

Initial Environmental Examination

September 2017

India: Himachal Pradesh Skill Development Project
— Construction of Women's Polytechnic in Rehan,
Kangra (Package No. HPSPDP/PWD-01)

CURRENCY EQUIVALENTS

(as of 4 September 2017)

Currency unit	-	Indian rupee/s (₹)
₹1.00	=	\$0.01567
\$1.00	=	₹63.8100

ABBREVIATIONS

ADB	-	Asian Development Bank
AICTE	-	All India Council of Technical Education
ASI	-	Archaeological Survey of India
CHC	-	community health center
CLC	-	city livelihood center
CPCB	-	Central Pollution Control Board
DOHE	-	Department of Higher Education
DOLE	-	Department of Labor and Employment
DOP	-	Department of Planning
DOTE	-	Department of Technical Education, Vocational & Industrial Training
DOUD	-	Department of Urban Development
DORD	-	Department of Rural Development
EIA	-	environmental impact assessment
EMP	-	environmental management plan
ESMF	-	environmental and social management framework
FSI	-	Forest Survey of India
GOHP	-	Government of Himachal Pradesh
GRC	-	Grievance Redress Committee
HPKVN	-	Himachal Pradesh Kaushal Vikas Nigam
HPSDP	-	Himachal Pradesh Skill Development Project
IEE	-	initial environmental examination
MCC	-	model career center
MOEF	-	Ministry of Environment, Forests and Climate Change
PHC	-	primary health center
PIU	-	Project Implementation Unit
PMC	-	project management consultant
PMU	-	Project Management Unit
PWD	-	Public Works Department
RLC	-	rural livelihood centers
SPS	-	Safeguard Policy Statement
TVET	-	technical and vocational education and training

WEIGHTS AND MEASURES

µg	–	microgram
dB(A)	–	weighted decibel
ha	–	hectare
km	–	kilometer
km ²	–	square kilometer
m	–	meter
m ²	–	square meter
MW	–	megawatt

NOTES

- (i) The fiscal year (FY) of the Government of India ends on 31 March. “FY” before a calendar year denotes the year in which the fiscal year ends, e.g., FY2017 ends on 31 March 2017.
- (ii) In this report, “\$” refers to US dollars.

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EXECUTIVE SUMMARY

1. At the request of the Government of India and the Government of Himachal Pradesh), the Asian Development Bank (ADB) will offer \$80 million in loan assistance to modernize and reform Himachal Pradesh's technical and vocational education and training (TVET) programs, and scale up training capacity. The Department of Planning (DOP) in Himachal Pradesh will be the executing agency for the proposed Himachal Pradesh Skill Development Project (HPSDP). The Himachal Pradesh Kaushal Vikas Nigam (HPKVN); Department of Technical Education, Vocational and Industrial Training (DOTE); Department of Higher Education (DOHE); and Public Works Department (PWD) will be the implementing agencies. The HPKVN will also function as the project management unit (PMU) for HPSDP.

2. The impact of HPSDP will be a more productive work force in Himachal Pradesh equipped with market-relevant technical and vocational skills created, in alignment with the Himachal Pradesh Skill Development Policy (*Him Kaushal*), 2016. The outcome will be improved employment and livelihood development opportunities for those trained under the project. This will be achieved through the following outputs:

- Output 1: TVET in Himachal Pradesh improved and aligned to national standards.
- Output 2: Market-aligned skills ecosystem created.
- Output 3: Access to quality training institutes improved.
- Output 4: TVET institutional structure improved.

3. Output 3 of the project will involve construction of new training facilities and upgrading of some existing buildings to improve the access of TVET programs across Himachal Pradesh.¹ The new facilities include construction of seven city livelihood centers (CLCs), seven rural livelihood centers (RLCs), and one polytechnic for women to be constructed in Rehan, district of Kangra. Eleven employment exchanges will be upgraded into model career centers (MCCs). One new MCC will be established at Hamirpur.

4. GOHP has assured the Asian Development Bank (ADB) that the proposed new infrastructure will be built, either within premises owned by the government, or on vacant and unencumbered land owned by the government. No new land will be acquired, nor will anyone be displaced in anticipation of ADB funding. Sites located within or near environmentally sensitive areas and tribal areas of Himachal Pradesh will not be considered. No project-related activity will have any adverse impact on indigenous peoples or impede their cultural and human rights. Hence, from a safeguards perspective, the project is categorized as B for environment, C for involuntary resettlement, and C for indigenous peoples. The proposed project categorization has been reconfirmed by an experienced ADB environment and social safeguards consultant, who has already visited 15 sites identified by the Himachal Pradesh government to date.²

5. The Women's Polytechnic at Rehan in Kangra district is included in the advance contracting. This Women's Polytechnic will help female students of Himachal Pradesh in

¹ A detailed Environmental and Social Management Framework (ESMF) has been prepared in line with ADB's Safeguard Policy Statement (SPS), 2009, to guide the executing agency and implementing agencies in mainstreaming environmental and social concerns into the design and implementation phases of HPSDP.

² In addition to the ADB environment and social safeguards consultant, other experts including an architect, labor economist, gender specialist, plus relevant consultants from the consulting firm engaged under the project preparatory technical assistance project (IND TA 8760), have also screened these sites. ADB. 2015. *Technical Assistance to India for Supporting Skill Development in Himachal Pradesh*. Manila (TA 9060-IND).

attaining technical education to get gainful employment. The proposed Women Polytechnic will have a built up area of 13385.84 m². The total site area of Women's Polytechnic is 17511 m². Total ground floor coverage is 6082.19 m². The built-up area of polytechnic is 13385.94 m². The proposed Women's Polytechnic will be operated by DOTE. The specialization for Diploma courses that will be available are (a) Civil Engineering, (b) Electrical Engineering, (c) Computer Engineering and (d) Architect Assistantship. The ownership of Government Women Polytechnic site is with the DOTE. The carpet area of main office, electrical engineering department, Civil Engineering Department, Computer Engineering Department, Architecture Assistantship Department, Common facility area, and workshop blocks are 1366.6, 758.38, 757.44, 683.33, 715.46, 500.26, and 710.58 m² respectively. The hostel facility has been planned for about 120 girls. The area available for landscaping is 2268.38 m² and for tree and shrubs plantation is 984.41 m². All the buildings have been designed to cater for 24/7 occupancy. The electrical load consumption has been estimated as 211kVA.

6. The architectural expression of the Polytechnic building is in harmony with the local style of Himachal Pradesh—suitable for cool weather, and long rainy season. The building aims to evoke a learning-friendly atmosphere that will attract the trainees. There will be ramps and specially designed toilets to make it easy for people with disabilities. The Polytechnic buildings will have adequate number of modern sanitation and drinking water facilities. Concrete gutters at the end of steel sheeting roofs will direct the rainwater to underground rain water harvesting tanks. The clean rainwater run-off can be reused for horticultural purposes and replenishing groundwater. The storm water will be drained through soak pits for ground water recharge.

7. The proposal includes for the provision of solar power panels, the solar energy through these solar panels will be used for water heating in the Polytechnic campus. Any waste generated on account of operation and maintenance of solar heating system will be taken up by the supplier, who will also be maintaining the system, for possible recycle and reuse. The total estimated cost of Women's Polytechnic at Rehan is INR463.7 million (US\$ 6.83 million). The construction period will be 24 months.

8. This initial environment examination (IEE) report provides details about the site, the potential environmental impact of the civil works, and ways of mitigating and addressing these.³ Since the site is near Rehan village, there is no protected or reserved forest area nearby. There is no natural stream or river near the subproject site. The subproject site is on a plain terrain. There are no protected areas (national parks, bird sanctuaries, tiger reserves, etc.); wetlands; mangroves; or estuaries in or near the subproject location. The site is in a relatively open area. Therefore, there are no ambient air quality and noise level issues.

9. The environmental impacts due to construction and operation of Women's Polytechnic have assessed minor and will be limited mostly during construction phase. These routine and localized effects associated with construction and operation of the new buildings can be mitigated easily by following the measures laid down in the **environment management plan (EMP)** included in the IEE. The EMP will be included in civil work bidding and contract documents. **The IEE confirms that the subproject as environment category “B”**. No further special study or

³ Local stakeholders were involved in developing the IEE through on-site discussions and public consultation. Their views were incorporated into the IEE and the design of the subproject. The IEE will be made available at public locations in the town such as municipal office building and district administration office. It will be disclosed to a wider audience via the ADB, DOUD, and HPKVN websites.

detailed environmental impact assessment (EIA) needs to be undertaken to comply with the ADB SPS or Government of India EIA Notification, 2006.

10. The PWD (one of the implementing agencies as mentioned earlier) will be responsible for overall planning and implementation of the civil works for this subproject. It will ensure that IEE and EMP prepared for this subproject and ESMF are followed during implementation. The project management consulting (PMC) firm to be engaged under the proposed loan will have experienced environment and social safeguards experts. These experts will assist PWD in compliance of EMP implementation during the construction phase. The PMC will also assist PWD and HPKVN in preparing semi-annual safeguards monitoring reports as required by ADB.

I. INTRODUCTION

A. Background

1. **Location.** The subproject site for the proposed Women's Polytechnic at Rehan village is situated in the Kangra district of Himachal Pradesh. The latitude and longitude of the subproject site are 32.172925N and 75.926870E, respectively. The nearest rail head at Pathankot is 37 kilometers (km) away. Rehan is well connected by roads with all the important places in Himachal Pradesh like Kangra (71.2 km), Chamba (98), Dalhousie (81), Nadaun (90.6 km), Shimla (260 km), Palampur (90 km), Pathankot (37km), Dharamshala (63 km) and Hamirpur (116 km). The Kangra district is the most populous district of Himachal Pradesh. The elevation of project site is about 483 m above mean sea level. The Beas is the major river of the district and contributes to the fertility of plains in the district. Kangra's neighboring districts are Gurdaspur district of Punjab in the West, Lahaul Spiti in the North, Una and Hamirpur in the South, and Kullu in the east. The district lies between the parallels of 31° 21' to 32° 59' N and 75° 47' 55" to 77° 45' E.

2. **Present status of site.** The subproject site at Rehan is plain land. The site belongs to the Department of Technical Education, Vocational and Industrial Training (DOTE), Government of Himachal Pradesh. There are no permanent or temporary structures on the site. Since the site has been lying vacant and unused, small shrubs have grown over time. There are some Eucalyptus trees at one of boundary of the site. Outside the project site, there is one private Industrial Training Institute, residential houses and one seasonal storm water drainage channel. Some photos of the site are shown in **Figure 1**.

Figure 1: Photographs of Women's Polytechnic Site at Rehan





B. Compliance with India’s Environmental Regulatory Framework

3. India’s environmental rules and regulations, as relevant for this proposed subproject, are shown in **Table 1**. The Environmental Impact Assessment (EIA) notification, 2006 by the Ministry of Environment, Forests and Climate Change (MOEF), Government of India specifies the requirements for mandatory environmental clearances. All projects and activities are broadly categorized into two categories—category A and category B, based on the spatial extent of potential impacts on the environment, human health, and natural and human-made resources.⁴

⁴ All projects or activities included as category A in the schedule, including expansion and modernization of existing projects or activities and change in product mix, will require prior environmental clearance from MOEF, Government of India based on recommendations of an expert appraisal committee to be constituted by the central government for the purposes of this notification. All projects or activities included as category B in the schedule, including expansion and modernization of existing projects or activities as specified in subparagraph (ii) of paragraph 2; or change in product mix as specified in subparagraph (iii) of paragraph 2, but excluding those that fulfill the general conditions stipulated in the schedule, will require prior environmental clearance from the state or union territory Environment Impact Assessment Authority, which shall base its decision on the recommendations of a state or union territory-level expert appraisal committee to be constituted for this notification. In addition, general condition of the notification specifies that any project or activity specified in category B will be treated as category A, if located in whole or in part within 10 km from the boundary of (i) protected areas notified under the Wild Life Protection Act, 1972; (ii) critically polluted areas as notified by the Central Pollution Control Board from time to time; (iii) notified eco-sensitive areas; and (iv) interstate boundaries and international boundaries.

However, MOEF's Office Memorandum (F. No. 19-2/2013-IA- III), dated 9 June 2015, and exempts all educational and training institutes from obtaining prior environmental clearance. Since all the training facilities to be constructed or upgraded under HPSPDP, including this proposed Women's Polytechnic at Rehan, are meant for educational and training purposes, they will not require any prior environmental clearance according to the environmental rules and regulations of India. Further, as shown in **Table 1**, most other rules pertaining to India's Ancient Monuments and Archaeological Sites and Remains Act, 1958; the Wildlife Conservation Act, 1972, amended in 2003 and 2006; and the Forest (Conservation) Act, 1980, will not apply to this subproject. Only some clearances will be required from the Himachal Pradesh State Pollution Control Board for the construction phase of the subproject.

Table 1: Environmental Regulatory Compliance

Subproject	Applicability of Acts and Guidelines	Compliance Criteria
Construction and operation of Women Polytechnic at Rehan in Kangra district of Himachal Pradesh	The EIA notification, 2006 (and its subsequent amendments till date) provides for categorization of projects into category A and B, based on extent of impacts.	The subproject is not covered in the ambit of the EIA notification (amended till date), either as a category A or Category B project. As per the Office Memorandum dated 9 June 2015 of Ministry of Environment, Forests and Climate Change, educational and training institutions are exempted from prior environmental clearance. As a result, the categorization, and the subsequent environmental assessment and clearance requirements, either from the state or the Government of India, are not triggered. – Not Applicable
	The Ancient Monuments and Archaeological Sites and Remains Act, 1958, and the rules, 1959 provide guidance for carrying out activities including conservation, construction and reuse in and around the protected monuments.	The Women Polytechnic site at Rehan is not close to any monument which is protected by the ASI. Hence, no clearance is needed from ASI. – Not Applicable
	Water (Prevention and control of pollution) Act, 1974 and Air (prevention and control of pollution) Act, 1981	CFE and FO from the State Pollution Control Board will be required during construction for installation of diesel generator set, hot mix plant, and concrete batching plant. For the operation phase, no CFO or CFE will be required. – Applicable for construction phase
	The Wildlife Conservation Act, 1972, amended in 2003 and 2006, provides for protection and management of Protected Areas.	No wildlife protected areas nearby. – Not Applicable
	Forest (Conservation) Act, 1980	This act provides guidelines for conservation of forests and diversion of forest land for non-forest use. It describes the penalties for

Subproject	Applicability of Acts and Guidelines	Compliance Criteria
		contravention of the provisions of the Act. If forest land has to be acquired for the project, clearance is required from the Forest Department. No forest land is required for this subproject. Hence, this is not applicable. – Not Applicable

ASI = Archaeological Survey of India, CFE = consent for establishment, CFO = consent for operation, EIA = environmental impact assessment.

Source: Asian Development Bank.

C. Asian Development Bank's Environmental Safeguard Policy Principles

4. Since the proposed HPSDP is being funded by the ADB, it has to comply with its Safeguard Policy Statement (SPS), in addition to India's own environmental laws and regulations. The environmental safeguard policy principles embodied in the SPS aim to avoid adverse impacts on the environment and on affected people and/or communities; minimize, mitigate and/or compensate for adverse project impacts, if unavoidable; help borrowers to strengthen their safeguard systems, and to develop their capacity in managing the environmental and social risks. The SPS categorizes all projects into three environmental categories (A, B or C) based on their potential impacts.⁵ The categorization form has been completed to confirm category of subproject (**Appendix-1**). Similarly, ADB's Rapid Environmental Assessment checklist method was followed to assess the potential impact of the proposed subproject at Rehan (**Appendix 2**). As will be explained above, the subproject has been categorized as 'B' category project. Accordingly, this IEE has been prepared to address the potential impacts in line with the requirements for category B projects. The IEE was based mainly on baseline data generation on environmental parameters and secondary sources of information and field reconnaissance surveys. Stakeholder consultation was an integral part of the IEE. An environmental management plan (EMP) outlining the specific environmental measures to be adhered to during implementation of the subproject is included in the IEE. The climate risk screening has also been carried out and it has been found that climate related risk is 'low' for the subproject (**Appendix-3**).

D. Review and Approval Procedure

5. For category B projects, the draft environmental status report is reviewed by the relevant ADB departments and the executing agency. Additional comments are incorporated into the final documents as relevant. These are reviewed by the executing agency and ADB safeguards team. The executing agency then officially submits the IEE report to ADB for consideration by the Board

⁵ As per the SPS, projects are assigned to one of the following four categories: (i) **Category A**. A proposed project is classified as category A if it is likely to have significant adverse environmental impacts that are irreversible, diverse, or unprecedented. These impacts may affect an area larger than the sites or facilities subject to physical works. An environmental impact assessment is required. (ii) **Category B**. A proposed project is classified as category B if its potential adverse environmental impacts are less adverse than those of category A projects. These impacts are site-specific, few if any of them are irreversible, and in most cases mitigation measures can be designed more readily than for category A projects. An initial environmental examination is required. (iii) **Category C**. A proposed project is classified as category C if it is likely to have minimal or no adverse environmental impacts. No environmental assessment is required although environmental implications need to be reviewed (iv) **Category FI**. A proposed project is classified as category FI if it involves investment of ADB funds to or through a financial institution.

of Directors. The final report is made available worldwide by ADB, via the depository library system and the ADB website.

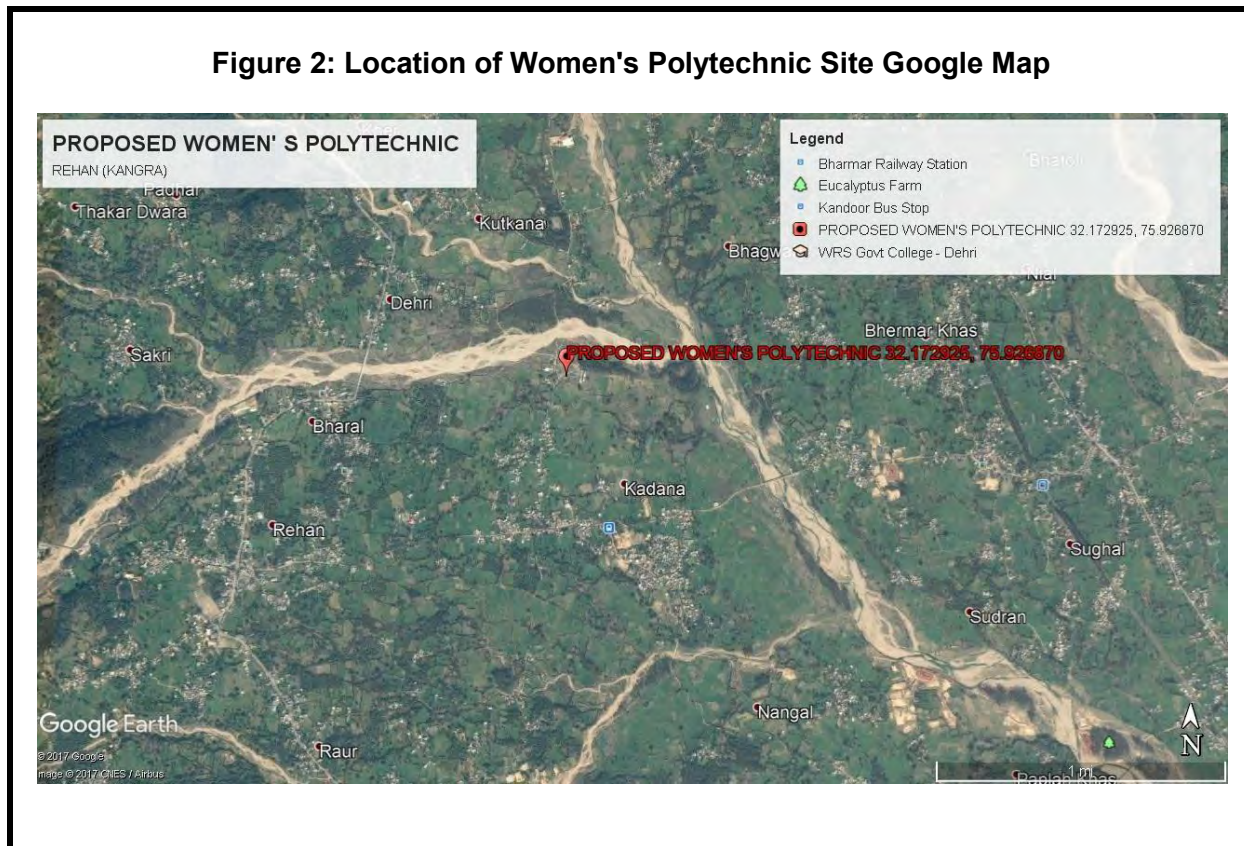
E. Report Structure

6. This report contains eight sections: (i) introduction; (ii) description of project components; (iii) description of the existing environment around the subproject; (iv) environmental impact and mitigation measures; (v) EMP; (vi) processes for public consultation and information disclosure; (vii) findings and recommendations; and (viii) conclusions.

II. DESCRIPTION OF THE PROJECT COMPONENTS

A. Components of the Subproject

7. The location of the Women's Polytechnic site and its surroundings are shown in **Figures 2 and 3**. Some subproject site photographs have been shown in **Appendix-4**. **Table 2** summarizes the need for the subproject, and is proposed components.



Source: Asian Development Bank.

