S. Nagar, Mohali.

**Sh. S.L. Kaushal,**  
Chief Architect, Punjab (Retd),  
2865, Sector 42-C, Chandigarh.

**Dr. H. S. Bains,**  
Registrar,  
Punjab Technical University, Jalandhar.

**The Director,**  
Department of Technical Education, Punjab,  
Plot No. 1, Sector-36A, Chandigarh.

**Sh. S. K. Mishra (Special Invitee),**  
Finance Officer,  
Punjab Technical University, Jalandhar.

**Er. Jaswant Singh Pabla (Special Invitee),**  
(Electrical Expert)  
House No. 2631, Sector-79, Mohali.

**Sh. Rajiv Aggarwal, Architect**  
M/s Archigroup Architects,  
A-14, Sector-15, Noida -201301.

**Sub : Construction of new campuses of Punjab Technical University – 39<sup>th</sup> meeting of the Standing Building Construction Committee.**

Dear Sir/Madam,

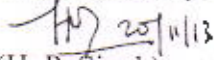
39<sup>th</sup> meeting of the Standing Building Construction Committee shall be held under the Chairmanship of Dr. R. S. Khandpur, Director General, PGSC at 1130 hours on 28.11.2013 at PTU's Mohali campus at C102B, Phase-7 Industrial Area, Mohali.

Agenda and Agenda note for the meeting are enclosed.

You are requested to make it convenient to attend the meeting.

Thanking you

Yours Sincerely,

  
(H. P. Singh)

Executive Engineer

Copy to : Dr. R. S. Khandpur, DG, PGSC, SCO 60-61, Sector 34-A, Chandigarh.

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Punjab Technical University Jalandhar

Kapurthala Campus : Jalandhar-Kapurthala Highway, Kapurthala-144601

Mobile : 9478098017 www.ptu.ac.in E-Mail : exeptu@gmail.com

## PUNJAB TECHNICAL UNIVERSITY, JALANDHAR

### Sub : Agenda for the 39<sup>th</sup> meeting of the Standing Building Construction Committee.

- Item No. 39.1 : To confirm the Minutes of 38<sup>th</sup> meeting of Standing Building Construction Committee held on 20.05.2013.
- Item No. 39.2 : Action taken on various items discussed during previous meetings of Standing Building Construction Committee.
- Item No. 39.3 : To discuss and approve the design basis reports submitted by the Architect for External Electrical works and Estate Public Health works in respect of Punjab Institute of Technology, main campus, Kapurthala.
- Item No. 39.4 : To discuss and approve the design basis reports submitted by the Architect for External Electrical works and Estate Public Health works in respect of Punjab Institute of Technology, Nandgarh, Bathinda.
- Item No. 39.5 : To discuss and finalize the layout plan of proposed office of Director, Punjab Institute of Technology, main campus, Kapurthala.
- Item No. 39.6 : To discuss and finalize the layout plans and design of Parking area to be developed in the main campus, Kapurthala alongwith the boundary wall.
- Item No. 39.7 : To discuss and approve construction of boundary wall (balance portion) of Punjab Institute of Technology, main campus, Kapurthala.
- Item No. 39.8 : To discuss and review the requirements already approved for Convention Centre at main campus, Kapurthala and permit detailed designing and estimation.
- Item No. 39.9 : To discuss and approve the requirement of hostels for Punjab Institute of Technology, main campus, Kapurthala.
- Item No. 39.10 : Any other point with the permission of the Chair.

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# PUNJAB TECHNICAL UNIVERSITY, JALANDHAR

Agenda Note for the 39<sup>th</sup> meeting of the Standing Building Construction Committee.

**Item No. 39.1 :** To confirm the Minutes of 38<sup>th</sup> meeting of Standing Building Construction Committee held on 20.05.2013.

The minutes of 38<sup>th</sup> meeting of Standing Building Construction Committee held on 20.05.2013 were circulated on 24.05.2013. The minutes circulated are to be confirmed.

**Item No. 39.2 :** Action taken on various items discussed during previous meetings of Standing Building Construction Committee.