Figure 3: Location of Women's Polytechnic Site



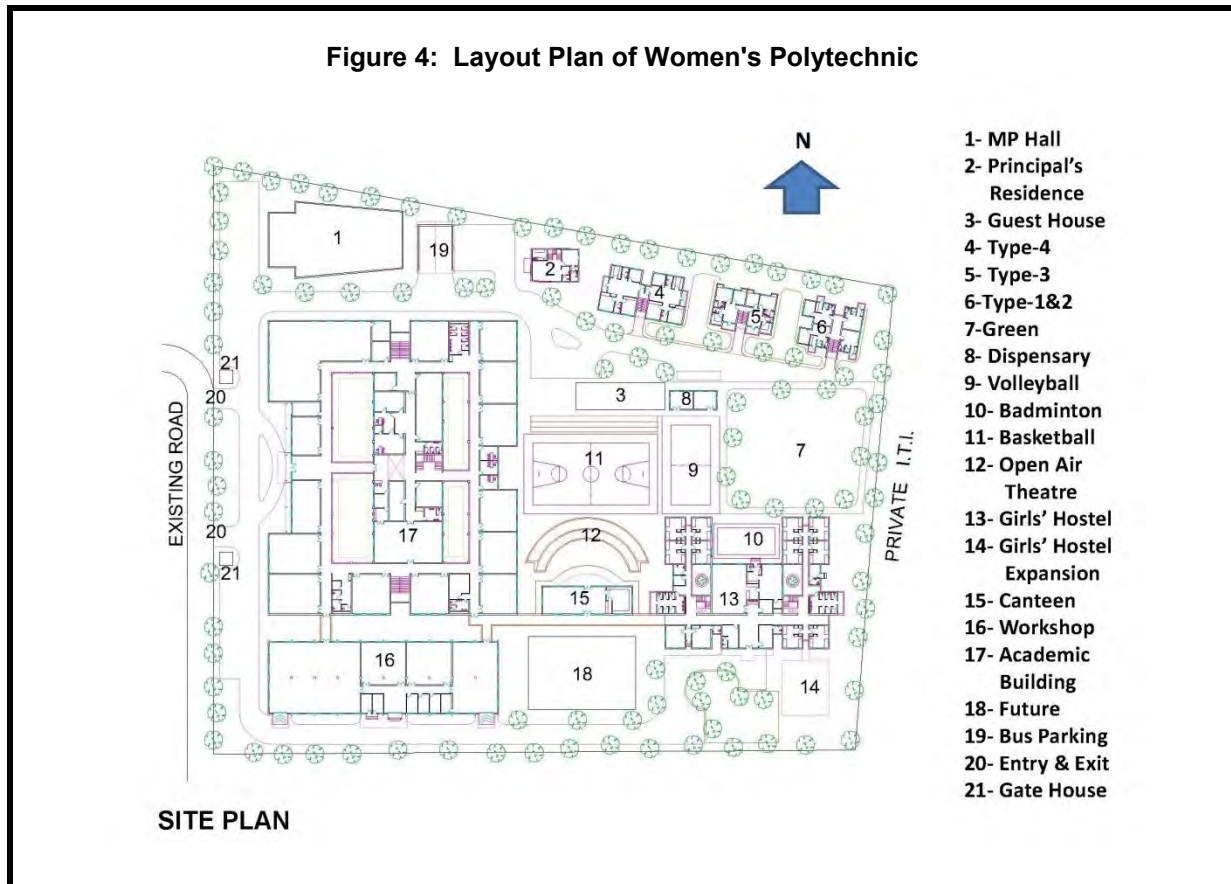
Table 2: Description of the Subproject Components

Description	Need of the Project	Proposed Components
<p>A Women's Polytechnic is proposed at Rehan village, in Nurpur Tehsil of Kangra district in the State of Himachal Pradesh</p>	<ul style="list-style-type: none"> • The Women Polytechnic will help female students to peruse various diploma courses for skill development. This will help them to get gainful employment and inclusive growth of Himachal Pradesh as a State. • In Kangra district and surrounding districts of Himachal Pradesh, there is no Women Polytechnic. Hence this proposed Women Polytechnic will be convenient for female students of the region to join and complete the courses. The hostel facilities will also enable out-station students from small towns and remote villages to enroll for various courses offered by the Polytechnic. 	<p>The main subproject components include:</p> <ul style="list-style-type: none"> • The Women's Polytechnic will comprise of Administrative Block , Electrical Engineering Department, Civil Engineering Department, Computer Engineering Department, Architectural Assistantship Department, Common facilities (Computer Center and Drawing Hall) and Amenities Block (Girls' Common Room, Stationery , Bank and NCC Room) and Workshop Block. • Residential areas will include Principal's Residence, Type -1, Type-2, Type-3 and Type-4 Quarters and Girls' Hostel and Guest House. • Carpet areas of Administrative Block , Electrical Engineering Department, Civil Engineering Department, Computer Engineering Department, Architectural Assistantship Department, Common facilities (Computer Center and Drawing Hall) and Amenities Block (Girls' Common Room, Stationery , Bank and NCC Room) and Workshop Block are 1366.7, 758.38, 757.44, 683.33, 715.46, 500.26, 165.66 and 710.68 m² respectively. These areas are more than All India Council of Technical Education (AICTE) norms. • The other facilities include bus parking, dispensary, canteen, open air theater, sports facilities, etc. • Septic tanks have been designed for 350 users (3 tanks for 50 users' capacity each and two tanks for 100 user capacity each). • Solar panels will be installed on the roof for the water heating. • The total electricity load has been estimated as 211 kVA • Water consumption has been estimated as 37935 liters per day. Water source will be from the ground through bore well. The designed Over Head storage tank capacities are 4x2000 liters (for Hostels), 1x40,000 liters (for academic block), 24x1000 liters (for staff quarters) and 1x2000 liters (for Principal Quarter). • Total rain water underground storage planned is 3x24000 liters, and 2x6000 liters and one overhead storage tank of 25000m³. The underground storage tanks will help in ground water recharge.

Description	Need of the Project	Proposed Components
		<ul style="list-style-type: none"> The solid waste generated will be integrated with the waste disposal system of local Rehan village.

AICTE=All India Council of Technical Education
Source: Asian Development Bank.

8. The layout plan of Polytechnic institute is shown below in **Figure 4**. The site plans and 3D views have been shown in **Figure-5**.



Source: Asian Development Bank.

**Figure 5: Site Plan of Women's Polytechnic at Rehan
3D View of Polytechnic Building**



3D VIEW

SHOWING FUTURE EXPANSION



VIEW FROM REAR



REAR OF ACADEMIC BLOCK FROM SPORTS AREA

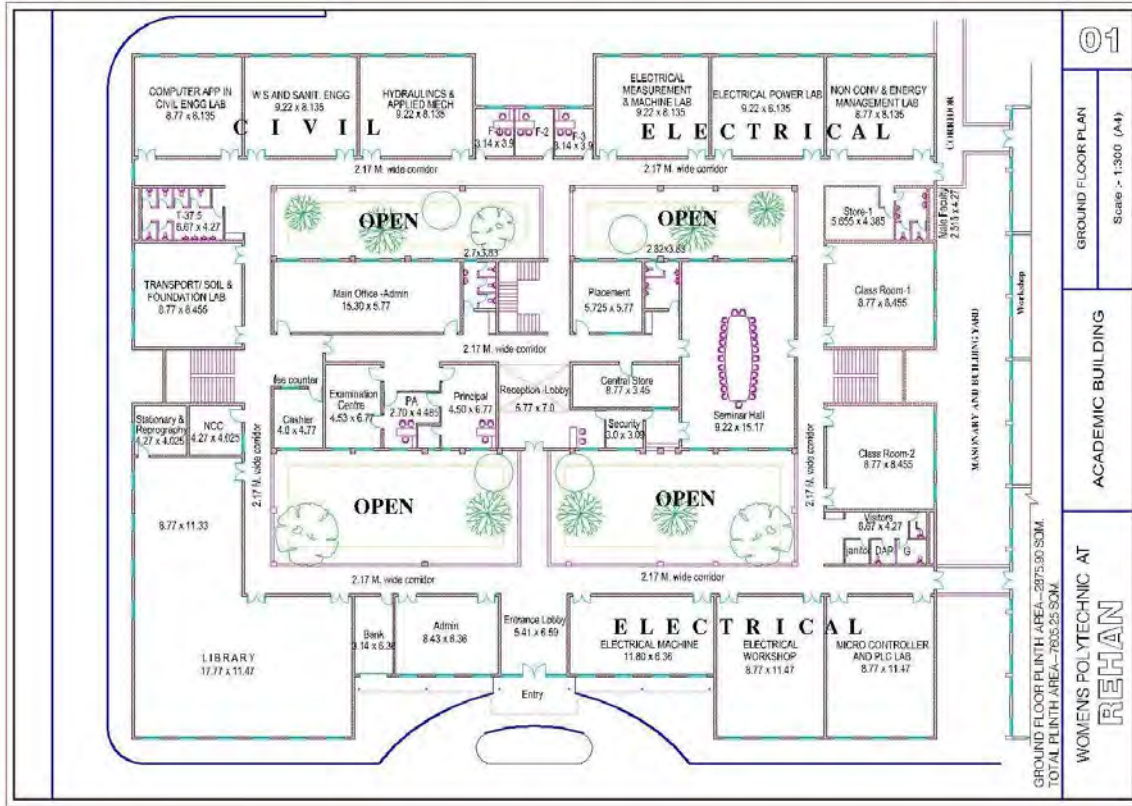


CONNECTING CORRIDOR TO HOSTEL



VIEW FROM PRIVATE ITI

Floor Plans of Academic Building



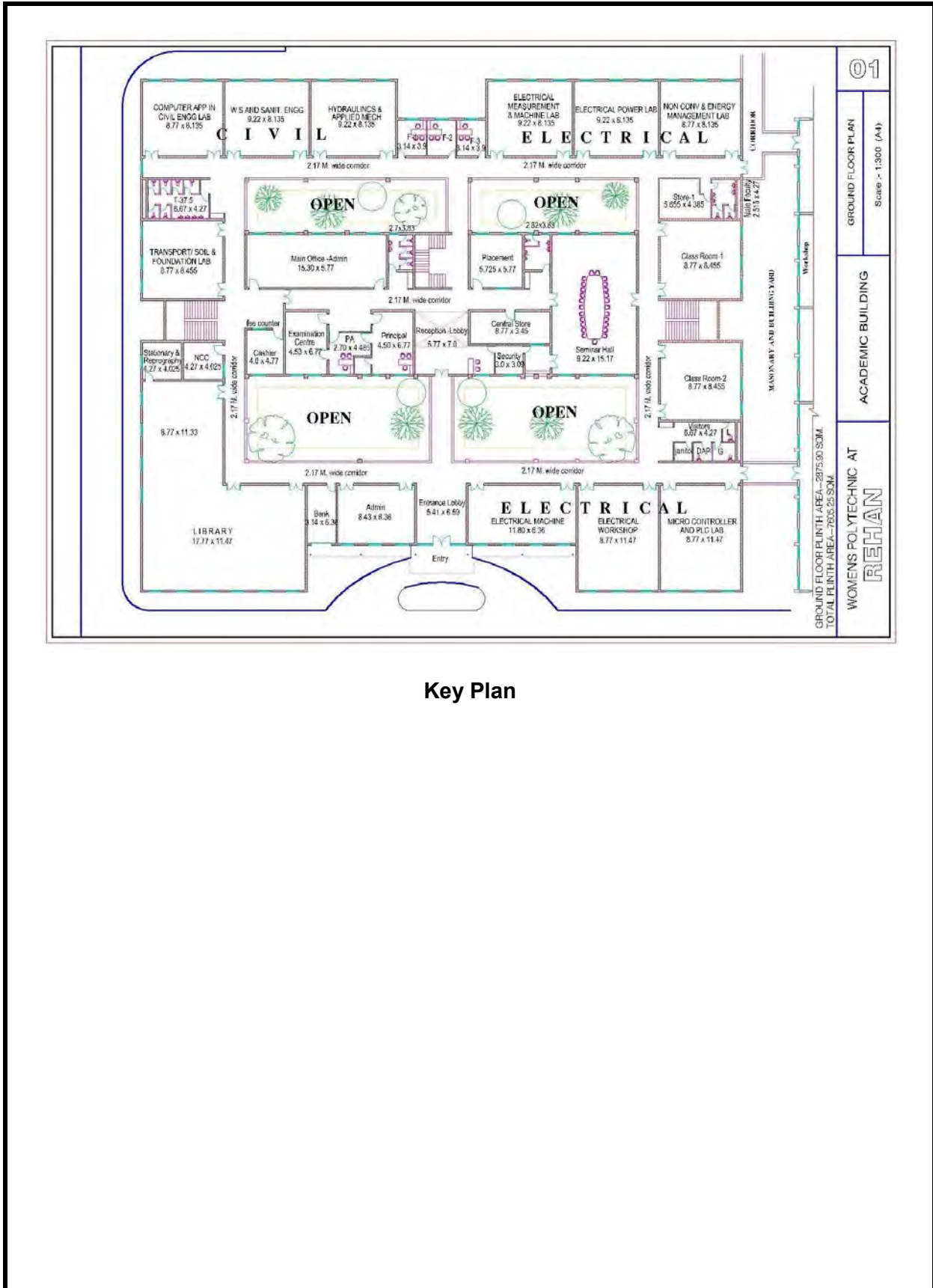
01

GROUND FLOOR PLAN
Scale - 1:300 (A4)

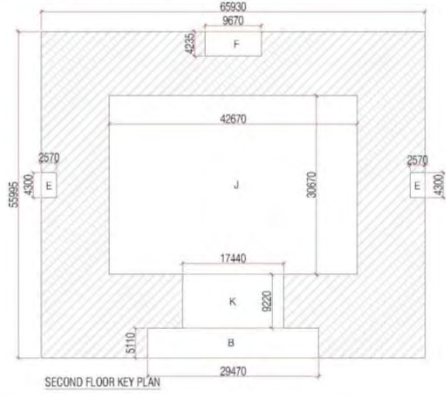
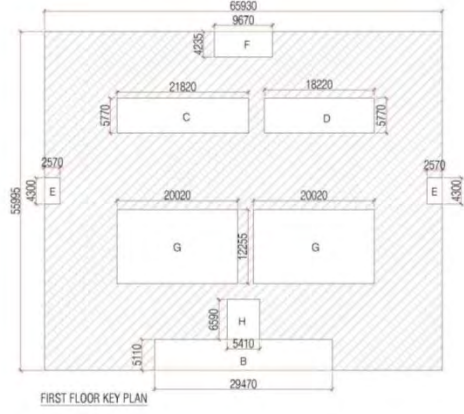
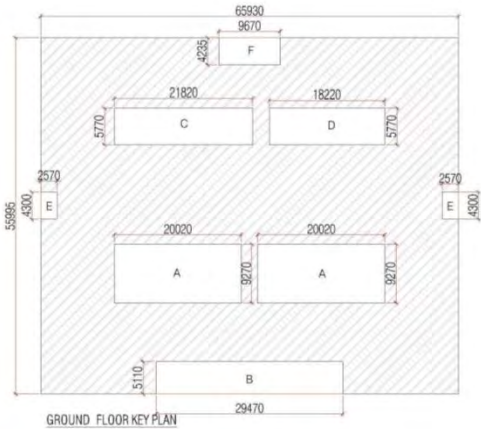
ACADEMIC BUILDING

WOMENS POLYTECHNIC AT
RIEHAN

GROUND FLOOR PLINTH AREA - 2875.30 SQ.M.
TOTAL PLINTH AREA - 7855.25 SQ.M.



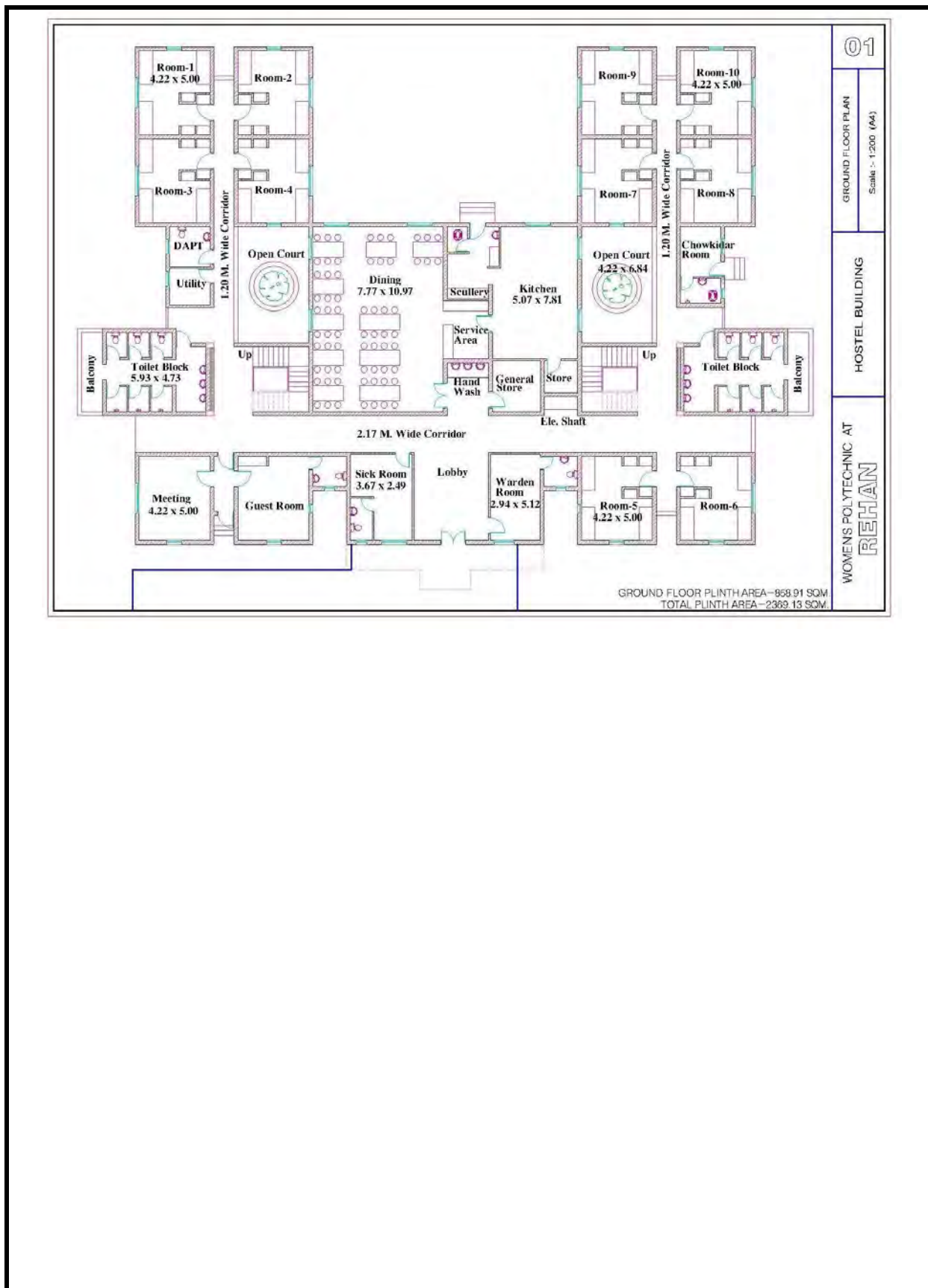
Key Plan



**ACADEMIC BUILDING
KEY PLANS**

S.No.	Name	Main Building Nos.	L	B	Area (Sqm.)
Ground floor					
1	Rectangle	1	65.93	55.995	3691.75
2	Less-A	2	20.02	9.27	-371.17
3	Less-B	1	29.47	5.11	-150.59
4	Less-C	1	21.82	5.77	-125.90
5	Less-D	1	18.22	5.77	-105.13
6	Less-E	2	2.57	4.3	-22.10
7	Less-F	1	9.67	4.235	-40.95
	Total Ground floor Area				2875.90
First floor					
1	Rectangle	1	65.93	55.995	3691.75
2	Less-B	1	29.47	5.11	-150.59
3	Less-C	1	21.82	5.77	-125.90
4	Less-D	1	18.22	5.77	-105.13
5	Less-E	2	2.57	4.3	-22.10
6	Less-F	1	9.67	4.235	-40.95
7	Less-G	2	20.02	12.255	-490.69
8	Less-H	1	5.41	6.59	-35.65
	Total First floor Area				2720.73
Second floor					
1	Rectangle	1	65.93	55.995	3691.75
2	Less-B	1	29.47	5.11	-150.59
3	Less-E	2	2.57	4.3	-22.10
4	Less-F	1	9.67	4.235	-40.95
5	Less-I	1	42.67	30.67	-1308.69
6	Less-K	1	17.44	9.22	-160.80
	Total Second floor Area				2008.62
	Total Plinth Area on all floors				7605.25