Action taken on various items discussed during previous meeting of Standing Building Construction Committee is as under:

- Based upon the discussions held in 38<sup>th</sup> meeting of Standing Building Construction Committee, PWD has invited tenders for the works pertaining to Punjab Institute of Technology, main campus, Kapurthala and Nandgarh, Bathinda. The tenders for main campus, Kapurthala works have been invited in three packages and whereas for PIT, Nandgarh, tenders have been invited in one package. All the works have been awarded.
- The contractors engaged for main campus, Kapurthala are under mobilization and whereas the works for PIT, Nandgarh have been started.
- The works of construction of boundary wall of Punjab Institute of Technology, Arniwala (Fazilka) are in progress.
- The payment to the Architect is being made after making reduction approved in the previous meeting.

**Item No. 39.3:** To discuss and approve the design basis reports submitted by the Architect for External Electrical works and Estate Public Health works in respect of Punjab Institute of Technology, main campus, Kapurthala.

The Architect has submitted reports in respect of External Electrical works and Estate Public Health works in respect of Punjab Institute of Technology, main campus, Kapurthala (copy enclosed). The same will be presented by the Architect in the meeting.

The matter is placed before the Committee for discussions and approval of the reports.

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**Item No. 39.4 :** To discuss and approve the design basis reports submitted by the Architect for External Electrical works and Estate Public Health works in respect of Punjab Institute of Technology, Nandgarh, Bathinda.

The Architect has submitted reports in respect of External Electrical works and Estate Public Health works in respect of Punjab Institute of Technology, Nandgarh, Bathinda. (copy enclosed). The same will be presented by the Architect in the meeting.

The matter is placed before the Committee for discussions and approval of the reports.

**Item No. 39.5 :** To discuss and finalize the layout plan of proposed office of Director, Punjab Institute of Technology, main campus, Kapurthala.

At the time of approval of plans of Punjab Institute of Technology, main campus, Kapurthala (campus area taken over from CAPARO society), it was approved that decision for use of the area earmarked for Administration will be taken later on. Now, it is proposed to establish Director's office in this area. The layout plans prepared by the Architect for the same is enclosed. The same will be presented by the Architect in the meeting.

The matter is placed before the Standing Building Construction Committee for discussions and approval please.

**Item No. 39.6 :** To discuss and finalize the layout plans and design of Parking area to be developed in the main campus, Kapurthala alongwith the boundary wall.

Presently, lot of difficulties are being faced by the guests and the visitors for parking their vehicles while visiting to PTU's main campus, Kapurthala. It is proposed to develop the area along the boundary wall, in front of proposed buildings of PIT, as parking area as this area cannot be used for construction. The layout plans prepared by the Architect for this area is enclosed. The same will be presented by the Architect in the meeting.

The matter is placed before the Standing Building Construction Committee for discussions and approval please.

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**Item No. 39.7 :** To discuss and approve construction of boundary wall (balance portion) of Punjab Institute of Technology, main campus, Kapurthala.

Some part of the boundary wall of Punjab Institute of Technology, main campus, Kapurthala (campus area taken over from CAPARO society) is still to be constructed. Presently barbed wire is fixed at this location. It is proposed to get this wall constructed on same design/pattern as that of the main campus.

The matter is placed before the Standing Building Construction Committee for discussions and approval please.

**Item No. 39.8 :** To discuss and review the requirements already approved for Convention Centre at main campus, Kapurthala and permit detailed designing and estimation.

This is to inform that there is a provision of one convention centre in approved Master Plan of PTU's main campus. The requirements and concept for the same has already been approved in 'Architectural Sub Committee meeting' held on 24.02.2009 and in 28<sup>th</sup> meeting of Standing Building Construction Committee with following salient features/facilities:

- Total Plinth Area : 7335 Sqm.
- Basement : Banquet Hall for catering services.
- Ground Floor : Seminar Hall with seating capacity of 260, Banquet for VIPs & Faculty, Auditorium of seating capacity of 927, VIP Suites and other support facilities like toilets, pantry, stores etc.
- First Floor : Balcony in Auditorium with seating capacity of 361, Committee room for 25 people, Cabins, lounges etc.

The matter is placed before the Standing Building Construction Committee to review the above requirements and approval for taking up the detailed designing and estimation is accorded please.