Floor Plans of Hostel Building



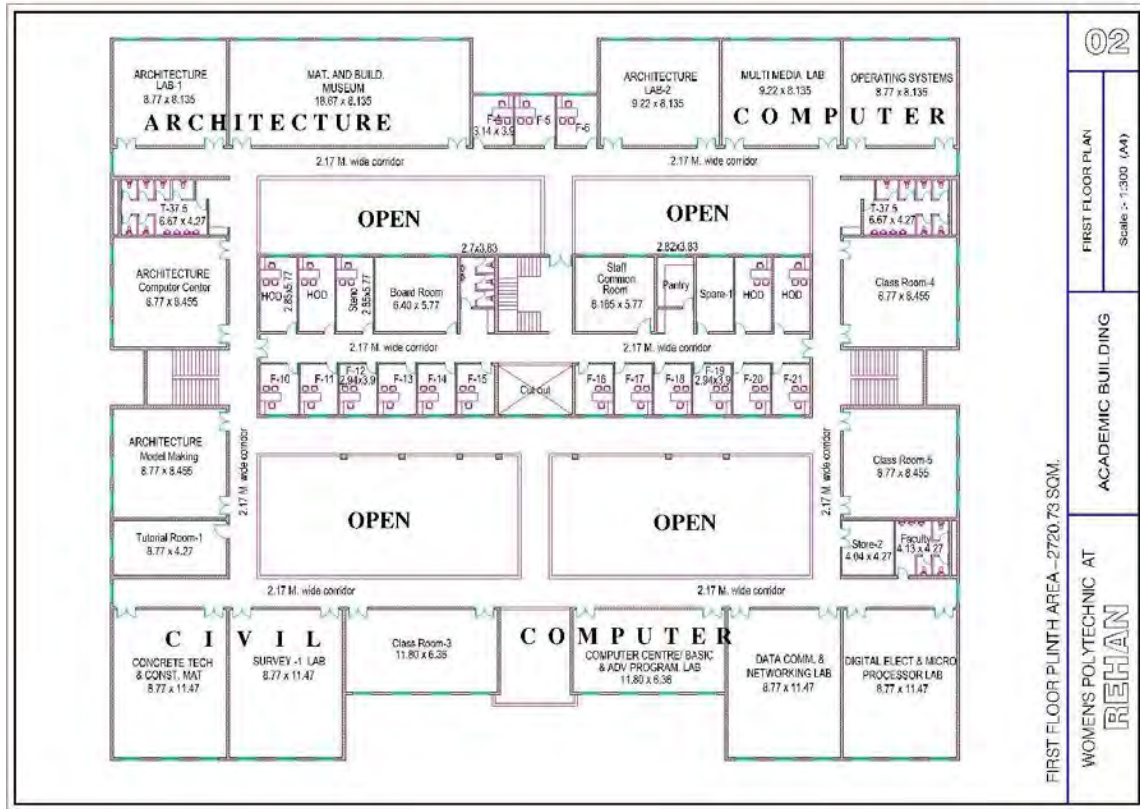
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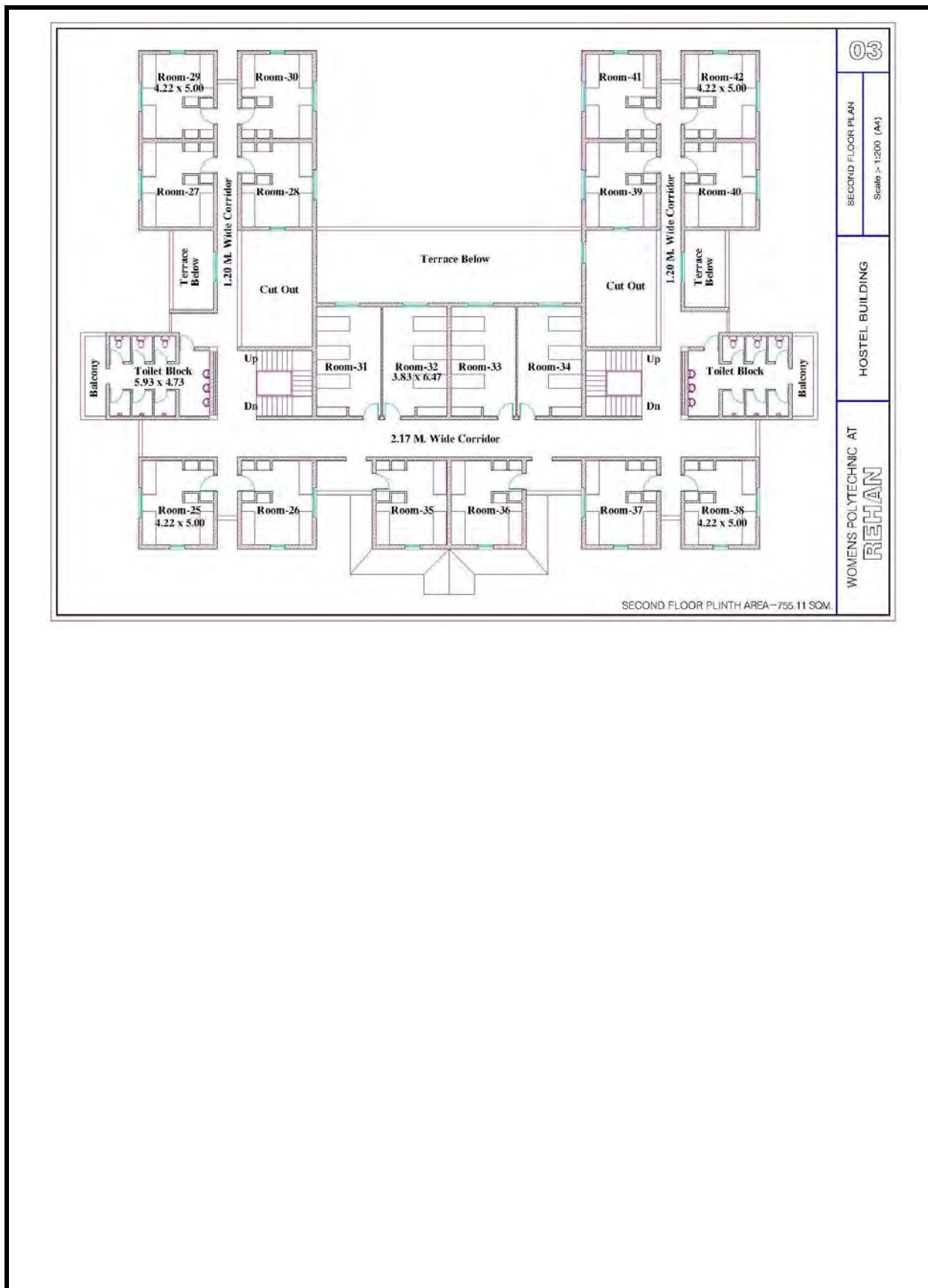
GROUND FLOOR PLAN
Scale :- 1:200 (A4)

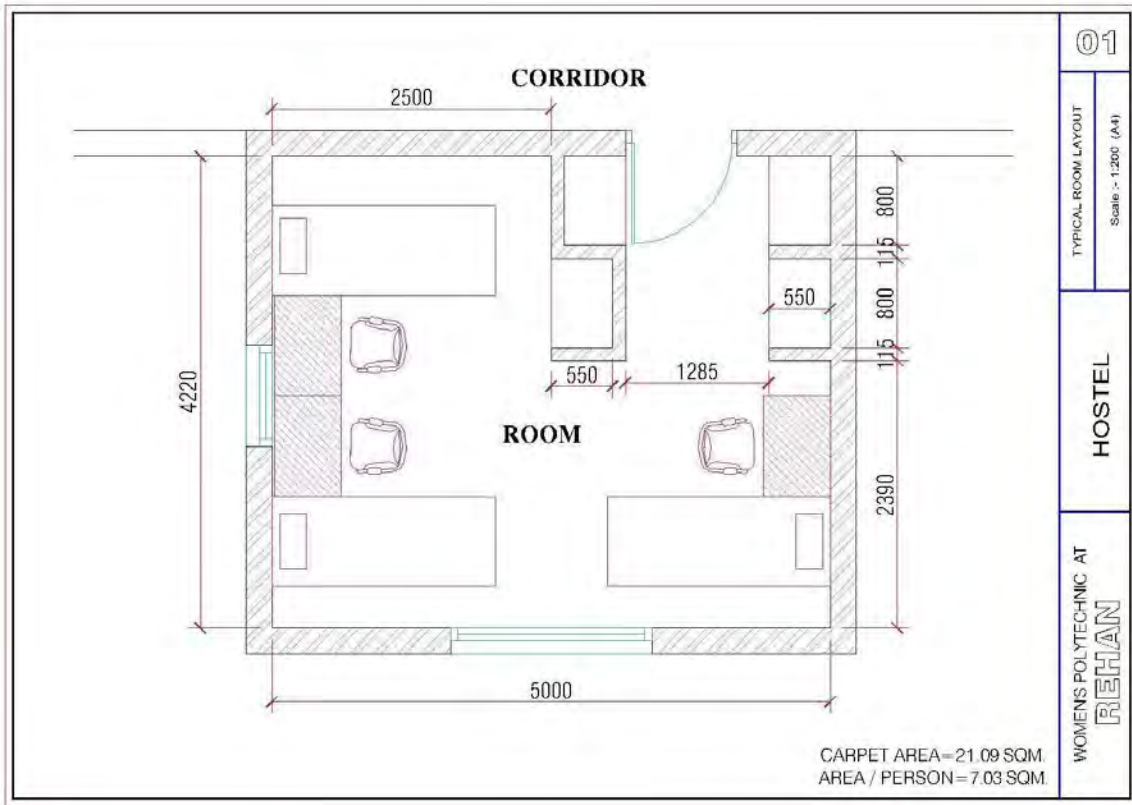
HOSTEL BUILDING

WOMENS POLYTECHNIC AT
REHAN

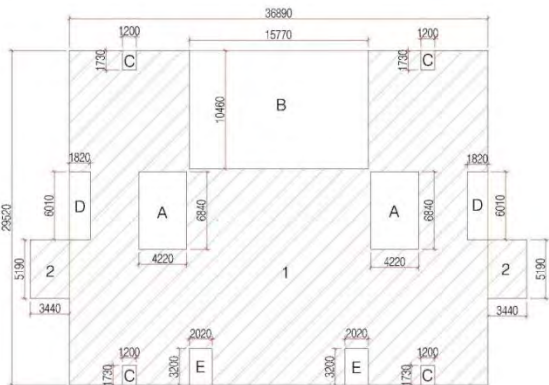
GROUND FLOOR PLINTH AREA - 858.91 SQM
TOTAL PLINTH AREA - 2369.13 SQM



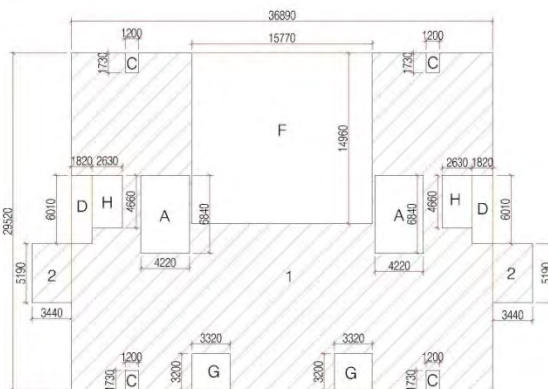




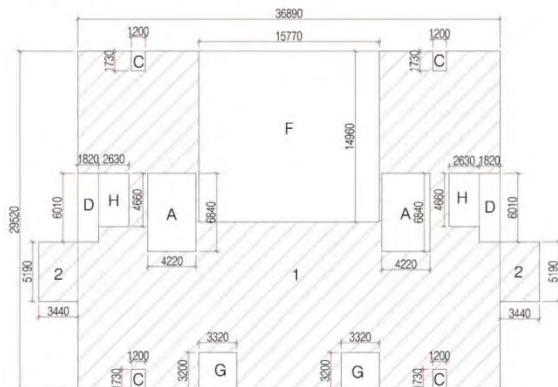
Key Plan



GROUND FLOOR KEY PLAN



FIRST FLOOR KEY PLAN

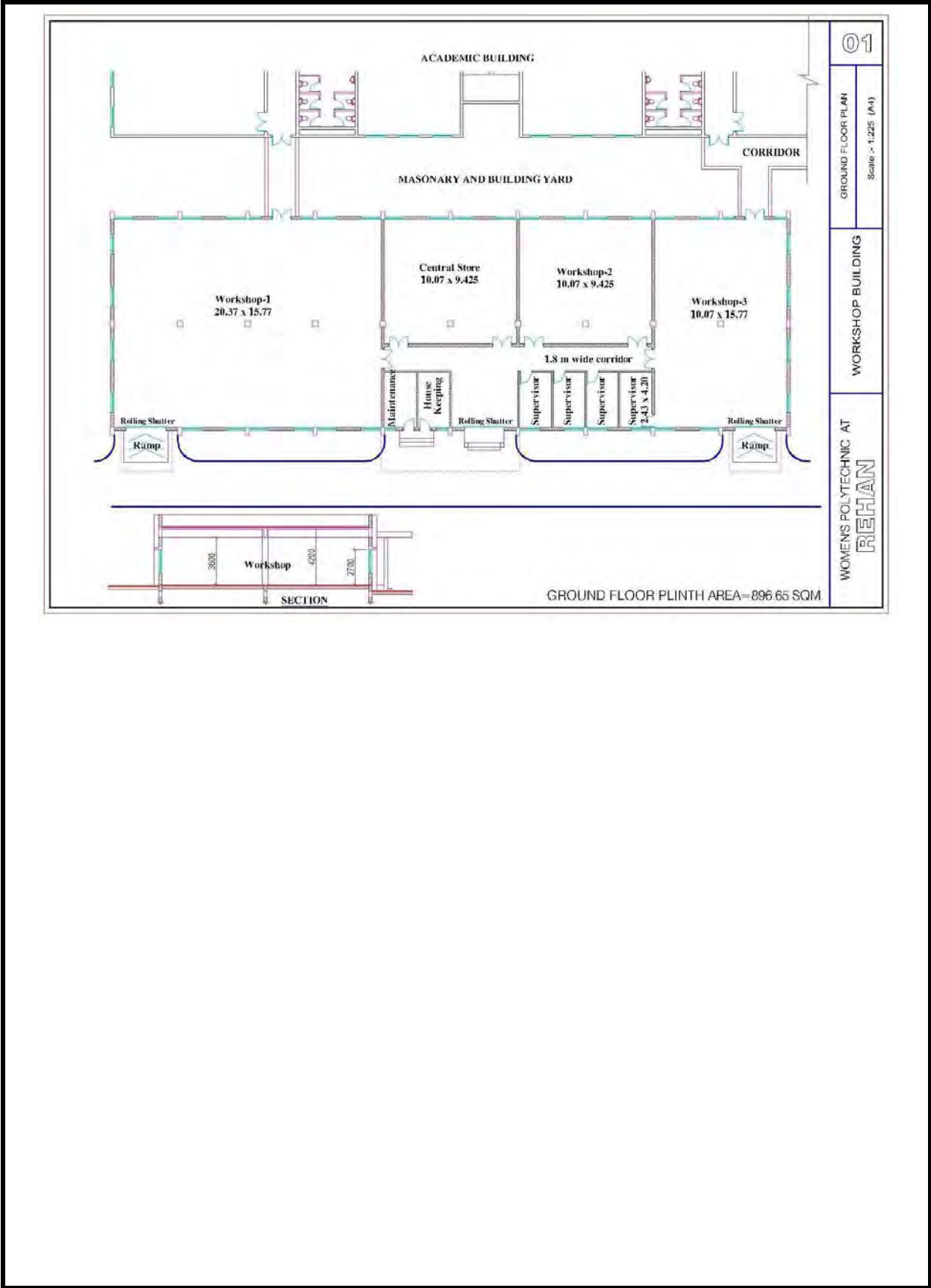


SECOND FLOOR KEY PLAN

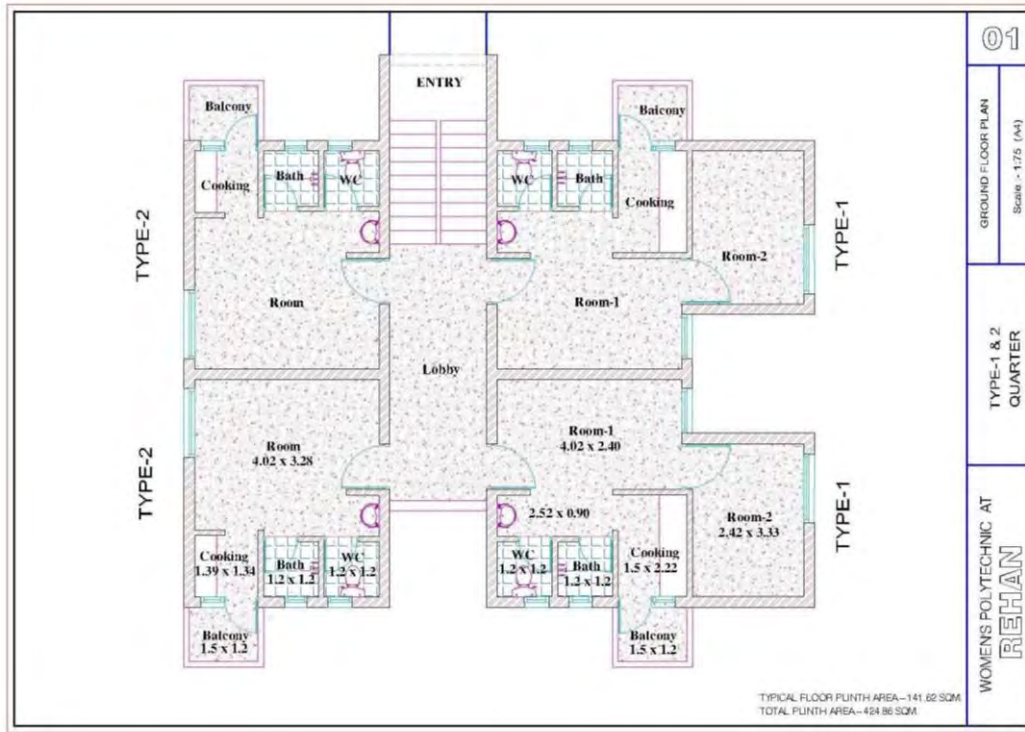
HOSTEL KEY PLANS

S.No.	Name	Hostel Building Nos.	L	B	Area (Sqm.)
Ground floor					
1	Rectangle-1	1	36.89	29.52	1088.99
2	Rectangle-2	2	3.44	5.19	35.71
3	Less-A	2	4.22	6.84	-57.73
4	Less-B	1	15.77	10.46	-164.95
5	Less-C	4	1.2	1.73	-8.30
6	Less-D	2	1.82	6.01	-21.88
7	Less-E	2	2.02	3.2	-12.93
Total Ground floor Area					858.91
First floor					
1	Rectangle-1	1	36.89	29.52	1088.99
2	Rectangle-2	2	3.44	5.19	35.71
3	Less-A	2	4.22	6.84	-57.73
4	Less-C	4	1.2	1.73	-8.30
5	Less-D	2	1.82	6.01	-21.88
6	Less-F	1	15.77	14.96	-235.92
7	Less-G	2	3.32	3.2	-21.25
8	Less-H	2	2.63	4.66	-24.51
Total First floor Area					755.11
Second floor					
1	Rectangle-1	1	36.89	29.52	1088.99
2	Rectangle-2	2	3.44	5.19	35.71
3	Less-A	2	4.22	6.84	-57.73
4	Less-C	4	1.2	1.73	-8.30
5	Less-D	2	1.82	6.01	-21.88
6	Less-F	1	15.77	14.96	-235.92
7	Less-G	2	3.32	3.2	-21.25
8	Less-H	2	2.63	4.66	-24.51
Total Second floor Area					755.11
Total Plinth Area on all floors					2369.13

Floor Plan of Workshop Building



Floor Plan of Type 1 and Type 2 Quarter



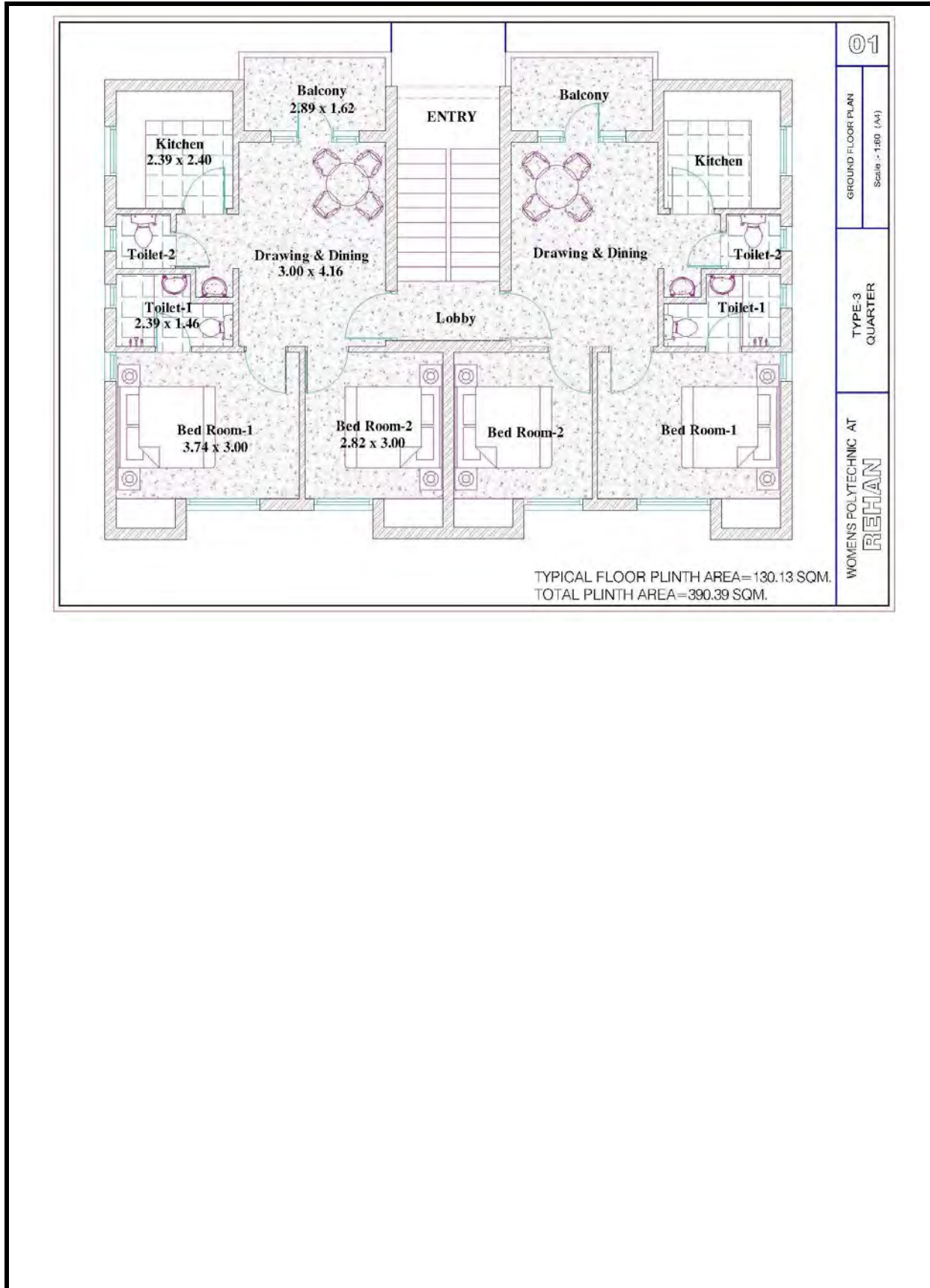
01

GROUND FLOOR PLAN
Scale - 1/75 (A4)

TYPE-1 & 2
QUARTER

WOMENS POLYTECHNIC AT
REHAN

Floor Plan of Type 3 Quarter



01

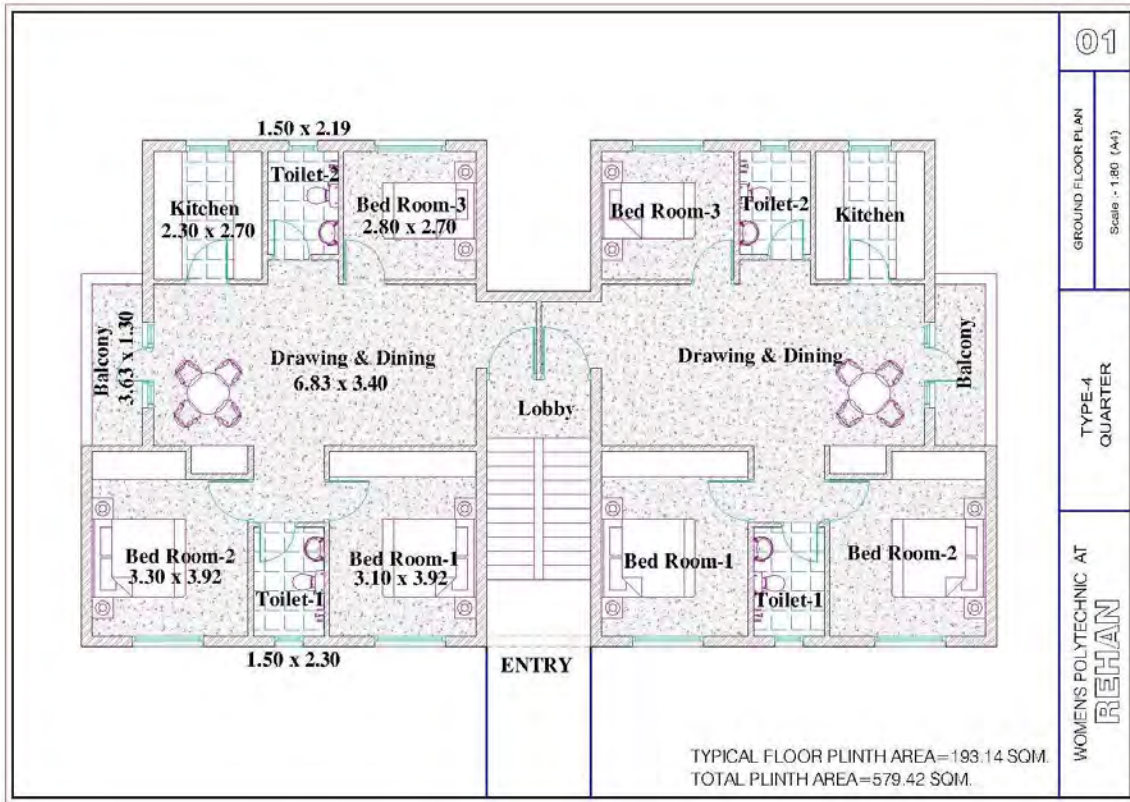
GROUND FLOOR PLAN
Scale = 1:80 (A4)

TYPE 3
QUARTER

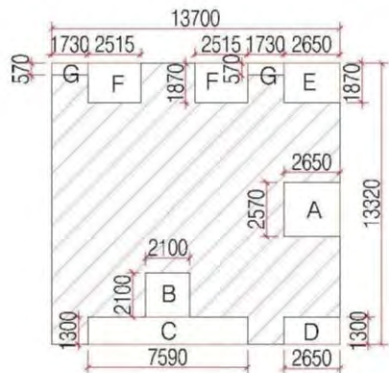
WOMENS POLYTECHNIC AT
REHAN

TYPICAL FLOOR PLINTH AREA=130.13 SQM.
TOTAL PLINTH AREA=390.39 SQM.