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**Item No. 39.9 : To discuss and approve the requirement of hostels for Punjab Institute of Technology, main campus, Kapurthala.**

Presently, post graduate courses are being run at Punjab Institute of Technology, main campus, Kapurthala and to take care of the further expansion programmes, construction of two college buildings, one seminar hall, one library and balance works of existing college building & two hostels has been taken up. The total strength of students planned for this campus is about 1800. Director, PIT, Kapurthala has indicated that this campus should have hostel facilities for atleast  $1/3^{\text{rd}}$  of the student strength i.e. for 600 students. As the hostels under construction have capacity of about 200 students, new hostels with a capacity of about 400 students are required for this campus.

The matter is placed before the Standing Building Construction Committee for discussions and approval please.

**Item No. 39.10 : Any other point with the permission of the Chair.**

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**DESIGN NOTE FOR EXTERNAL ELECTRICAL  
INSTALLATION WORKS  
FOR PUNJAB INSTITUTE OF TECHNOLOGY,  
MAIN CAMPUS, KAPURTHALA**

**ELECTRICAL LOAD ANALYSIS**

**PRELIMINARY ELECTRICAL LOAD CALCULATION**

S.NO.	DESCRIPTION	Area (Sq.ft)	Emergency load	Total Connected	Max. Demand (on Flr)	Diversity	Max. Demand (at Building)
			In kW	In kW	In kW		In kW
1	College Building 1	137,190.00	145.74	1,442.98	1,087.38	0.80	869.90
2	College Building 2	136,275.40	145.17	1,460.69	1,099.55	0.80	879.64
3	Library	49,227.00	388.07	388.07	285.45	0.80	228.36
4	Seminar Hall-1	2,853.55	1.78	62.13	44.21	0.80	35.37
	<b>OTHER LOADS</b>						
5	External Lighting (Assumed)		35.00	35.00	28	0.80	22.40
6	Plumbing Load (Assumed)		80.00	80.00	64	0.80	51.20
	<b>Total Load</b>	<b>325,545.95</b>	<b>795.77</b>	<b>3,468.86</b>			<b>2,086.87</b>
	<b>FUTURE PHASE</b>						
7	College Building 3	129568.48	137.65	1,362.81	1,090.25	0.80	872.20
8	College Building 4	132118.92	140.36	1,389.64	1,111.71	0.80	889.37
9	College Building 5	134420.16	142.80	1,413.84	1,131.07	0.80	904.86
10	Seminar Hall-2	4196.40	2.62	91.37	73.10	0.80	58.48
11	Seminar Hall-3	2853.55	1.78	62.13	49.71	0.80	39.77
12	Plumbing Load (Future)		100.00	100.00	80	0.80	64.00
	<b>Grand Total Load</b>	<b>403157.51</b>	<b>1,320.98</b>	<b>7,888.66</b>			<b>4,915.54</b>
	<b>Simultaneous Utilization Coefficient</b>					<b>0.70</b>	<b>3,440.88</b>

2

The following assumptions have been made in the calculations:

- Light and small power load : 2.5w per sft.
- Entire Library load is being considered on generator back-up
- For other buildings, 25% of lighting, fans and small power is being considered on generator back up
- All lifts in all blocks are considered on generator

Connected Load in Kw	: 7888.66	Emergency Connected Load in Kw	: 1320.98
Demand Load in kW	: 3440.88	Emergency Demand Load in Kw (Diversity@0.7)	: 924.68
Connected Load in KVA	: 9860.83	Emergency Connected Load in kVA	: 1651.22
Demand Load in kVA	: 4301.10	Emergency Demand Load in kVA	: 1155.86
Taking 85% efficiency	: 5060.12	Taking 85% efficiency	: 1359.83

#### Recommended Ratings & Configuration:

Transformers : 4nos x 1250KVA DG Sets : 3nos x 500KVA

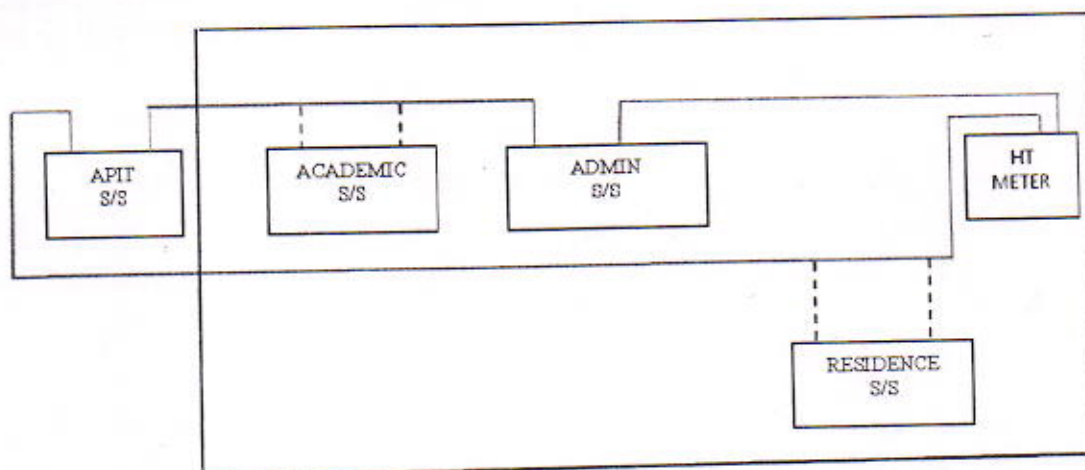
#### Phase-A (Initial Installation)

Transformers : 2nos x 1250KVA DG Sets : 2nos x 500KVA

#### HT Metering

HT Meter for 11kV HT supply was installed and commissioned during Phase-1 at the North East corner of the site.

11 kV Ring Main system was designed with provision of individual substations for each functional block/ phase i.e. Administration Block, Academic Block and Residence Block. APIT school was added to the ring main system in year 2011.



2



# PUNJAB TECHNICAL UNIVERSITY, MAIN CAMPUS, KAPURTHALA

## DESIGN NOTE FOR PLUMBING AND FIRE FIGHTING

- 1 2 nos. Domestic Water Under ground tanks of capacity 225 KL each are available at site. So the total storage available is  $225 \times 2 = 450 \text{KL}$ .
- 2 Water requirement for the existing administration building is 43 KLD. Water requirement for new blocks (2 college buildings - 6 colleges, library and seminar hall) is 95 KLD.
- 3 Existing underground tank is enough. No new under ground tanks are required.
- 4 There are 2 working + 1 standby domestic water supply pumps of capacity 486 lpm @ 58 m head each.
- 5 The pump capacities are enough for pumping water from the underground tanks to the over head tanks of the old as well as the new blocks.
- 6 Garden hydrant line will be extended from the existing garden hydrant pipe line as also done for phase I.
- 7 There are 3 nos. borewells (2 x 7.5 HP + 1 x 12.5 HP). These are enough to feed the demand of the current as well as new development.
- 8 An existing STP is present for the current building at PTU of capacity 30 KLD which is enough for the existing administration building.
- 9 An STP of 30KLD exists for buildings in Caparo compund.
- 10 The additional STP capacity required for new buildings in PTU compound and APIT is 76 KLD and 18 KLD respectively. Total STP additional capacity required is 94 KLD.
- 11 It is proposed that 2 new STPs in modules of 50 KLD each may be established near the APIT STP. One module to be constructed right now and the next one to be constructed as and when required. The technology of STP should be same as that of the existing STP.
- 12 Rain water harvesting system is planned for the collected rain water for the site. The over flow of each RWH Pit would be directed to the next RWH Pit. Overflow arrangement from the last RWH pit will be made upto the nearby canal.
- 13 Fire fighting ring main around the new blocks will be connected to the existing fire ring main.
- 14 Existing fire pumps will be used.
- 15 Water treatment scheme will be suggested after the detailed water quality analysis for potability is received from a CPCB approved lab (Physical, chemical and bacteriological parameters required).