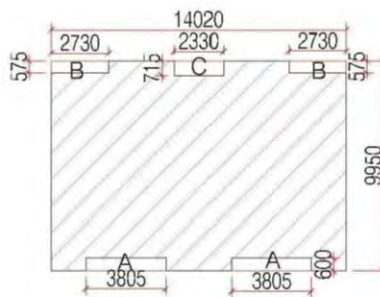
Floor Plan of Type 4 Quarter



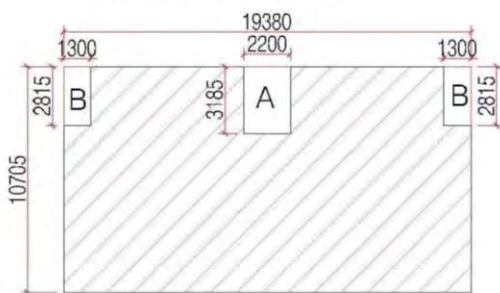
Key Plan



TYPE -1&2
TYPICAL FLOOR KEY PLAN



TYPE -3
TYPICAL FLOOR KEY PLAN



TYPE -4
TYPICAL FLOOR KEY PLAN

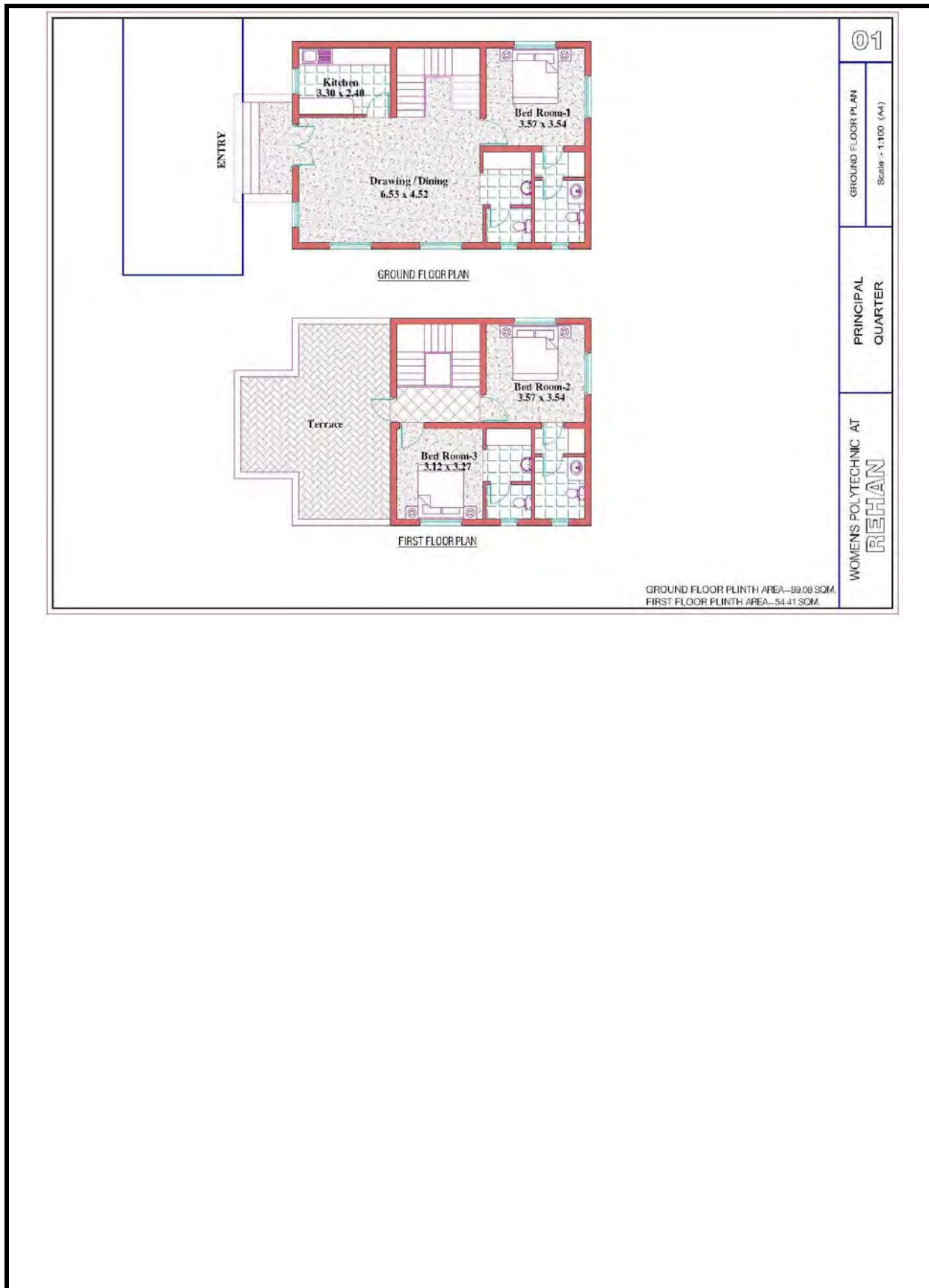
STAFF QUARTERS KEY PLANS

Staff Building Type-1&2					
S.No.	Name	Nos.	L	B	Area (Sqm.)
Ground floor					
1	Rectangle	1	13.7	13.32	182.48
2	Less-A	1	2.65	2.57	-6.81
3	Less-B	1	2.1	2.1	-4.41
4	Less-C	1	7.59	1.3	-9.87
5	Less-D	1	2.65	1.3	-3.45
6	Less-E	1	2.65	1.87	-4.96
7	Less-F	2	2.515	1.87	-9.41
8	Less-G	2	1.73	0.57	-1.97
Total Ground floor Area					141.62
First floor					
1	Rectangle	1	13.7	13.32	182.48
2	Less-A	1	2.65	2.57	-6.81
3	Less-B	1	2.1	2.1	-4.41
4	Less-C	1	7.59	1.3	-9.87
5	Less-D	1	2.65	1.3	-3.45
6	Less-E	1	2.65	1.87	-4.96
7	Less-F	2	2.515	1.87	-9.41
8	Less-G	2	1.73	0.57	-1.97
Total First floor Area					141.62
Second floor					
1	Rectangle	1	13.7	13.32	182.48
2	Less-A	1	2.65	2.57	-6.81
3	Less-B	1	2.1	2.1	-4.41
4	Less-C	1	7.59	1.3	-9.87
5	Less-D	1	2.65	1.3	-3.45
6	Less-E	1	2.65	1.87	-4.96
7	Less-F	2	2.515	1.87	-9.41
8	Less-G	2	1.73	0.57	-1.97
Total Second floor Area					141.62
Total Plinth Area on all floors					424.85

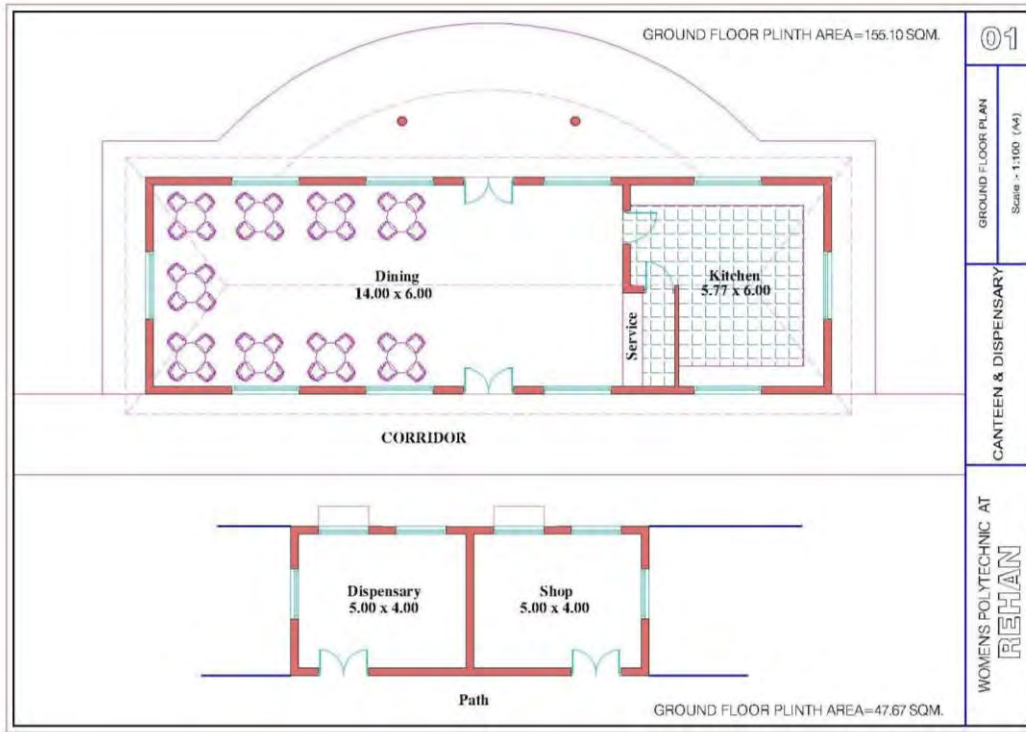
Staff Building Type-3					
S.No.	Name	Nos.	L	B	Area (Sqm.)
Ground floor					
1	Rectangle	1	14.02	9.95	139.50
2	Less-A	2	3.805	0.6	-4.57
3	Less-B	2	2.73	0.575	-3.14
4	Less-C	1	2.33	0.715	-1.67
Total Ground floor Area					130.13
First floor					
1	Rectangle	1	14.02	9.95	139.50
2	Less-A	2	3.805	0.6	-4.57
3	Less-B	2	2.73	0.575	-3.14
4	Less-C	1	2.33	0.715	-1.67
Total First floor Area					130.13
Second floor					
1	Rectangle	1	14.02	9.95	139.50
2	Less-A	2	3.805	0.6	-4.57
3	Less-B	2	2.73	0.575	-3.14
4	Less-C	1	2.33	0.715	-1.67
Total Second floor Area					130.13
Total Plinth Area on all floors					390.38

Staff Building Type-4					
S.No.	Name	Nos.	L	B	Area (Sqm.)
Ground floor					
1	Rectangle	1	19.38	10.705	207.46
2	Less-A	1	2.2	3.185	-7.01
3	Less-B	2	1.3	2.815	-7.32
Total Ground floor Area					193.14
First floor					
1	Rectangle	1	19.38	10.705	207.46
2	Less-A	1	2.2	3.185	-7.01
3	Less-B	2	1.3	2.815	-7.32
Total First floor Area					193.14
Second floor					
1	Rectangle	1	19.38	10.705	207.46
2	Less-A	1	2.2	3.185	-7.01
3	Less-B	2	1.3	2.815	-7.32
Total Second floor Area					193.14
Total Plinth Area on all floors					579.41

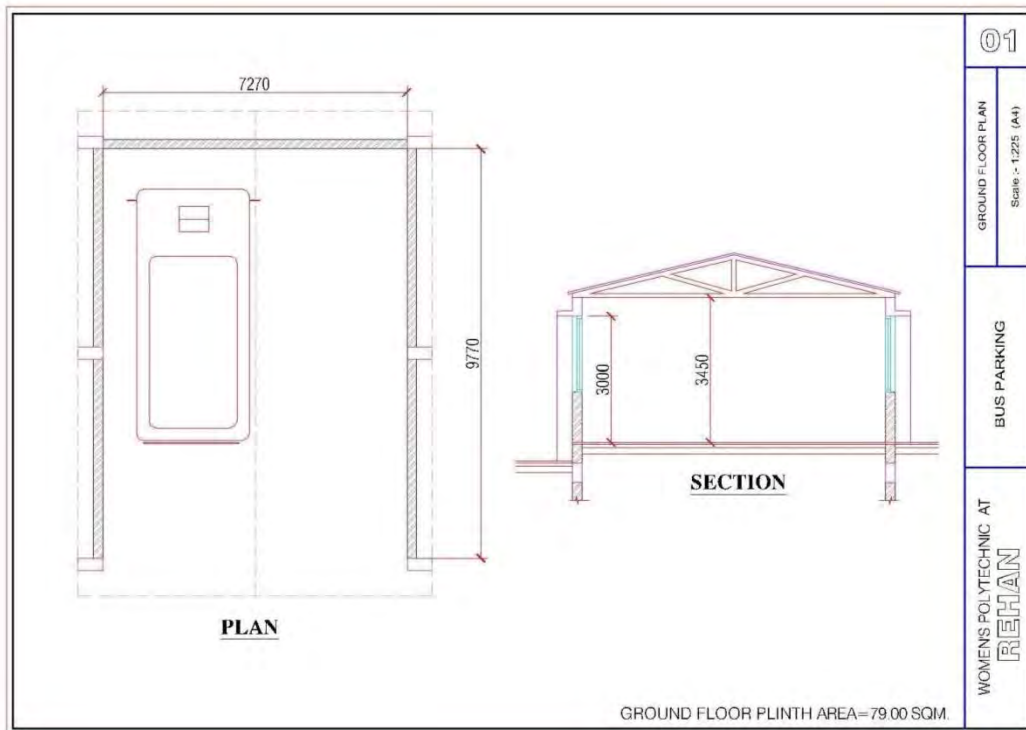
Floor Plan of Principal's Quarter



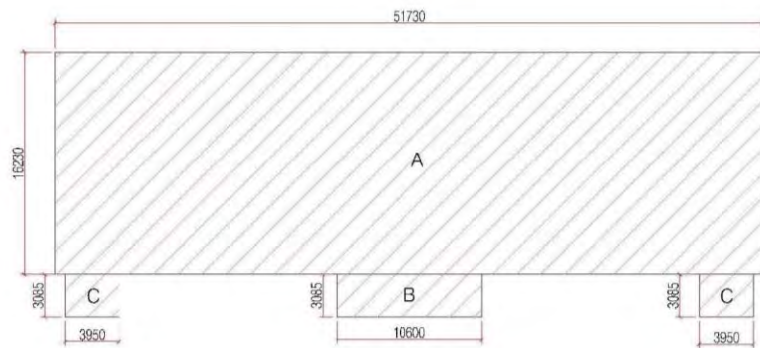
Floor Plan of Canteen and Dispensary



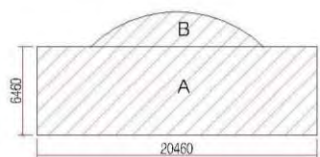
Floor Plan and Section of Bus Stand



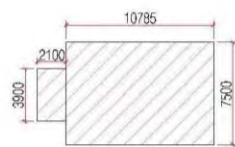
Key Plans



WORKSHOP
GROUND FLOOR KEY PLAN

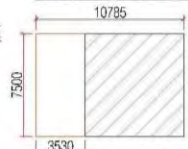


CANTEEN
GROUND FLOOR KEY PLAN



GROUND FLOOR KEY PLAN

PRINCIPAL'S RESIDENCE



FIRST FLOOR KEY PLAN

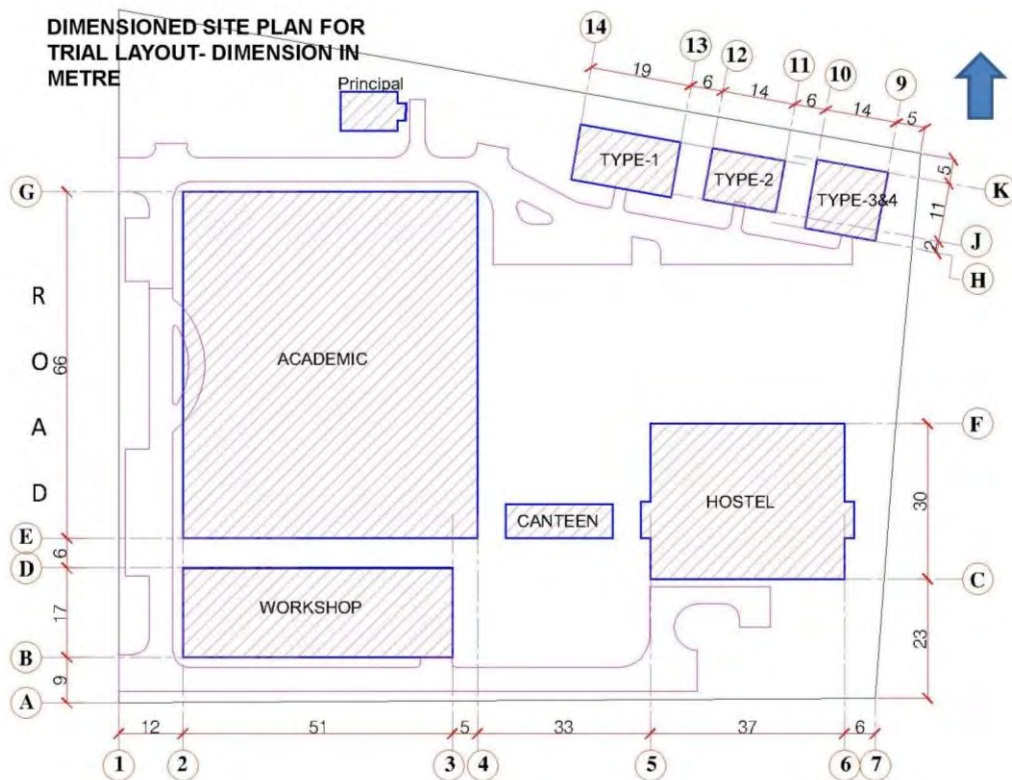
MISCELLANEOUS
KEY PLANS

		Principal's Residence			
S.No.	Name	Nos.	L	B	Area (Sqm.)
Ground floor					
1	Rectangle	1	10.785	7.5	80.89
2	Rectangle	1	2.1	3.9	8.19
Total Ground floor Area					89.08
First floor					
1	Rectangle	1	10.785	7.5	80.89
2	Less-A	1	3.53	7.5	-26.48
Total First floor Area					54.41
Total Plinth Area on all floors					143.49

		Workshop Building			
S.No.	Name	Nos.	L	B	Area (Sqm.)
Ground floor					
1	Rectangle-A	1	51.73	16.23	839.58
2	Rectangle-B	1	10.6	3.085	32.70
3	Rectangle-C	2	3.95	3.085	24.37
Total Plinth Area					896.65

		Canteen			
S.No.	Name	Nos.	L	B	Area (Sqm.)
Ground floor					
1	Rectangle-A	1	20.46	6.46	132.17
2	Rectangle-B	1			22.93
Total Plinth Area					155.10

Dimensional Site Plan of Womens's Hostel



Area Statement

AREA STATEMENT	Sq.M
Site area	17511
SUMMARY OF GROUND FLOOR COVERAGE	
Academic Building	2875.90
Workshop	896.65
Corridor	115
Canteen	155.10
Hostel	858.91
Principal's Residence	89.08
Type 1 & 2 Residence	141.62
Type 3 Residence	130.13
Type 4 Residence	193.14
Bus Parking	79.00
Dispensary	47.67
Future Multi purpose Hall	380
Future Guest House	120
TOTAL GROUND COVERAGE	6082.19
Total GROUND COVERAGE percentage	34.73
SUMMARY OF TOTAL BUILT UP AREA	
Academic Building	7605.25
Workshop	896.65
Corridor	115
Canteen	155.10
Hostel	2369.13
Principal's Residence	143.49
Type 1 & 2 Residence	424.85
Type 3 Residence	390.38
Type 4 Residence	579.41
Bus Parking	79.00
Dispensary	47.67
Future Multi purpose Hall	380
Future Guest House	200
TOTAL BUILT UP AREA ON ALL FLOORS	13385.94
Total COVERAGE percentage F.A.R	76.44

Source: Asian Development Bank.