8

**Punjab Institute of Technology, Nandgarh (Bathinda)**

**DESIGN NOTE FOR ELECTRICAL WORKS (EXTERNAL)**

**MAIN ESS.**

- 1 Total Connected Load of the College Building is 480KW.
  - 2 Demand Load is 302KW.
  - 3 Transformer capacity comes out to be 400 KVA for the college block
  - 4 **Two Alternative schemes are proposed for the external electrical system**
- i.) Unitized Sub station (C.S.S) is proposed for college building & each future block thereafter as per phasing schedule. Please see the drawing ---- (Sub station Layout-op-1)
- or
- ii.) Centralized Sub station is created with Space provision for future expansion , This type of scheme consists of HT VCB, Oil Type Transformers, LT Panel for present as well as future blocks. Please see the drawing ---- (Sub station Layout-op-2)

**Recommendation-** It is recommended that the scheme with C.S.S may be adopted for flexibility & space saving.

**DG Backup**

- 1 **As per the PTU Guidelines for the DG Backup**
- i.) 50 % of the Lighting and Fan Load of the entire college block has been considered to be on the DG Back up
- ii.) Reading Hall, Seminar Hall & Computer Lab with full Back-up (including HVAC Load) has been considered on DG Backup.
- 2 The Demand Load on Generator backup comes out to be 138 KW.
  - 3 DG Set proposed is of Capacity 225 KVA

2

**Punjab Institute of Technology, Nandgarh (Bathinda)**

**DESIGN NOTE FOR PLUMBING AND FIRE FIGHTING**

- 1 Total water requirement is 38 KLD.
- 2 Underground water storage for 60 KL Raw and 60 KL Treated water is required. This would take care of atleast 3 days of water requirement (as suggested by Nandgarh PWD). This tank would be designed in such a way that future increase in storage is possible.
- 3 Water treatment scheme will be suggested after the detailed water quality analysis for potability is received from a CPCB approved lab (Physical, chemical and bacteriological parameters required).
- 4 By-pass pipe line for overhead tank filling directly from the bore-well will be provided (as suggested by Nandgarh PWD).
- 5 STP of 30 KLD capacity is proposed.
- 6 Atleast 2 bore-wells will be required.
- 7 Garden hydrant system will be connected directly to the bore-wells.
- 8 Rain water harvesting system is planned for the collected rain water for the site. The over flow of each RWH Pit would be directed to the next RWH Pit. Overflow arrangement from the last RWH pit will be made upto the the external road.

2

10'

KEY PLAN



PUNJAB TECHNICAL UNIVERSITY PHASE III

PROJECT: PUNJAB TECHNICAL UNIVERSITY PHASE III  
 ARCHITECT: Archigroup Architects (regd.)  
 Scale: 1/8" = 1'-0" (1:200)  
 Project No: ATU/11/0001  
 DRAWN BY: [Name]  
 CHECKED BY: [Name]  
 DATE: 11/11/13  
 SHEET NO: 001 OF 01

NO.	REVISIONS	DATE
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		

CLIENT: PUNJAB TECHNICAL UNIVERSITY

ARCHITECT: Archigroup Architects (regd.)

Scale: 1/8" = 1'-0" (1:200)