B. Executing and Implementing Agencies

9. At the request of the Government of India and the Himachal Pradesh government, ADB will offer \$80 million in loan assistance to modernize and reform Himachal Pradesh's TVET programs, and scale up training capacity. The Department of Planning (DOP) of Himachal Pradesh will be the executing agency for the proposed Himachal Pradesh Skill Development Project (HPSDP). The Himachal Pradesh Kaushal Vikas Nigam (HPKVN); Department of Technical Education, Vocational and Industrial Training (DOTE); Department of Higher Education (DOHE); and Public Works Department (PWD) of the Government of Himachal Pradesh will be the implementing agencies. HPKVN will also function as the project management unit (PMU) for the project. The PWD will be responsible for overall planning and implementation of the civil works under the HPSDP. They will ensure that IEEs and EMPs are prepared for all subprojects and the ESMF is adhered to during project implementation. The project management consulting firm to be engaged under the proposed loan will have experienced environment and social safeguards experts. The PMC will assist PWD and HPKVN in preparing semi-annual safeguards monitoring reports. HPKVN will consolidate these safeguard reports and submit them to ADB semiannually.

C. Implementation Schedule

10. The implementation period for the proposed subproject is 24 months. The preliminary drawings for all components of Polytechnic Complex have been approved. The bidding process for the subproject is expected to start in July 2017. The subproject will be awarded for construction by August 2017. The contractor is expected to be mobilized by October 2017. The construction work is expected to be completed by October 2019.

III. DESCRIPTION OF THE EXISTING SUBPROJECT ENVIRONMENT

11. This section presents a brief description of the existing environment around the subproject site, including its physical resources, ecological resources, socioeconomic development and social and cultural resources. Broad aspects of various environmental parameters such as geography, climate and meteorology, physiographic, geology, seismology, ecology, socio-cultural and economic development parameters that are likely to be affected by the proposed subproject have also been discussed. For completing the baseline description, secondary information was collected from relevant government agencies like the Forest Department, Himachal Pradesh State Pollution Control Board, and India Meteorological Department.

A. Environmental Profile

1. Air and Noise Quality

12. No air pollution sources (point or nonpoint) have been seen in the surroundings of subproject influence area as site is in rural area. The subproject site is near Rehan village in Nurpur Tehsil of Kangra district. The subproject site is not on any national or state highway. Traffic on the road connecting to the site is insignificant. Hence, almost nil vehicular emission is expected. There are no industrial establishments near the subproject site. The ambient air quality and noise data for the subproject site are not available. However, the levels are expected to be well within the stipulated limits since there are no sources of air or noise pollution near the site. Ambient air quality monitoring and noise level monitoring will be conducted by the contractor prior to start of construction works with the aim of establishing baseline conditions.

13. It was observed that ambient noise scenario in the study area is quite low in general. There are no industrial establishments in and around the project area. As the traffic density is very low, the noise either from point or nonpoint sources is not expected in the project area. Moreover, there will be not much rise in the noise due to the proposed Polytechnic activities since it only includes teaching / training activities, and institute will have hostel facilities. There is no noise baseline data available for the subproject site. But the levels are expected to be well within the stipulated limits due to no major source of noise pollution at the site. Noise level monitoring will be conducted by the contractor prior to start of construction to establish baseline conditions.

14. **Climate.** The climate in Kangra district varies from cold temperate, to tropical, to subtropical. The summer season begins March and lasts till mid-September. The winter is mild and starts from mid-December till mid-March. The monsoon season starts end of June and lasts till end of September. October and November are transition months, while the winter season starts December and ends in February.

15. **Temperature.** The temperature exhibits seasonal variation, lowest during the winter, and higher during the summer. April, May, June, and July are the hottest months while January, February, and December are the cold months. The maximum temperature rises to about 38°C and the minimum temperature falls to about -1.9°C. **Table 3** shows monthly weather in Dharamshala. The same variation is expected at subproject site.

Table 3: Average, Maximum, and Minimum Temperature at Dharamshala

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Maximum °C	23.1	28	31.4	35.3	38.6	38.3	35.3	31.5	30.6	30.5	26.6	22.9
Minimum °C	-1.9	-1.6	2.4	7.3	8.8	12.8	15.4	16.0	11.2	8.0	4.8	-1.0

Source: Government of India, Ministry of Earth Sciences, India Meteorological Department. New Delhi.

16. **Rainfall.** The area experiences maximum rainfall during monsoon season from June to September while as least rainfall is received in November and December. The monthly average rainfall observed in last two decades is presented in **Table 4**.

Table 4: Average Monthly Rainfall at Dharamshala (millimeters)

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Rainfall	114.5	100.7	98.8	48.6	59.1	202.7	959.7	909.2	404.837	66.3	16.7	54.0

Source: Government of India, Ministry of Earth Sciences, Indian Meteorological Department. New Delhi.

17. **Humidity.** Based on long-term climatology data of the Kangra district, it is found that relative humidity increases rapidly with the onset of monsoon and reaches a maximum (82% in the morning and 70% in the evening) in August, the peak of the monsoon period. Relative humidity is minimum during the summer months (April–June) with May being the driest month (12% in morning and 19% in evening). Skies are heavily clouded during the monsoon months and for short spells when the district is affected by western disturbances.

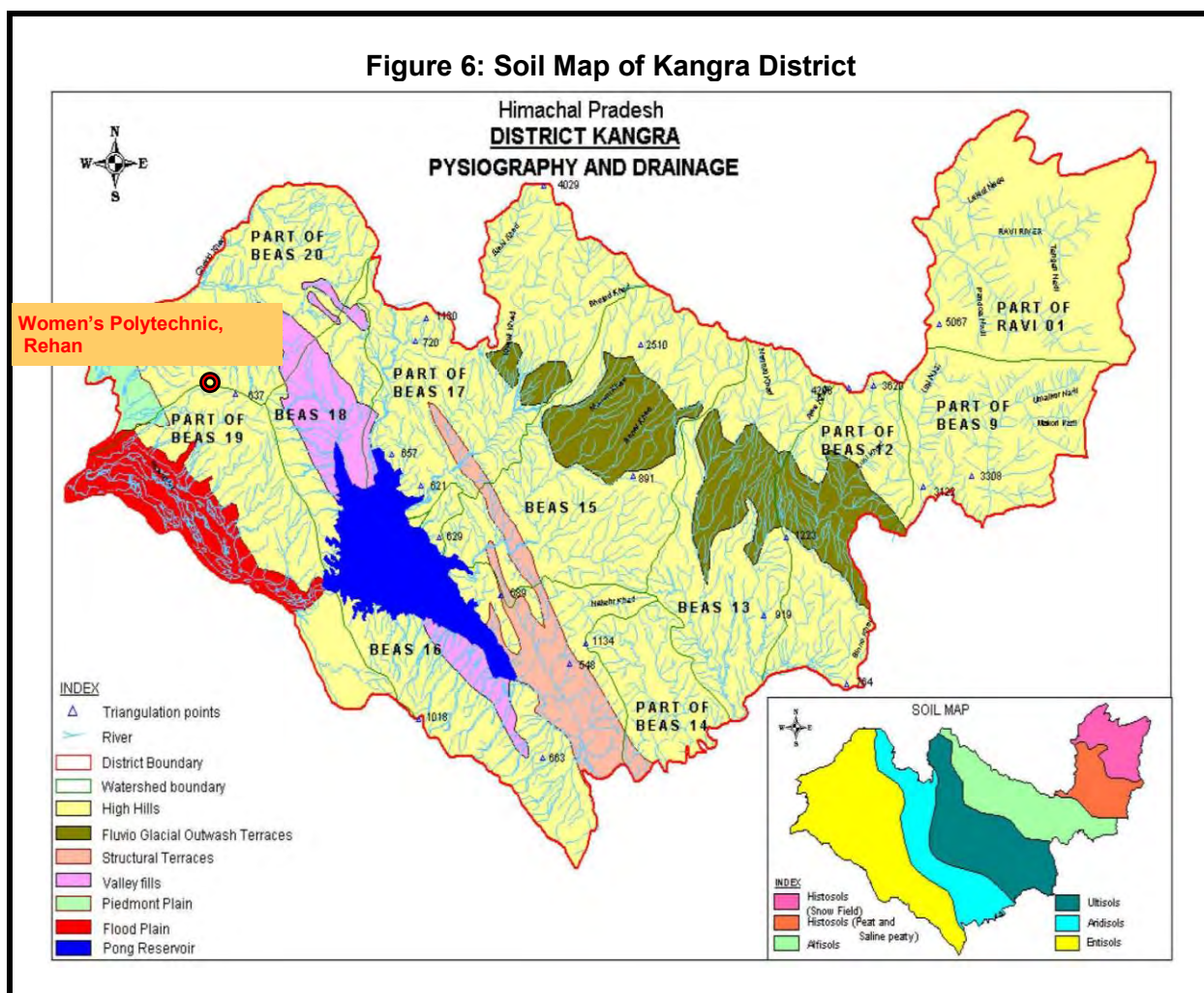
18. **Wind speed and direction.** Two broad wind patterns are observed in the district, the southeast to northwest (January–May), and south westerly to north easterly (June–October). The average wind speed is minimum (0.8 kph) in July–October. The wind speed goes up to 10.8 kph

in summer months.

2. Topography and Soils

19. Kangra district presents an intricate mosaic of mountain ranges, hills, and valleys. It is primarily a hilly district, with altitudes ranging from 350 m above mean sea level (amsl) to 4,880 m amsl in the hills of Dauladhar. The elevation of subproject site is 846 m amsl. Physiographically, the district can be divided into six units: (i) high hills, which cover almost 60% of the district; (ii) fluvio glacial outwash terraces, which are located in the northeastern part of the district; (iii) structural terraces, in the central part; (iv) valley fills; (v) piedmont plain; and (vi) flood plain.

20. Six types of soils are observed in the district, which are (i) histosols (snow field, peaty, and saline peaty); (2) ultisols (brown red and yellow); (3) alfisols (submountain); (4) ardisols (gray brown); (5) entisols (younger alluvium). The soils at the subproject site are alfisols. The soil map of the district is shown in **Figure 6**. The soils are generally brown, alluvial, and grey brown podzolic. The soils are light textured with neutral pH and good fertility status.



Source: Government of India, Ministry of Water Resources, Central Ground Water Board. *Ground Water Information Booklet Kangra District*. New Delhi.

3. Surface Water and Groundwater

21. The subproject site is located in catchment area of the Beas River. In the close vicinity of site, there are no streams or any water body. The ground water sources in the subproject area are dug wells, hand pumps, and tube wells. To establish the baseline scenario, ground water quality data was obtained from the Central Ground Water Board. The water quality data for the project region is given in **Table 5**.

Table 5: Ground Water Quality in Subproject Area (Mg/l)

Parameter	pH	EC μS/cm at 25°C	HC O ₃	Cl	So ₄	NO 3	F	Ca	Mg	Na	K	Total Hardness as CaCO ₃
Minimum	7.55	120	37	7.09	Tr	Tr	Tr	10	3.6	6.3	0.6	45
Maximum	8.6	910	513	110	71	28	0.54	112	56	105	38	370
Drinking Water Standard Value	6.5-8.5	No limit specified	600	1000	400	<45	1.5	200	100	No limit specified	No limit specified	600

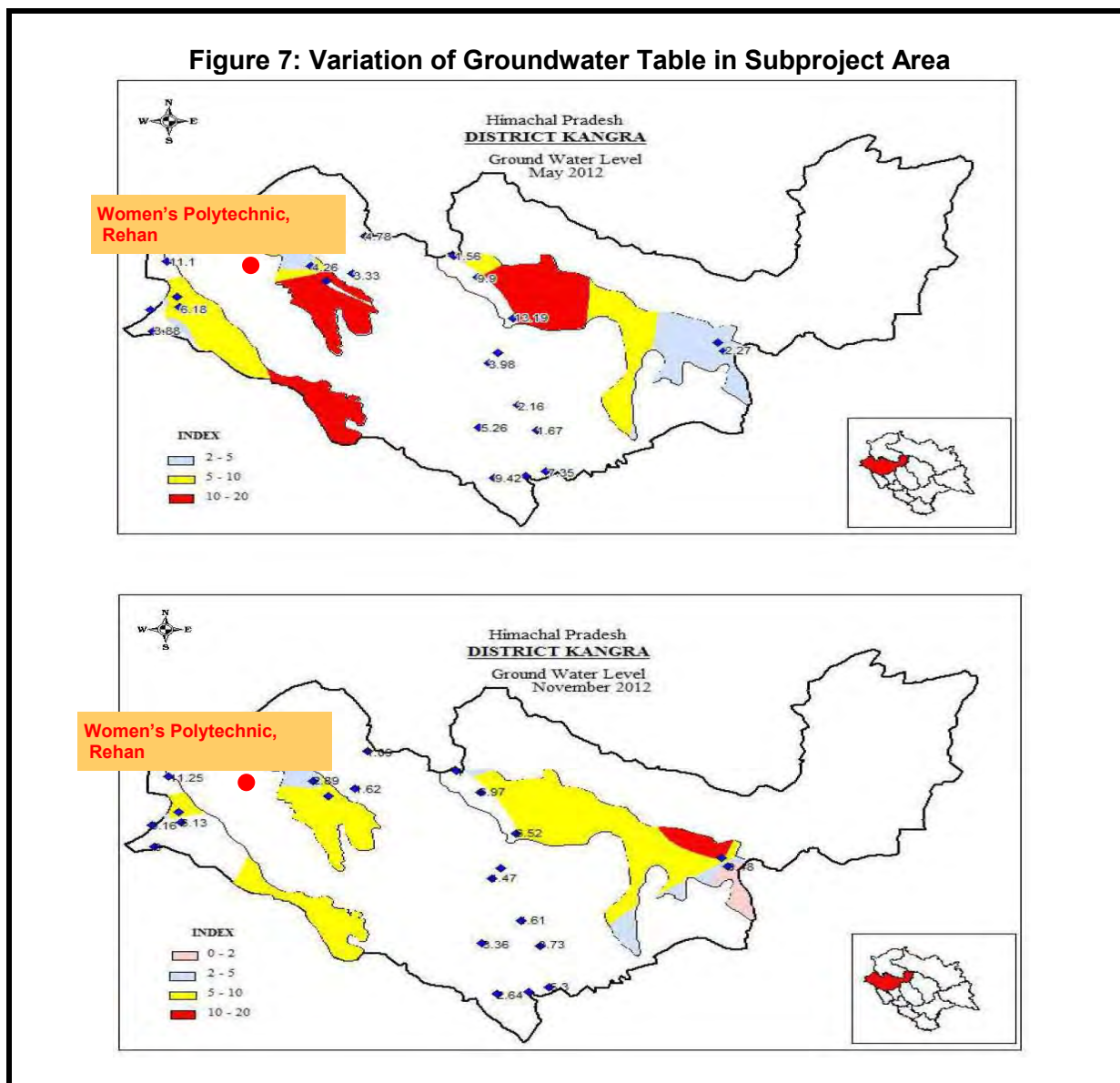
Tr = traces.

Source: Government of India, Ministry of Water Resources, Central Ground Water Board.

22. Due to the absence of any water polluting source in the area, it is clear that all parameters of water quality are within the permissible limits specified by the Bureau of Indian Standards for drinking and irrigation. These water samples were drawn by the Central Ground Water Board from different locations across the district. The nearest location is within 2 km from the subproject site. The water quality was monitored in the year 2013. Water quality monitoring will be conducted by the contractors prior to the start of construction works.

23. Based on 2012 data, the depth of water level during pre monsoon months ranged from 1.56 m to 15.44 m below ground level. During post monsoon months, it ranged from 0.48 to 12.30 m below ground level. The variation of groundwater table depth is shown in **Figure 7**. The stage of groundwater development in Indaura valley of Kangra district, where the subproject site located, is 50.03% and falls under the safe category. This indicates that groundwater has not been overexploited and that it is restored regularly.

Figure 7: Variation of Groundwater Table in Subproject Area

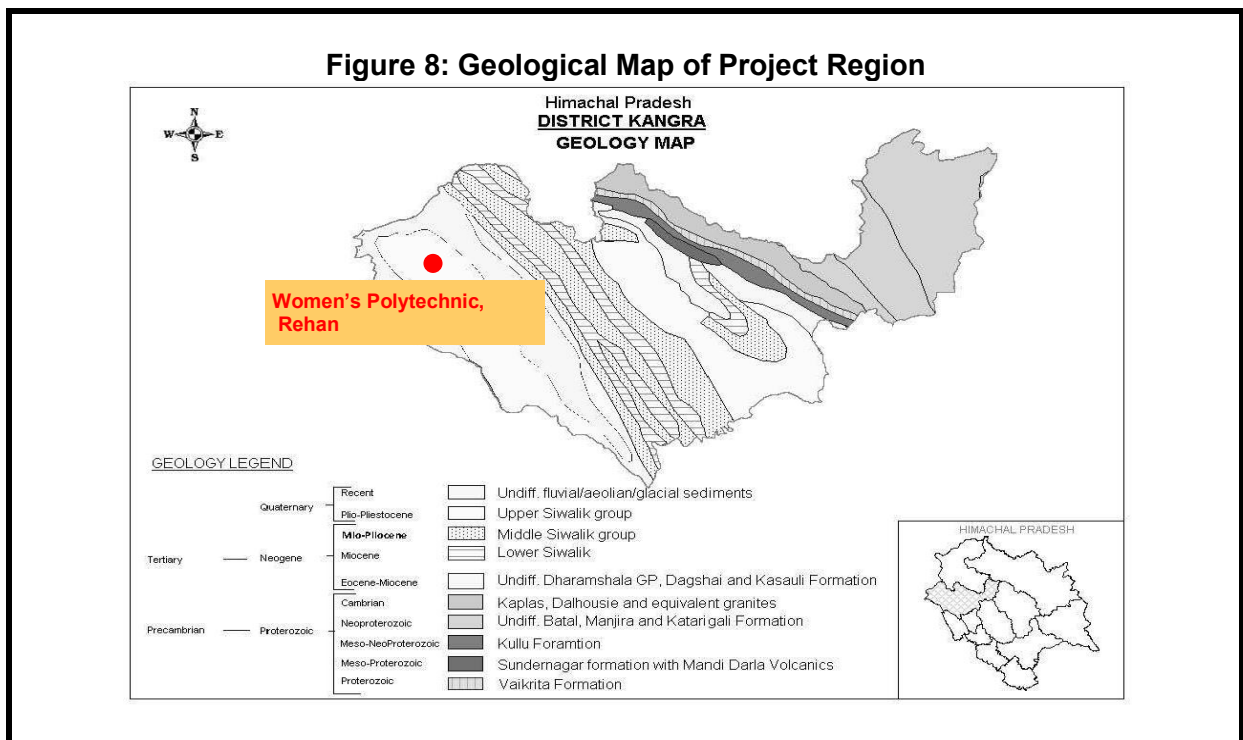


Source: Government of India, Ministry of Water Resources, Central Ground Water Board. *Ground Water Information Booklet Kangra District*. New Delhi.

4. Geology and Seismology

24. In Himachal Pradesh, geological history goes back to the Archaean Proterozoic transition although the actual Himalayan Mountain building took place only during Cenozoic era. The Himalayas are a classic example of continent and continent collision due to convergent movement of the Indian plate toward the Eurasian plate. It comprises two contrasting tectogens with their own distinctive geological history. The dividing lines between these two tectogens represent a major tectonic discontinuity and are designated by several local names. However, it can be collectively refer to as a main central thrust and on either side of this thrust the tectogens display contrasting stratigraphic and tectonics features indicating convergence of two alien blocks. These are the lesser Himalayan tectogens and the Tethys Himalayan tectogen.

25. The shivalik group in the Himachal Himalaya forms a parallel foot-hill belt in the sub-Himalayan zone, extending along the southern margin of the Palaeogene Sirmour group belt from the Ravi to the Yamuna. Within Himachal Pradesh, the Himalaya has maximum width between Hoshiarpur and Jogindernagar. The Siwalik sediments, though occurring as an independent structural belt, are also seen to overlies the Muree in the Jammu sector of the Kashmir Himalaya and the Kasauli in the Himachal Himalaya. Pilgrim (1910) recorded a gradual transition from Muree beds to Lower Siwalik in the Rawalpindi and Jhelum districts of Pakistan and from Kasauli to Lower *shivalik* (Nahan) in the Himachal Himalaya. This fact assumes importance because there is a tendency to ignore this normal relationship between the *shivalik* and *sirmour* groups at Dharamshala, Sarkaghat, and Nalagarh. At Haritalyangar near Bilaspur, the Lower Siwalik is seen resting on the Dagshai with an unconformity, which is described as the most striking discordance in the whole sequence of fresh water deposits and evidently representing a period of considerable earth movements (Pascoe 1964). The main tectonic elements of the project region include the central thrust, and boundary fault. Several NE-SW lineaments are also known from the area and these traverses across different tectonic zones. Seismically, the state constitutes one of the most active domains of the Himalayan region. The geological map of project region has been given in **Figure 8:**



Source: Government of India, Ministry of Water Resources, Central Ground Water Board. Ground Water Information Booklet Kangra District.

26. India's seismic code divides the country into five seismic zones (I to V). The subproject stretch comes under seismic zone V as defined by Urban Earthquake Vulnerability Project and the Atlas prepared by the Building Materials Promotion and Technology Council 2q, Government of India and UNDP (IS 1893 [Part I: 2002]). All structures of Polytechnic campus will be designed considering seismic zone V. It may be mentioned that intensity of earthquake increases from Zone I to V. The Zone V mainly covers Himalayan region in India and Himachal Pradesh being a hilly state lies in Himalayan region. Zones I, II and III mainly cover Central and Southern parts of Indian peninsula. It may be mentioned that after an earthquake of 7.8 intensity on Richter scale

in Kangra district in 1905 no major earthquake has occurred in Himachal Pradesh.

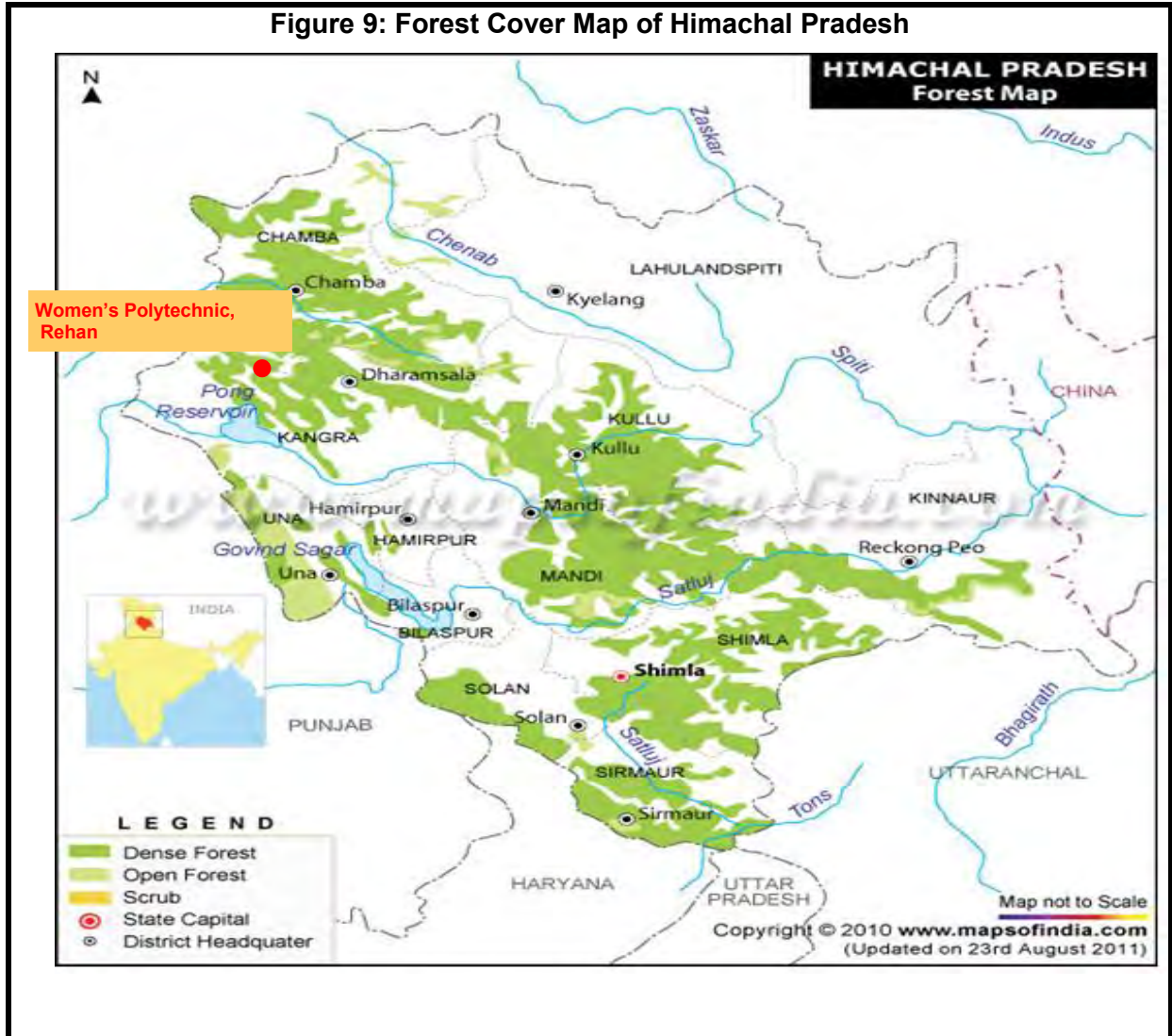
Drainage

27. The sub-project site is drained by Beas River tributary through a local, seasonal storm water drain at a distance of about 100 m from the subproject site. The natural slope of site is towards this drain. No flooding issues have been reported at the subproject site as this is away from perennial stream or river. Further, being at foothills, site has swift drainage.

B. Ecological Resources

1. Forests

28 Forests in Himachal Pradesh currently cover an area of nearly 37,691 km² (14,553 sq miles), which is about 38.3% of the total land area of the state. The variation in the landscape has created great diversity of flora and fauna. From the snowbound peaks of the Himalayas to the moist Alpine scrub, sub Alpine forests, dry-temperate and moist-temperate forests to moist deciduous forests, the state possesses a wide biodiversity that in return nurtures a large multiplicity of floral and faunal forms. Reserve forests constitute 71.11%, protected forests cover 28.52%, and unclassified forests constitute 0.35% of the total forest area. Kangra district has about 66.23% of its geographic area under forests and most of it is managed by the Forest Department. The forests of the district can be classified into six main categories, namely (1) tropical dry deciduous forests; (2) sal forests; (3) chir forests; (4) oak forests; (4) deodar, fir, and spruce forests; and (5) the Alpine pastures. The forest cover map is shown in **Figure 9**.



Source: Forest Department, Government of Himachal Pradesh.

29 The subproject site location does not fall within any reserved, protected, or revenue forest. The complete vegetation of Himachal Pradesh relies on two factors—height and rainfall. The southernmost part of the state is at a lower altitude level and it contains both humid and subtropical dry broadleaf woodlands, along with subtropical moist broadleaf forests. Majority of the area is covered by Himalayan subtropical broadleaf forests. Apart from this, the state has some of the vegetation that is abundant with sal, sisham, chir pine, dry deciduous, and moist broad-leaved forests. The landscape that falls in temperate regions has trees like oak, deodar, blue pine, fir, and spruce. The trees found in higher elevations include alders, birches, rhododendrons, and moist alpine scrubs.

30 Himachal Pradesh has abundant fruits like apple, peaches, plums, and berries. It is rightly called the “fruit bowl of India.” There are plenty of fruit orchards, and fruits are exported to various parts of the country and abroad. The pleasant climate also helps numerous flower varieties like gladiolas, lilies, tulips, chrysanthemums, roses, marigolds, carnations, etc. to grow in abundance.

31. Himachal Pradesh is home to approximately 1,200 birds and 359 animal species. This includes leopards, ghoral, snow leopard, musk deer (state animal), and western tragopan (state bird). The state is an ideal tourist destination for animal lovers as it hosts 12 main national parks and sanctuaries. It has two major national sanctuaries—the Great Himalayan National Park and the Pin Valley National Park.

2. Flora and Fauna Around Subproject Site

32. Since the subproject site of Rehan Polytechnic is located near the Rehan village, there are no protected areas within a 10 km radius. Around the subproject site, one only finds domesticated fauna and common trees such as shisam, mango (*Mangifera indica*), neem (*Azadirachta indica*), Bargad (*Ficus religiosa*), jamun (*Syzygium cumini*), pipal (*Ficus religiosa*) and pakur (*Ficus infectoria*), and sal (*Shorea robusta*). There is no endangered or rare species flora at and around subproject site. There is presence of Eucalyptus trees at the site. These trees belong to *Eucalyptus globulus* species. This variety of tree is not endangered or critically endangered as this is cultivated for supply to paper industry for pulpwood production in India and locals also use its dried logs for shuttering purposes during construction of houses. The trees are cut when they attain height of about 5-8 m. This variety is not preferred by avifauna for nesting because it does not have dense and thick canopy. The photographs showing flora at subproject site are given below. It is clear from these photographs that site is devoid of valuable flora. The prevalent shrubs and grasses at subproject site are Phulnoo (*Parthenium hysterurus* Linn), Katera (*Astragalus Gummifer Labill*), Nagfani (*Opuntia ficus-indica*), Aak (*Calotropis gigantea*), Doob (*Cynodon dactylon*), etc. The site photographs showing flora is given below in **Figure-10**.

Figure 10: Photographs showing Flora at Site



33. The fauna in the surroundings of sub-project site includes- Birds such as Crow (*Corves splendens*), Sparrow (*Passer domesticus*), Parrot (*Psittacula krameri*), Baya (*Ploceus philippinus*), Peafowl (*Pavo cristatus*), Pigeon (*Columba livia*), Blue jay, Wood pecker, Myna, Bulbul, Egretta sp. etc. Among the mammals main animals are palm squirrel (*Fumambulus pennanti*), cat, dog (*Cuon sp.*), cow, buffalo, Rat (*Rattus rattus*) etc. The main reptiles found are Indian garden lizards (*Calotes versicolor*), house lizards (*Hemidactylus sp.*), and Viper (*Vipera sp.*) etc. There are no endangered or rare species fauna around the subproject site as it is close to inhabited Rehan village. The water bodies of Kangra District are seasonal in nature because of swift flow. There is not much presence of aquatic life in the water bodies close to the subproject site.

3. Protected Areas

34. The list of protected areas (National Parks and Wildlife Sanctuaries) in Himachal Pradesh is given in **Table 6**. Two wild life sanctuaries falling within Kangra district, but they are located more than 10 km away from the proposed Women's Polytechnic site.

Table 6: Protected Areas in Himachal Pradesh

Sl. No.	Sanctuaries	District	Area (km ²)
1	Bandli	Mandi	32.11
2	Chail	Solan	16.00
3	Chandra Tal	Lahaul and Spiti	38.56+ (11.53 for consideration)
4	Churdhar	Sirmour	55.52
5	Daranghati	Shimla	171.50
6	Dhauladhar	Kangra	982.86
7	Gamgul-Siyabehi	Chamba	108.40
8	Kais	Kullu	12.61
9	Kalatop-Khajjar	Chamba	17.17
10	Kanawar	Kullu	54.27
11	Khokhan	Kullu	14.94
12	Kibber	Lahaul & Spiti	2220.12
13	Kugti	Chamba	379.00
14	Lipa Asrang	Kinnaur	31.00
15	Majathal	Solan	30.86
16	Manali	Kullu	29.00
17	Nargu	Mandi	278.00
18	Pong Dam Lake	Kangra	207.59
19	Rakchham-Chitkul	Kinnaur	304.00
20	Renuka	Sirmour	4.00
21	Rupi-Bhaba	Kinnaur	503.00
22	Sechu-Tuan Nalla	Chamba	390.29
23	Sainj	Kullu	90.00
24	Shikari Devi	Mandi	29.94
25	Shimla Water Catchment	Shimla	10.00
26	Simbalbara	Sirmour	27.88
27	Talra	Shimla	46.48
28	Tirthan	Kullu	61.00
29	Tundah	Chamba	64.00
30	Water Supply Catchment	Shimla	10.00
National Parks			
1	Great Himalayan National Park	Kullu	765.00
2	Pin Valley National Park	Lahaul and Spiti	675.00
Conservation Areas			
1	Shilli Conservation Reserve	Solan	1.49

Sl. No.	Sanctuaries	District	Area (km ²)
2	Shri Naina Devi Conservation Reserve	Bilaspur	17.01
3	Darlaghat Conservation Reserve	Solan	0.67

Source: Himachal Pradesh State Forest Department.

C. Economic Resources

1. Industries

35. Being a hilly state, Himachal Pradesh has few large industrial units. As shown in **Table 7** below, the Kangra district also mainly has micro, small, and medium enterprises focusing on agro-products, textiles, furniture, etc.:

Table 7: Details of Existing Micro and Small Enterprises and Artisan Units in the District

NIC Code No	Type of Industry	Number of Units	Investment (lakh ₹)	Employment
20	Agro-based	3,203	9,004.22	1,376
22	Soda water	–	–	–
23	Cotton textile	32	75.70	197
24	Woolen, silk, and artificial thread-based clothes	–	–	–
25	Jute and jute-based	2	1.00	8
26	Ready-made garments and embroidery	18	75.60	69
27	Wood and wooden-based furniture	300	561.30	1,150
28	Paper and paper products	48	162.00	130
29	Leather-based	22	292.85	328
31	Chemical and chemical-based	130	4,524.04	1,338
30	Rubber, plastic, and petro-based	59	450.29	295
32	Mineral-based	150	765.77	1,942
33	Metal-based (steel fabrication)	05	131.01	29
35	Engineering units	362	10,231.30	6,286
36	Electrical machinery and transport equipment	48	120.03	617
97	Repairing and servicing	352	4,389.01	1,156
01	Others	60	30.08	320
	Kachori Making	80	160.04	272

Source: Government of Himachal Pradesh, District Industry Centre. Dharamshala.

2. Transportation

36. Women Polytechnic site is well connected by roads with all the important places in Himachal Pradesh like Kangra (71.2 km), Chamba (98), Dalhousie (81), Nadaun (90.6 km), Shimla (260 km), Palampur (90 km), Pathankot (37km), Dharamshala (63 km) and Hamirpur (116

km). The nearest rail head at Pathankot is 37 km away. The nearest airport is Pathankot at Gaggal. The distance of this airport from subproject site is 52.6 km. No clearance or permission from Airport Authority of India (AAI) is needed as proposed Polytechnic buildings are of low height buildings (Ground plus two) and at sufficient distance of 52.6 km.

3. Land Use

37. A study of the land use (Table 8) shows that majority of the district is under forest cover followed by land under cultivation. The land under permanent pastures and grazing is also significant (855 hectares). The barren land area is quite low. Overall it is concluded that land under agriculture is maximum due to plain areas in the district and these plain areas are close to Punjab border. The subproject site land use is non agriculture area. The change in land use for subproject site has been obtained from revenue authorities for construction of Women Polytechnic at site.

Table 8: Land Use Pattern of Kangra District

Land Use	Area (hectare)
Area under forest, dense and open forest	2,317
Barren and uncultivable land	150
Non agriculture area	781
Permanent pasture and other grazing	855
Land under miscellaneous tree, crops, and groves	82
Culturable wastes	285
Other fallow land	119
Net area sown	1,150

38. **Agricultural Development.** Agriculture is the main occupation of the people in Kangra district. However, intensive cultivation is not possible as significant part of the district is mountainous. Agricultural activities are common on the gentle hill slopes and in relatively plain, broad river valleys. Fruits and cash crops are a major source of income. The chief food crops cultivated include wheat, maize, rice, barley, seed-potato, ginger, vegetables, vegetable seeds, mushrooms, chicory seeds, hops, and fig.

4. Electrification

39. Most of the villages (93%) in Kangra district have been electrified. More than 95% of the villages in Panchrukhi, Bhawarna, Lambagaon, and Sulah have been electrified.

D. Social and Cultural Resources

1. Population and Communities

40. The total geographical area of Kangra district is 5,739 km², which is 10.31% of the total area of Himachal Pradesh. Area-wise, district Kangra is next only to Lahaul and Spiti (13,835 km²), Chamba (6,528 km²), and Kinnaur (6,401 km²). At 1.3 million, the district accounts for the highest share (22.01%) of the total population in the state. Along with Hamirpur and Mandi, this district (1,025) is among the chosen three districts that have a favorable sex ratio of above 1,000.

The Kangra district has a fairly high population density of 233 persons per km² as compared to the average statewide density of 109 persons. As regards the other demographic indicators, while literacy (80.1%) in the district was higher than state (76.1%) figure, it performed below the state with respect to birth rate and death rate statistics. Average population per village stood at 350 persons in the district.

41. The native people are the Kangri people. The native language is Kangri, which is very similar to Punjabi. The majority of the people are Hindu Brahmin, Rajputs, Baniyas, and scheduled castes and scheduled tribes. There are also minority populations of Sikhs, Muslims and Christians. The traditional dress for men is the *kurta, pyjama*, and a woolen jacket used in winter. Women generally wear the *salwar kameez*.

2. Health Facilities

42. Kangra district has one health sub center for every 3,117 persons in the district. Likewise, one primary health center (PHC) is catering to the health needs of 17,345 persons in the district. These figures are slightly higher for the district when juxtaposed against the state level figures. On the other hand, when seen in terms of area coverage, while there is one subcenter for every 13.22 km² of area in the district, for the state one subcenter has to cater almost double the area of 26.91 km². The same is true for PHC and community health center area coverage. In terms of number of inhabited villages coverage by these sub-center, PHCs and community health centers, there is not much difference for the district and the state. One subcenter is meeting the health needs of 8.34 inhabited villages in the district. Likewise, there is one PHC for 46.40 villages in the district.

3. Education facilities

43. In the Kangra district, there are 923 primary schools, 135 middle schools, 119 secondary and senior secondary schools, 16 colleges, 12 technical institutions to provide quality education.

E. Archaeological Resources

44. There are no heritage sites notified by Archaeological Survey of India (ASI) within or near the subproject area. Similarly, no common property resources such as public wells, water tanks, play grounds, common grassing grounds or pastures, market areas and community buildings will be affected by the proposed subproject.

IV. ENVIRONMENTAL IMPACT AND MITIGATION MEASURES

A. Environmental Impacts

45. Any project creating physical infrastructure will cause some minor impacts on the environment. This IEE examines the potential impacts anticipated during the construction and operation of the subproject, namely "Women's Polytechnic at Rehan" including:

- (i) **Location impacts.** Impact associated with site selection including effect on the environment and resettlement or livelihood-related impacts on communities.
- (ii) **Design impacts and preconstruction impacts.** Impact arising from project design, including the technology used, scale of operations, discharge standards, topographic survey, geotechnical survey, etc.

- (iii) **Construction impacts.** Impact resulting from construction activities including site clearance, earthworks, civil works, etc.
- (iv) **Operation and maintenance impacts.** Impact associated with the operation and maintenance of the infrastructure built in the subproject.

46. ADB's Rapid Environmental Assessment checklist for Buildings was used while screening the site and recommending mitigation measures.

B. Location Impacts

47. The subproject site is located on unencumbered land owned by the Department of Technical Vocational and Industrial Training (**Appendix 5 and 6**). No new land has been acquired for the subproject, nor has anyone been displaced in anticipation of the proposed ADB project. There are no significant ecological resources in the surroundings of the proposed Women's Polytechnic. There are no heritage sites notified by ASI (state archaeological department) within the subproject area or in the immediate surroundings. No significant impacts can arise due to project location as the Polytechnic Buildings will not impinge upon any area of ecological, archaeological or historical importance. The Polytechnic site is in the open area near the Rehan village. Necessary permissions from authorities have been obtained while getting the land transferred in the name of DOTE.

48. The Women Polytechnic site is located within seismic zone V and even a small magnitude earthquake may damage the institute buildings.

C. Impacts during Design and Preconstruction Phase

49. As noted above, the proposed subproject site is owned by the DOTE. There are no issues arising due to land acquisition or involuntary resettlement. There is need to cut 6 Eucalyptus trees (girth size 60-70 cm). These varieties of Eucalyptus trees are not endangered or critically endangered. These trees are old and site is also devoid of natural shrubs in the most portions. Based on the environmental screening of the subproject area, there are no significant adverse environmental impacts during the design and preconstruction phases.

D. Impacts during Construction Phase

50. All construction activities to be undertaken at the site of Women' Polytechnic will be approved by the PMU. The construction stage impacts due to the proposed project components are generic to the construction activities. The EMP emphasizes on the construction impacts and necessary mitigation measures to be strictly followed by the contractor and supervised by the PWD and PIU. The key potential impacts are covered in the following paragraphs.

51. Impact due to stock piles of construction materials. Improper stockpiling of construction materials in and around the polytechnic site could obstruct movement along access roads and nearby drainage. Hence, due consideration will be given for proper material storage on construction sites. Stock piles will be covered to protect from dust and erosion. Waste materials will be disposed off at identified and approved locations.

52. Disposal of construction waste. The construction waste could lead to untidy conditions at site and may find its way to local urban drains and natural streams and siltation and obstruction to natural flow in these drains and streams. In the proposed subproject, it shall be mandatory for the contractors to ensure proper disposal of the construction waste at the disposal site as

designated by the PWD.

53. Quarry and/or borrow pits operations. Since the civil works are of a small size, all construction material will be procured from market. There will not be any need for direct procurement of stones and building material from quarries.

54. Increase in noise levels. Noise levels in the immediate proximity of subproject site are expected to increase somewhat during construction. However, these will be largely imperceptible as civil works will be confined to relatively small area. The duration of construction will also be relatively brief. Transportation of construction materials will be confined to daytime, depending upon extent of construction activity. The increase in noise levels is expected to be between 5%–10% of ambient noise levels. This increase will be felt up to a distance of 500 m only. This noise will be intermittent in nature, and will last only during the construction phase. The construction noise will be felt by the private polytechnic located close to the polytechnic site but this will be intermittent in nature and at these locations noise levels are not anticipated to exceed the stipulated limits of residential areas. It may be mentioned that there are no residential houses in close proximity of Women's polytechnic. But necessary monitoring of noise levels will be taken up as part of environmental monitoring plan.

55. Impacts on biodiversity during construction phase. No major impacts are expected on the biodiversity during the construction phase as the sub project site is open, and there is requirement for cutting of 6 none productive eucalyptus trees. Some of the scattered wild shrubs will have to be cleared for the construction of the Polytechnic buildings. As part of compensatory plantation, 60 trees will be planted in the vacant space along the periphery of the polytechnic campus. Out of these 60 trees at least 20 Eucalyptus trees will be planted belonging to same variety as existing at site. Around 50 shrubs will also be planted along the internal roads. There are no endangered or rare species of flora and fauna at the subproject site.

56. Disturbance to traffic during construction phase. At the time of construction, there will be some temporary inconvenience due to transportation of building materials and clearance of debris by trucks. However, since the scale of civil works is relatively small, the inconvenience caused will be relatively minor and limited only to the construction phase. A sample Traffic Management plan is attached in **Appendix 7**.

57. Impact on cultural properties. The proposed subproject will not have any impact on any religious structure or any other structure of historical and/or cultural significance.

58. Groundwater. Ground water will not be extracted and used for construction purposes. The contractor will arrange for water from the market. It will be supplied by water tankers. The problem of ground water contamination is also not anticipated during the construction phase since there will be proper disposal of the waste water.

59. Ambient air quality. Generation of dust is anticipated during transportation, excavation, and construction activities. Some dust and gaseous emissions will also be generated during the construction period from machines such as mixers, and vehicles engaged in transportation of construction materials. Pollutants of primary concern at this stage include respirable and suspended particulate matter and gaseous emissions (nitrogen oxide, sulfur dioxide, carbon monoxide, etc.). However, transportation of construction materials will be confined to a few trips per day depending upon the extent of construction activity. Therefore, impact at this stage will be temporary and restricted to the close vicinity of the construction site only.