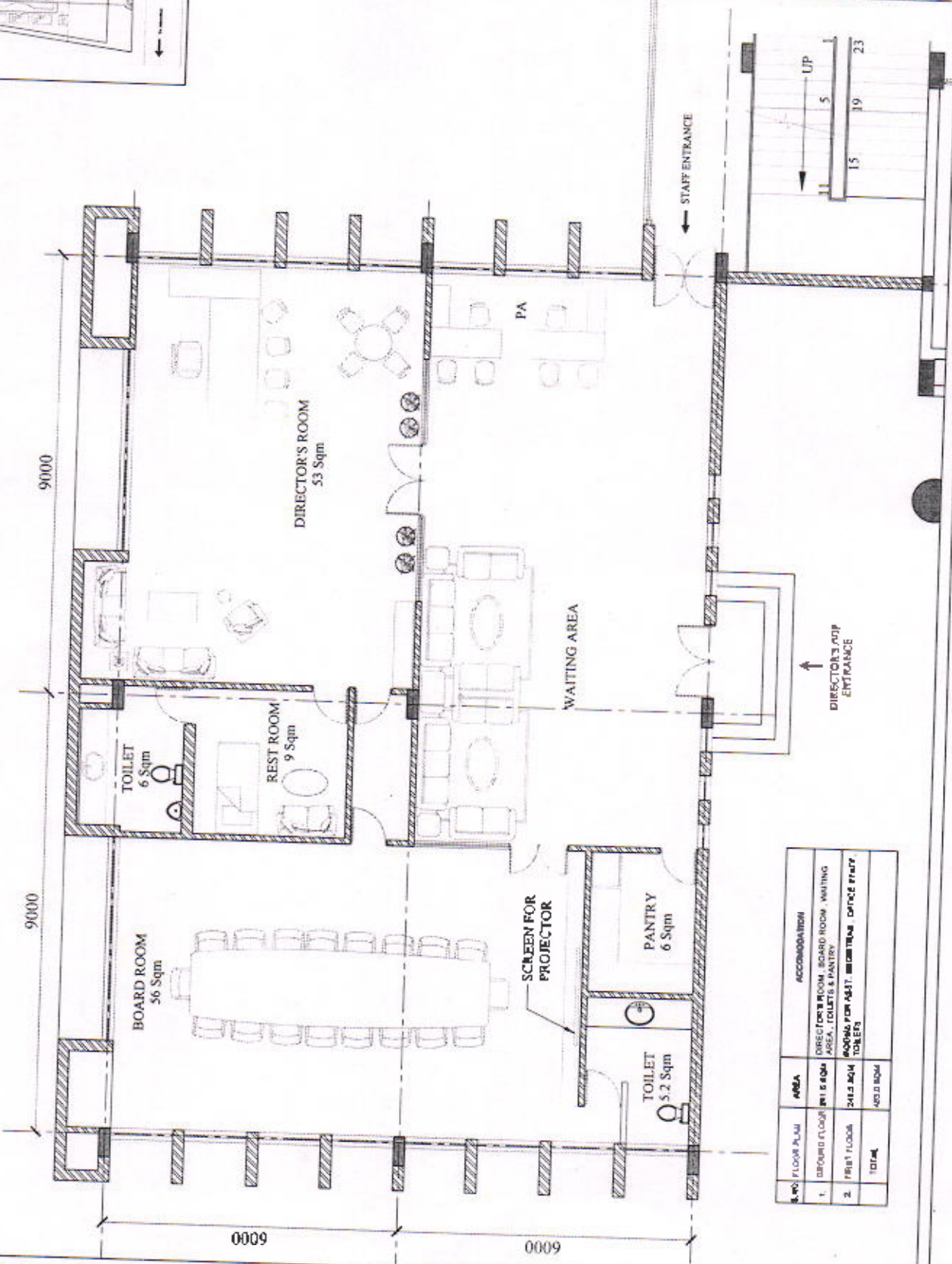
Project No: ATU/11/0001

DRAWN BY: [Name]

CHECKED BY: [Name]

DATE: 11/11/13

SHEET NO: 001 OF 01



S.NO	FLOOR PLAN	AREA	ACCOMMODATION
1.	GROUND FLOOR	481.8 SQM	DIRECTOR'S ROOM, BOARD ROOM, WAITING AREA, TOILETS & PANTRY
2.	FIRST FLOOR	241.2 SQM	OFFICES FOR ASST. PROFESSORS, OFFICE PARTY TOILETS
	TOTAL	723.0 SQM	

KEY PLAN

9000

9000

6000

6000

2m WIDE  
CORRIDOR

STAFF OFFICES  
78 Sqm

ASST. REGIST.  
15 Sqm

ASST. REGIST.  
15 Sqm

ASST. REGIST.  
15 Sqm

PA ROOM  
8 Sqm

PA ROOM  
8 Sqm

PA ROOM  
8 Sqm

F TOILET  
8 Sqm

M TOILET  
8 Sqm

STAFF ENTRANCE

PROJECT: Punjab Technical University Jalandhar Phase-III

ARCHITECT: Archigroup Architects (regd.)

DATE: 15.08.2011

SCALE: 1:100

NO. OF SHEETS: 10

SHEET NO: 01

TITLE: ADMIN BLOCK - FIRST FLOOR PLAN

DATE: 15.08.2011

SCALE: 1:100

NO. OF SHEETS: 10

SHEET NO: 01

ADMIN BLOCK  
FIRST FLOOR PLAN