60. All vehicles and construction equipment operating for the contractor and the consultant will obtain and maintain "Pollution under Control" certificates. To control dust emissions, vehicles deployed for transporting material, sand, and aggregate haulage, will be covered with tarpaulins to prevent spillage. Regular sprinkling of water during excavations, loading, unloading, vehicular movement, and raw material transport will prevent spread of dust and other contaminants. Periodic air quality monitoring will be conducted to ensure that emissions will comply with the vehicle emission standards specified by the Government of India and ambient air quality standards specified by the Central Pollution Control Board. The contractor will submit emission monitoring results as a compliance with environmental monitoring plan.

61. **Construction waste.** Some waste will be generated due to excavated earth material and waste from construction. Debris and excavated earth material can be reused subject to the approval of the PWD engineer during construction. Waste generated during construction and demolition will be disposed off as per law to the satisfaction of the engineer. The clean-up and restoration operations will be implemented by the contractor prior to demobilization. The contractor will clear all temporary structures and dispose off all garbage from construction site. All construction zones used and affected by the subproject will be left clean and tidy, at the contractor's expense as per the satisfaction the engineer.

62. The contractor is likely to engage local labor for various construction activities. However, in case of migrant labor has to be engaged, the contractor will establish properly designed labor camps with all basic amenities such as potable drinking water supply and sanitation facilities (septic tanks and soak pit). Dust bins will be placed in adequate numbers. The EMP lays down some measures to address likely adverse impacts associated with the labor camp.

E. Environmental Impacts during Operation Phase

63. Since only educational activities will be undertaken at the Women's Polytechnic, there will not be any adverse environmental impact during operation. The subproject design provides for adequate parking, accommodation, and safe disposal for waste water and solid waste. Toilet blocks with septic tank and soak pits have been included in the design. The solid waste generated at Polytechnic during operation phase will be segregated. Its disposal will be integrated with Rehan waste disposal. There may be generation of some waste on account of maintenance and operation of solar water heating system. The supplier of the solar water heating system will be responsible for collecting the waste for possible reuse and recycling. Since septic tanks and soak pits have been proposed for disposal of waste water, therefore, regular maintenance and cleaning of these needs to be undertaken as part of Polytechnic operation and maintenance.

64. Given the residential nature of Women's Polytechnic (Students Hostels and staff quarters), there will not be any significant vehicular increase on account of its operations. Traffic on the road connecting to the polytechnic is insignificant. Hence vehicular emissions on account of traffic movement will be insignificant. A diesel generator will be required, but only during power cuts. The generator will be of the silent type, and will comply with the levels stipulated by Pollution Control Board.

65. The water requirements for the during the operation phase will be met from ground. Though the requirement not significant, but continuously withdrawal will have impact on ground water table in the surroundings of institution.

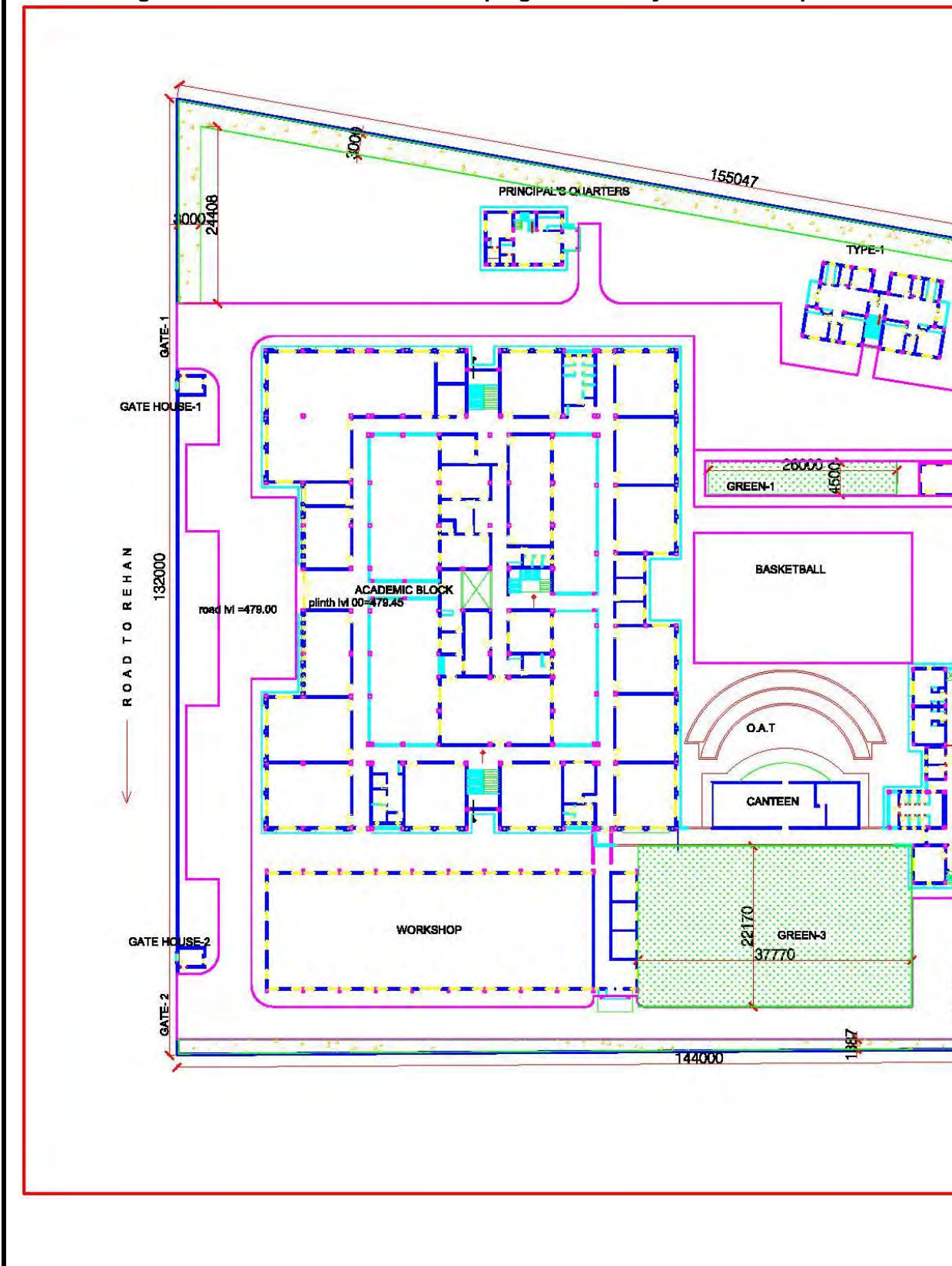
66. Safety measures. The design of the Women Polytechnic Buildings includes structural and seismic safety measures required by India's latest building codes (in seismic zone V). The other safety features are explained below:

- The Women's Polytechnic Campus will be equipped with fire-fighting systems with portable fire extinguishers and smoke detectors. The staircase will have adequate width to allow for people to exit the Polytechnic building during any fire-related or other eventuality.
- During natural calamities, the operations will be stopped. The trainees and staff will be safely evicted as per the disaster management plan of DOTE.
- Small dispensary will be provided for first aid and preliminary treatment.

67. Socioeconomic impacts. The functioning of Women's Polytechnic will have a positive development impact since it will facilitate female students perusing technical qualification, which many students are not able to get because of distance constraint. This polytechnic will also help in reducing gender gap in terms of technical education in the State of Himachal Pradesh. Technical skills gained by the female students will help to improve economic status.

68. Flora and fauna. Since the Women's Polytechnic is planned to be located near Rehan village, no adverse impact on fauna and flora is anticipated due to its operation as there will be no generation of any industrial effluent or water pollution. To enhance the natural look of the Polytechnic campus, planting of shrubs and landscaping will be taken up along the pathways and vacant space. Trees will be planted along the boundary wall of the Polytechnic. About 109 shrubs will be planted on the side slopes of internal roads. The area available for tree plantation and shrubs plantation is 984.10 m², whereas area available for landscaping is 2268.38 m². Total area available for landscaping and plantation is around 18.6 % of total plot area of site (17511m²). These areas have been shown in Figure-11below:

Figure 11: Plantation and Landscaping area in Polytechnic Complex



69. Emergency Plan for Accident and Natural Hazards- For operation phase onsite emergency plan will be prepared by the Principal of Women Polytechnic for minor accidents and fire. For natural calamities the Disaster Management Plan prepared by DOTE will be followed. The Disaster Management Plans have been prepared by the respective departments of GOHP as per provisions of Disaster Management Act 2005 of Government of India.

F. Description of Planned Mitigation Measures

70. Screening of environmental impacts is based on the magnitude and duration of the impacts. **Table 9** provides the potential environmental impacts and the mitigation measures including the institutional responsibilities for implementing the same. The subproject site is located sufficiently away from protected areas and the components proposed will not impact any environmentally sensitive or protected areas. All subproject activities including construction and operation will take place within available DOTE own land.

Table 9: Summary of Environmental Impacts and Planned Mitigation Measures

Sl. No.	Potential Environmental Issues	Duration / Extent	Magnitude	Proposed Mitigation Measures	Institutional Responsibilities
1: Location Impacts					
1.1	Lack of sufficient planning to assure long-term sustainability of the Polytechnic buildings and ensure protection specially from earthquakes and other natural disasters	Permanent	Major	The design of Polytechnic buildings has been done considering earthquake coefficient of zone V. The site is not on the bank of any river or major stream. During the earthquake or any other natural calamity Disaster Management Plan prepared by the DOTE will be followed.	PWD
2: Design and Preconstruction Impacts					
2.1	Consents, permits, clearances, NOC, etc.	Permanent	Major	Obtain all necessary consents, permits, clearance, NOCs, etc., prior to start of civil works. Acknowledge in writing and provide report on compliance for all obtained consents, permits, clearance, NOCs, etc. Include in detailed design drawings and documents all conditions and provisions, if necessary.	PWD
2.2	Layout of components to avoid impact on	Permanent	Major	Project components will not have any adverse impact on aesthetics of site	Not Applicable

SI. No.	Potential Environmental Issues	Duration / Extent	Magnitude	Proposed Mitigation Measures	Institutional Responsibilities
	the aesthetics of the site			as it involves construction of a building. Hence, no mitigation measures are warranted.	
2.3	Slope stability-related issues	Permanent	Minor	The Women's Polytechnic site is on plain land. No stability issue is involved. No mitigation measures are warranted.	Not applicable
2.4	Increased storm water runoff from alterations of the site's natural drainage patterns due to landscaping, excavation works, construction of buildings, parking lots, and addition of paved surface on account of internal roads.	Permanent	Moderate	Design of proposed Women Polytechnic will allow efficient drainage at the site and maintain natural drainage patterns.	PWD
2.5	Integration of energy efficiency and energy conservation programs in design of Women's Polytechnic Campus	Permanent	Moderate	The following measures have been included in the design to enhance energy efficiency: <ul style="list-style-type: none"> • Usage of recyclable materials like wood substitutes • Installation of Bureau of Energy Efficiency-certified equipment • Usage of energy-efficient lighting fixtures (LED and solar) • Provision of solar power generation for lighting and water heating. 	PWD
3: Construction Impacts					
3.1	Construction camp—location, selection, design and layout	Temporary	Moderate	The construction camp will be located within the Polytechnic plot. It will not affect the day-to-day activities of locals Rehan village. Adequate sanitation facilities shall be provided at camp site and no waste water will be discharged outside.	Contractor, PWD
3.2	Traffic circulation plan during	Temporary	Moderate	Prior to commencement of site activities and	Contractor, PWD

Sl. No.	Potential Environmental Issues	Duration / Extent	Magnitude	Proposed Mitigation Measures	Institutional Responsibilities
	construction			<p>mobilization on ground, the contractor will prepare a traffic circulation plan for safe passage of local traffic during the construction stage. This will include alternative access routes, traffic regulations, signages, etc. The contractor will get these plans approved from the PWD engineer at site.</p> <p>The contractor will disseminate the traffic circulation plan around the sub project site.</p>	
3.3	Impacts on flora and fauna (Cutting of 6 Eucalyptus Trees)	Temporary	Moderate	<p>Conduct site induction and environmental awareness. Limit activities within the work area.</p> <p>Prepare site landscape and shrub or tree plantation plan for compensatory plantation in 1: 10 ratio (minimum 60 trees and 50 shrubs.). Out of these 60 trees to be planted as a compensatory plantation, at least 20 Eucalyptus trees will be planted belonging to same variety as existing at site. Total area available for plantation is 984.41 m² and for landscaping 2268.38 m².</p>	Contractor, PWD
3.4	Site clearance activities, including delineation of construction areas for various buildings	Temporary	Moderate	<p>The commencement of site clearance activities will be undertaken with due permission from the environment specialist of the PWD and PMU to minimize environmental impacts.</p> <p>All areas used for temporary construction operations will be subject to complete restoration to their former condition with</p>	Contractor, PWD

Sl. No.	Potential Environmental Issues	Duration / Extent	Magnitude	Proposed Mitigation Measures	Institutional Responsibilities
				appropriate rehabilitation procedures	
3.5	Drinking water availability	Temporary	Major	Sufficient supply of potable water will be provided and maintained. The drinking water will be obtained from the market through authorized tankers. This water will be stored in a tank of suitable size to ensure uninterrupted water supply.	Contractor, PWD
3.6	Waste disposal	Permanent	Major	Location of disposal site for construction waste will be finalized by the environmental specialist of PWD and PMC. They will confirm that disposal of the material will not impact the water body or environmentally sensitive areas. They will also ensure that no endangered or rare flora is impacted by such materials.	Contractor, PWD
3.7	Stockpiling of construction materials	Temporary	Moderate	Stockpiling of construction materials does not impact nor obstruct drainage. Stockpiles will be covered to protect from dust and erosion.	Contractor, PWD
3.8	Soil erosion	Temporary	Moderate	Temporary slope protection may be required during construction at the excavated areas. Adequate measures will be taken up so that there is no soil erosion causing risks in the vicinity.	Contractor, PWD
3.9	Soil and water pollution due to fuel and lubricants, construction waste	Temporary	Moderate	The fuel storage and vehicle cleaning area will be stationed such that water discharge does not drain into the local drain. Soil and water pollution parameters will be monitored as per monitoring plan.	Contractor, PWD
3.10	Siltation of water bodies due to spillage of	Temporary	Moderate	No disposal of construction wastes will be carried out into any streams near the	Contractor, PWD

Sl. No.	Potential Environmental Issues	Duration / Extent	Magnitude	Proposed Mitigation Measures	Institutional Responsibilities
	construction wastes			subproject site. Extraneous construction wastes will be transported to the pre-identified disposal site for safe disposal.	
3.11	Generation of dust	Temporary	Moderate	The contractor will take every precaution to reduce the levels of dust at construction site. The construction site of Women's Polytechnic will be properly barricaded with adequate height prefabricated mild steel sheets from all sides to avoid air emissions and dust impacts on neighboring private polytechnic and Rehan village.	Contractor, PWD
3.12	Emission from construction vehicles, equipment and machinery	Temporary	Moderate	Vehicles, equipment, and machinery used for construction will conform to the relevant standards (vehicular emission standards of Government of India and CPCB specified standards for equipment and machinery) and will be regularly maintained to ensure that pollution emission levels comply with the relevant requirements.	Contractor, PWD
3.13	Noise pollution	Temporary	Moderate	Noise limits for construction equipment used in this project will not exceed 75 dB (A) at 1 m distance. The construction site of Women's Polytechnic will be properly barricaded with adequate height prefabricated mild steel sheets from all sides to avoid construction activity noise impacts on neighboring private polytechnic and Rehan village.	Contractor, PWD
3.14	Material handling at site	Temporary	Moderate	Workers employed on mixing cement, lime mortars, concrete, etc., will be provided with protective	Contractor, PWD

Sl. No.	Potential Environmental Issues	Duration / Extent	Magnitude	Proposed Mitigation Measures	Institutional Responsibilities
				<p>footwear and protective goggles.</p> <p>Workers who are engaged in welding works will be provided with welder's protective eye shields.</p> <p>Workers engaged in stone breaking activities will be provided with protective goggles and clothing.</p> <p>The use of any toxic chemical will be strictly in accordance with the manufacturer's instructions. The engineer will be given at least 6 working days' notice of the proposed use of any chemical. A register of all toxic chemicals delivered to the site will be kept and maintained up to date by the contractor.</p>	
3.15	Disposal of construction waste	Temporary	Moderate	Safe disposal of the construction waste will be ensured in the pre-identified disposal locations. In no case will construction waste be disposed of around the project site and especially in vacant plots in the locality.	Contractor, PWD
3.16	Safety measures during construction	Temporary	Moderate	<p>Adequate safety measures for workers during handling of materials at site will be taken up.</p> <p>The contractor has to comply with all regulations for the safety of workers. Precaution will be taken to prevent danger to workers from fire, accidental injury, etc. First aid treatment will be made available for all injuries likely to be sustained during the course of work.</p>	Contractor, PWD

Sl. No.	Potential Environmental Issues	Duration / Extent	Magnitude	Proposed Mitigation Measures	Institutional Responsibilities
				The contractor will conform to all anti-malaria instructions given to him by the engineer.	
3.17	Onsite emergency plan for minor accidents and mishaps and Disaster Management Plan for Natural Calamities	Temporary	Major in case of natural calamity and minor in case of accidents or mishaps at construction site	The onsite emergency plan will be prepared by the contractor in consultation with PWD and PMC. For natural calamities, disaster management plan prepared by the PWD under the provisions of Disaster Management Act 2005 will be followed.	Contractor
3.18	Clearing of construction of camp and restoration	Temporary	Major	Contractor will prepare site restoration plans for approval by the engineer (PWD). The plan is to be implemented by the contractor prior to demobilization. On completion of the works, all temporary structures will be cleared away, all rubbish burned, excreta, or other disposal pits or trenches filled in and effectively sealed off and the site left clean and tidy, at the contractor's expense, to the satisfaction of the engineer.	Contractor, PWD
4: Operation and Maintenance impacts					
4.1	Environmental Conditions	Temporary	Moderate	Air, water, noise and soil quality will be monitored periodically as per the environmental monitoring plan prepared. Adequate height boundary wall and plantation towards boundary wall of institution will be carried out to avoid any impacts from the polytechnic in the surroundings.	DOTe
4.2	Safety risks	Temporary	Major	<ul style="list-style-type: none"> Proper demarcation and flagging of the area requiring safety observations. 	DOTe

Sl. No.	Potential Environmental Issues	Duration / Extent	Magnitude	Proposed Mitigation Measures	Institutional Responsibilities
				<ul style="list-style-type: none"> Necessary precaution measures to be observed by visitors will be printed on boards and will be prominently put inside the Women Polytechnic Campus. 	
4.3	Unhygienic conditions due to poor maintenance of sanitation facilities and irregular solid waste collection	Temporary	Severe	DOTE will carry out maintenance of the toilets, and carry out the regular collection and disposal of waste to the local disposal site. The septic tanks will be emptied regularly.	DOTE
4.4	Onsite emergency plan for minor accidents and mishaps and Disaster Management Plan for Natural Calamities	Temporary	Major in case of natural calamity and minor in case of accidents or mishaps at construction site	The Principal of Women's Polytechnic will prepare on site emergency plan for possible minor accidents and mishaps during operation phase. For natural calamities, the disaster management plan prepared by DOTE will be followed.	Principal Women's Polytechnic for Onsite Emergency Plan and DOTE for Disaster Management Plan
4.5	Waste generated on account operation and maintenance of solar water heating system	Intermittent	Minor	The supplier of solar panels cells and water heating system will maintain the system. Any waste generated will be collected by the supplier for possible reuse and recycling. For this, necessary agreement will be prepared at the time of supply and installation.	Operator of solar panels and water heating system and Principal Women Polytechnic

DOTE = Department of Technical Education, Vocational and Industrial Training, HPKVN = Himachal Pradesh Kaushal Vikas Nigam, LED = light emitting diode, NOC = no objection certificate, PWD = Public Works Department.

Source: Asian Development Bank.

G. Land Aquisition and Resettlement

71. The proposed Women's Polytechnic will be located on land owned by the DOTE. Hence, there will not be any acquisition of private land. Since the proposed site is unencumbered land, there is no acquisition any private assets. At the subproject site, there are no squatters or encroachers. Hence, there is no requirement for any rehabilitation and resettlement.

V. ENVIRONMENT MANAGEMENT PLAN

A. Institutional Arrangements for Project Implementation

72. The Government of Himachal Pradesh through DOP is the executing agency. The executing agency (i) assumes overall responsibility for the execution of the project and reporting; (ii) engage adequate permanent or fixed-term staff to implement the Project; (iii) setup a state-

level project management unit (PMU) and project implementation units (PIUs) at local sub-project level; (iv) provides overall strategic guidance on technical supervision and project execution; and (v) ensures overall compliance with the loan covenants.

73. The implementing agencies in the project are HPKVN, DOTE, DOHE and PWD. For the current subproject implementing agencies are PWD and DOTE. The implementing agency responsibilities include (i) project planning and budgeting; (ii) day-to-day assistance, supervision and guidance for the project implementation units and their consultants; (iii) review sub-project for due diligence requirements and approve sub-project proposals; (iv) bidding, evaluation and contract award; (v) managing and disbursing funds; (vi) review compliance with loan covenants, contract specifications, work plans and quality control; and (vii) consolidate and submit progress reports, finance and accounting / audit reports, and matters requiring higher level decision to state-level empowered committee (SLEC) and ADB.

74. A State-level empowered committee (SLEC) has been established in Himachal Pradesh, chaired by State's Chief Secretary, with Principal Secretary / Secretary of the Department of Planning as Member Secretary and comprises of Secretaries from relevant line departments (PWD, DOUD, DORD, DOLE, HPKVN MD). The SLEC has been empowered to take all decisions on behalf of the State and will (i) act as a policy making body, (ii) provide overall advice and guidance to the State's executing agency and PMU, and (iii) accord all approvals under the project.

75. DOP will establish a PMU, headed by a full-time Project Director (PD) at HPKVN, and consisting of personnel drawn from relevant line departments and market. This PMU will also have safeguards expert (social and environment). The PMU will be supported by the Project Management Consultants (PMC). The PMU will be the nodal agency for overall management of all program activities and will be responsible for: (i) project planning and budgeting; (ii) providing day-to-day assistance, supervision and guidance for the PIUs and PWD; (iii) reviewing sub-projects to satisfy ADB's due diligence requirements and approving sub-project proposals submitted by PIUs and line departments; (iv) bidding, evaluation and contract award; (v) managing and disbursing funds; (vi) reviewing compliance with loan covenants, contract specifications, work plans and quality control; (vii) consolidating and submitting progress reports, finance and accounting/audit reports, and matters requiring higher-level decision, to the SLEC and ADB.

76. The sub-projects will be implemented by the Project Implementation Units (PIUs) at local level, comprising of personnel drawn from relevant line departments on deputation and outside of government and will be headed by a project manager. The PIUs will be responsible for: (i) prioritizing and preparing sub-project proposals; (ii) providing day-to-day assistance, supervision and guidance to the PWD and an agency to be hired for quality check; (iii) conducting detailed assessments and surveys including public consultation and input from stakeholders; (iv) preparing detailed designs, specifications, schedule of quantity, bidding documents, and related documentation; (v) implementing civil works and related activities; (vi) reporting to PMU; (vii) preparing regular progress reports for the SLEC, the executing agency and ADB through PMU; and (viii) supervising construction, conducting quality control, approving progress payments to contractors; and (ix) maintaining records and accounts on an up-to-date basis and making these available to ADB, its missions, or auditors for inspection.

77. The Project Management Consultant (PMC) is proposed to be engaged to provide support to the PMU in overall planning, risk management, implementation, monitoring and evaluation of projects under the HPSPD. The PMC will also assist the PMU and PIUs in meeting the relevant

requirements of ADB, GOHP, and GOI for project implementation. The PMC will report to and work under the overall guidance of the PMU. The scope of services of the PMC's will include but not necessarily be limited to: (i) planning, reporting, and communication; (ii) establishment of procedures and systems; (iii) review and preparation of plans, manuals and reports; (iv) overall project management, monitoring and implementation of MIS; and (v) social, environmental, archaeological, occupational health and safety, community participation and gender action compliance monitoring.

78. The executing agency will engage one agency for the quality check and to meet timeline requirements. This agency will work under the PMU. The scope of services of the agency will include but not necessarily be limited to: (i) surveys, verification of feasibility studies and base maps; (ii) project planning and management support to the PIU; (iii) finalization of design criteria, preparation of manuals, guidelines and systems; (iv) preparation of detailed design and bid documents; and (v) construction management and contract administration.

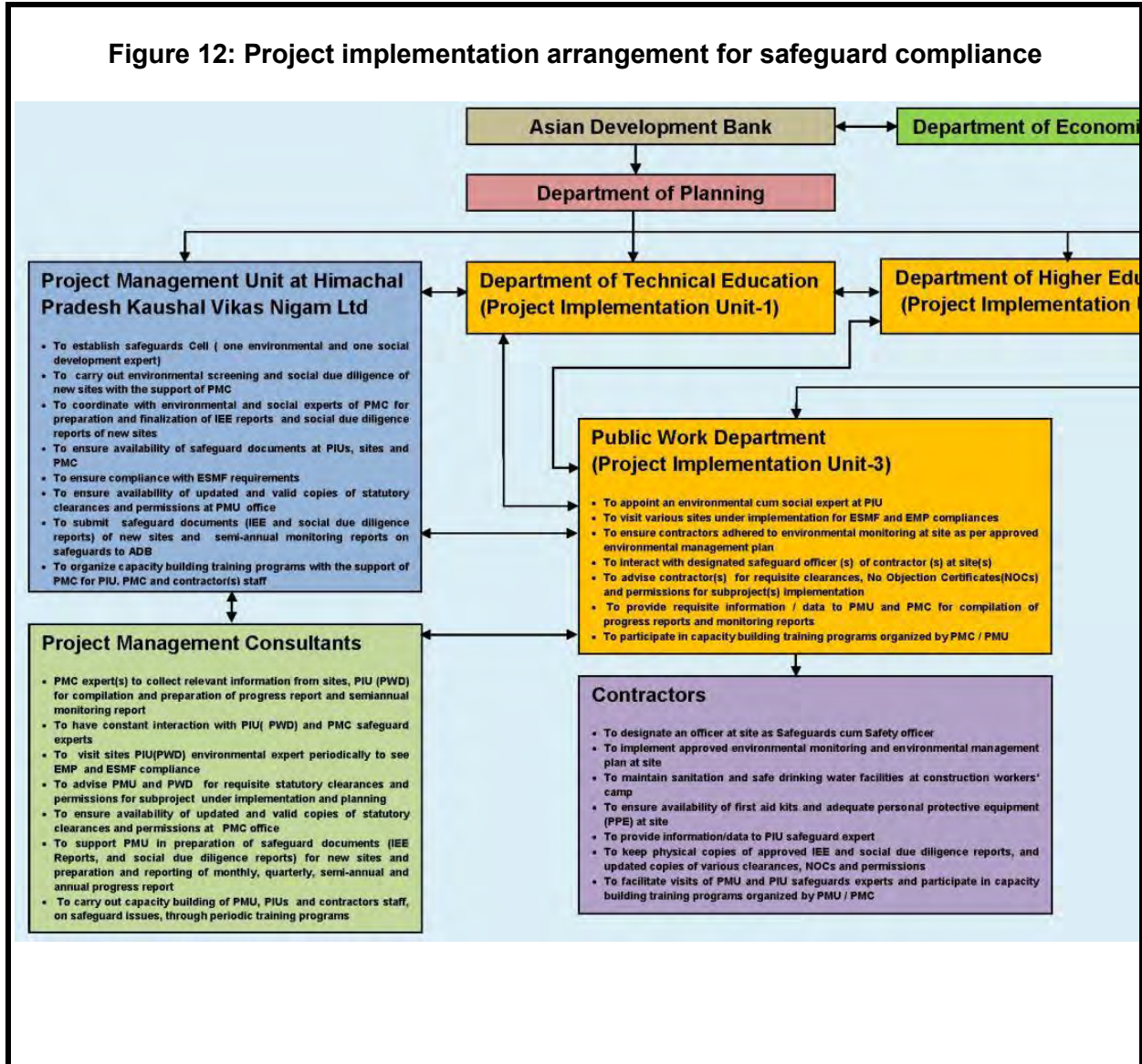
79. In order to ensure effective implementation of safeguard related components in the project PIU at PWD will include a safeguard expert (an environmental cum social expert) in the team. This safeguard expert will ensure compliance with ESMF and IEE requirements, and implementation of environmental management plan of sub-project at site through contractor.

80. The PMC will also have safeguard experts in their team to support PMU in reporting, safeguards related documents preparation, disclosure and capacity building of PIUs, PMU and contractors. The PMU at HPKVN will establish a safeguard cell comprising of an environmental expert, and a social development expert.

81. The contractor at polytechnic construction site will designate one officer as safeguard cum safety officer for the implementation of IEE and EMP requirements at site. The project implementation arrangement for safeguard compliance has been shown below in **Figure -12**.

82. The EMPs for pre construction, construction and operation phases are given in **Tables-10 to 12**.

Figure 12: Project implementation arrangement for safeguard compliance



B. Responsibility for updating IEE during Pre-Construction and Construction

83. **Responsibility for monitoring.** During construction, the Environmental Specialist of the Safeguards cell at PMU (at HPKVN) and the designated representative engineer of the PWD will monitor the contractor's performance. During the operation phase, monitoring will be the responsibility of the PMU. The Environmental specialist PMU will prepare semi-annual reports.

84. **Responsibility for Reporting.** PMU at HPKVN will submit semi-annual reports on the implementation of the EMP to ADB. It will permit ADB to field environmental review missions to examine in detail, the environmental aspects of the project. Any major lapses in adhering to the ESMF and IEE and / or EMPs for specific sub-projects should be reported to ADB immediately. The PMC's Environment Safeguard Specialist will assist the PMU in finalizing the semi-annual and annual progress reports. For any non compliance observed corrective actions will be taken in a time bound manner. The cost for mitigating non compliance will be borne by the contractor as per contract provisions. In case of mitigation costs not coming in scope of contract, these will be met out of contingencies built in EMP cost and in overall project cost.

Table 10: Environmental Management Plan for Preconstruction Phase

SI No.	Environmental Issues	Mitigation Measures	Parameter / Indicator for Compliance	Responsible for Implementation	Responsible for Supervision	Frequency for Monitoring	Fund Sources for Implementing Mitigation Measure
1	Lack of sufficient planning to assure long-term sustainability of the improvements and ensure protection of the assets created	<ul style="list-style-type: none"> Design has included provisions for ensuring effective maintenance and protection of the assets to be created to ensure their long-term sustainability. The long-term sustainability has been ensured by taking into consideration the appropriate Bureau of Indian Standards Codes for design, Seismic Zone V coefficient, appropriate wind load factor (corresponding to 39 m/s wind speed), and detailed design after carrying geotechnical investigations and topographic survey. 	Verification of design parameters	PWD	PWD	Review after completion of detailed project report	Project cost
2	Layout of components to avoid impacts on the aesthetics of the site	<ul style="list-style-type: none"> The project components sighting will avoid impacts on the aesthetics of the site and surroundings, and the Polytechnic Buildings will blend well with local building. 	Polytechnic building exterior	PWD	PWD	Review after completion of detailed project report	Project cost
3	Slope stability related issues	<ul style="list-style-type: none"> The plot area for the Polytechnic campus is flat, however, during 	Slope protection measure	PWD	PWD	Review of recommended slope	Project cost

S.I. No.	Environmental Issues	Mitigation Measures	Parameter / Indicator for Compliance	Responsible for Implementation	Responsible for Supervision	Frequency for Monitoring	Fund Sources for Implementing Mitigation Measure
		construction any exposed slopes at excavated areas will be covered and slope protection measures will be provided specially at side slopes of internal roads.	s on side slopes of access path, internal road, etc.			protection measures	
4	Increased storm water runoff from alterations of the site's natural drainage patterns due to landscaping, excavation works, construction of parking lot, and addition of paved surfaces	<ul style="list-style-type: none"> Design of proposed Polytechnic buildings enables efficient drainage of the plot and maintains natural drainage patterns. The storm water generated will be diverted to local drains through a properly constructed drainage system. 	Arrangement for proper diversion of storm water runoff	PWD	PWD	After mobilization of contractor at site and during establishment of construction camp	Incidental to construction cost
5	Integration of energy efficiency and energy conservation programs in design of subproject components	<ul style="list-style-type: none"> The detailed designs for the subproject have ensured that environmental sustainability principles, including energy efficiency, resource recycling, waste minimization, etc. The design considers the following energy efficiency measures: 	Specifications of rain water harvesting structures, electrical fixtures, details of water heating system	PWD	PWD	During finalization of detailed designs of Polytechnic buildings	Project cost

SI · N o.	Environmental Issues	Mitigation Measures	Parameter / Indicator for Compliance	Responsible for Implementation	Responsible for Supervision	Frequency for Monitoring	Fund Sources for Implementing Mitigation Measure
		<ul style="list-style-type: none"> - Usage of recyclable materials like wood substitutes. - Installation of Bureau of Energy Efficiency-certified equipment - Usage of energy efficient lighting fixtures (LED) - Provision of photovoltaic cells on roofs for solar power. - Rain water harvesting structures planned for ground water recharge and rain water collection. 					
6	Consents, permits, clearances, NOC, etc.	<ul style="list-style-type: none"> • Obtain all necessary consents, permits, clearance, NOCs, etc. prior to start of civil works. • Acknowledge in writing and provide report on compliance all obtained consents, permits, clearance, NOCs, etc. 	Consents, permits, clearance, and NOCs' records and communications	PWD	PWD	Check consent for establishment of construction camp and approval from civic authorities, DOTE, AICTE, for Women Polytechnic construction	Project cost
7	Establishment of baseline environmental	<ul style="list-style-type: none"> • Conduct documentation of location of components, 	Records and photographs	Contractor	PWD	Once prior to construction	Contractor

S.I. No.	Environmental Issues	Mitigation Measures	Parameter / Indicator for Compliance	Responsible for Implementation	Responsible for Supervision	Frequency for Monitoring	Fund Sources for Implementing Mitigation Measure
	conditions prior to start of civil works	<p>areas for construction zone (camp, staging, storage, stockpiling, etc.) and surroundings (within direct impact zones). Include photos and GPS coordinates.</p> <ul style="list-style-type: none"> Conduct base line monitoring in respect of ambient air quality, water quality, and noise levels as per monitoring plan 					
8	Utilities	<ul style="list-style-type: none"> The locations and operators of utilities to be impacted should be identified and documented in detailed project design documents to prevent unnecessary disruption of services during the construction phase. Require contractor to prepare a contingency plan to include actions to be done in case of unintentional interruption of services. Obtain from the PIU and/or PWD the list of affected utilities and operators. If relocations are necessary, contractor will 	<ul style="list-style-type: none"> List and maps showing utilities to be shifted Contingency plan for services disruption 	<ul style="list-style-type: none"> PWD will prepare preliminary list and maps of utilities to be shifted During detailed design phase, contractor to 	PWD	Preconstruction Phase	Contractor

SI No.	Environmental Issues	Mitigation Measures	Parameter / Indicator for Compliance	Responsible for Implementation	Responsible for Supervision	Frequency for Monitoring	Fund Sources for Implementing Mitigation Measure
		coordinate with the providers to relocate the utility.		ency plan			
9	Social and Cultural Resources	<ul style="list-style-type: none"> • Consult Archaeological Survey of India or Himachal Pradesh State Archaeology Department to obtain an expert assessment of the archaeological potential of Women Polytechnic site. • Consider alternatives if the site is found to be of medium or high risk. • Include state and local archaeological, cultural and historical authorities, and interest groups in consultation forums as project stakeholders so that their expertise can be made available. • Develop a protocol for use by the construction contractor in conducting any excavation work, to ensure that any chance finds are recognized and measures are taken to ensure they are protected and conserved. 	Chance find protocol	PWD	PWD	Prior to start of construction activities	Project cost
10	Construction camp—	<ul style="list-style-type: none"> • Sitting of the construction camp 	Construction	Contractor	PWD	At the time of	Contractor

S I . N O.	Environm ental Issues	Mitigation Measures	Paramet er / Indicato r for Complia nce	Responsi ble for Impleme ntation	Responsi ble for Supervis ion	Frequenc y for Monitorin g	Fund Sources for Implem ting Mitigation Measure
	location, selection, design and layout	<p>shall be as per the guidelines below and details of layout to be approved by PWD.</p> <ul style="list-style-type: none"> • Potential sites, within the Polytechnic plot, for the labor camp will be lined up to be visited by the environmental expert of PMU Safeguards Cell. The one having least impacts on the environment will be approved by the PWD and Safeguards Cell. The intention of establishing construction camp within Polytechnic plot is avoid impacts on surrounding land. • The storage location of construction materials shall be at the Polytechnic site or any building close to the Polytechnic site. • Construction camp sanitation facilities shall be adequately planned. 	camp site, and locations of material storage areas, sanitatio n facilities			constructio n camp establishm ent and finalization of storage areas	
1 1	Sources of constructio n materials	<ul style="list-style-type: none"> • Use quarry sites and sources licensed by the Government of Himachal Pradesh. If materials are procured from market, ensure 	Permits issued to quarries or sources of material s	Contracto r PWD to verify sources (including permits) if additional	PWD	Upon submissio n by contractor	Project cost

SI · N o.	Environm ental Issues	Mitigation Measures	Paramet er / Indicato r for Complia nce	Responsi ble for Impleme ntation	Responsi ble for Supervis ion	Frequenc y for Monitorin g	Fund Sources for Implemen ting Mitigation Measure
		<p>supplier source is from licensed quarries.</p> <ul style="list-style-type: none"> • Verify suitability of all material sources and obtain approval from PIU. • If additional quarries are required after construction has started, obtain written approval from PIU. • Submit monthly to PWD a documentation of sources of materials. 		is requested by contractor			
1 2	Access for construction material transportat ion	<ul style="list-style-type: none"> • Plan transportation routes so that heavy vehicles do not use narrow local roads, except in the immediate vicinity of site. • Schedule transport and hauling activities during nonpeak hours. • Locate entry and exit points in areas where there is low potential for traffic congestion. • Keep the site free from all unnecessary obstructions. • Drive vehicles in a considerate manner. • Coordinate with the Traffic Police Department for temporary road diversions and for provision of traffic 	Traffic management plan	Contractor	PWD	During delivery of construction materials	Contractor

SI No.	Environmental Issues	Mitigation Measures	Parameter / Indicator for Compliance	Responsible for Implementation	Responsible for Supervision	Frequency for Monitoring	Fund Sources for Implementing Mitigation Measure
		aids if transportation activities cannot be avoided during peak hours.					
13	Occupational health and safety	<ul style="list-style-type: none"> • Comply with International Finance Corporation Environmental, Health, and Safety Guidelines on Occupational Health and Safety in developing comprehensive site-specific health and safety plan. The overall objective is to provide guidance to contractors on establishing a management strategy and applying practices that are intended to eliminate, or reduce, fatalities, injuries, and illnesses for workers performing activities and tasks associated with the project. • Include in the health and safety plan measures such as (i) type of hazards in the construction of the Polytechnic buildings, (ii) corresponding 	Health and safety plan	Contractor	PWD	During construction phase	Contractor

SI No.	Environmental Issues	Mitigation Measures	Parameter / Indicator for Compliance	Responsible for Implementation	Responsible for Supervision	Frequency for Monitoring	Fund Sources for Implementing Mitigation Measure
		<p>personal protective equipment for each identified hazard, (iii) health and safety training for all site personnel, (iv) procedures to be followed for all site activities, and (v) documentation of work-related accidents.</p> <ul style="list-style-type: none"> • Provide medical insurance coverage for workers. 					
14	Public consultations	<ul style="list-style-type: none"> • Continue information dissemination, consultations, and involvement or participation of stakeholders during project implementation. 	Disclosure records; consultations	PWD	PWD	<ul style="list-style-type: none"> • During update of IEE report • During preparation of site- and activity-specific plans as per environmental management plan • Prior to start of construction • During construction 	Project cost

AICTE= All India Council of Technical Education, DOTE= Department of Technical Education, Vocational and Industrial Training, IEE = initial environmental examination, NOC = no objection certificate, PIU = project implementation unit, PWD = Public Works Department.

Source: Asian Development Bank.

Table 11: Environmental Management Plan for Construction Phase

SI · N o.	Environmental Issues	Mitigation Measures	Parameter / Indicator for Compliance	Responsible Implementation	Responsible Supervision	Frequency for Monitoring	Sources of Fund for Implementing Mitigation Measure
1	Sanitation facilities at construction camp	<ul style="list-style-type: none"> • The contractor shall provide sanitation facilities at the camp site. These facilities will include dust bins in adequate numbers for solid waste collection, and separate toilets for male and females. • Toilet facilities shall be maintained and septic tanks or soak pits shall be provided. The dust bins shall be regularly emptied and waste from camp site shall be disposed of at designated locations. 	Construction camp sanitation facilities	Contractor	PWD	Regularly during construction phase	Contractor fee
2	Traffic circulation plan during construction	<ul style="list-style-type: none"> • Prior to commencement of site activities and mobilization on ground, the contractor will prepare and get approval from the engineer (PWD) for a circulation plan during construction for safe passage of public vehicles so that locals are not inconvenienced. • The contractor with support of PIU will disseminate these information and circulation plan at the site and at key access roads to the Polytechnic site. 	Safe movement of traffic	Contractor	PWD	Every day during construction phase	Contractor fee
3	Site clearance	<ul style="list-style-type: none"> • Only ground cover or shrubs and trees 	Preconstruction	Contractor	PWD	Duration of site	Contractor fee

SI No.	Environmental Issues	Mitigation Measures	Parameter / Indicator for Compliance	Responsible Implementation	Responsible Supervision	Frequency for Monitoring	Sources of Fund for Implementing Mitigation Measure
	activities, including delineation of construction areas	<p>that directly affect the permanent works or necessary temporary works shall be removed with prior approval from the environmental expert of the PMU Safeguards Cell.</p> <ul style="list-style-type: none"> • All areas used for temporary construction operations will be subjected to complete restoration to their former condition with appropriate rehabilitation procedures. • Photographic records shall be maintained for the temporary sites used for construction. These will help in proper restoration. 	records of sites and vegetation in area of construction			preparation	
4	Drinking water availability at construction camp and construction site	<ul style="list-style-type: none"> • Sufficient supply of cold potable water to be provided and maintained. The drinking water will be obtained from the market. No public supply source in the vicinity of sub-project will be used for drinking or construction purposes. The drinking water will be stored in a suitable size storage tank to ensure uninterrupted availability. 	Water supply source and availability of water, source of water used by the tankers	Contractor	PWD	Regularly during construction phase	Contractor fee

S.I. No.	Environmental Issues	Mitigation Measures	Parameter / Indicator for Compliance	Responsible Implementation	Responsible Supervision	Frequency for Monitoring	Sources of Fund for Implementing Mitigation Measure
		<ul style="list-style-type: none"> Contractor will submit his plan on how availability of drinking water shall be assured. The original source of the water supplied by the tankers will be recorded. 					
5	Waste disposal	<ul style="list-style-type: none"> The pre-identified disposal location shall be part of the comprehensive waste disposal plan. A solid waste management plan will be prepared by the contractor in consultation with local civic authorities. The environmental specialist of PWD shall approve these disposal sites after conducting a joint inspection on the site with the contractor. Contractor shall ensure that waste shall not be disposed off near storm water natural drain in the surrounding of the site and along the access path. 	Waste disposal sites, waste management plan	Contractor	PWD	Regularly during construction phase	Contractor fee
6	Stockpiling of construction materials	<ul style="list-style-type: none"> Stockpiling of construction materials will be done in such a way that it does not impact and obstruct the drainage. Stockpiles will be covered to protect 	Subproject stockpiling sites	Contractor	PWD	Regularly during construction phase	Contractor fee

S.I. No.	Environmental Issues	Mitigation Measures	Parameter / Indicator for Compliance	Responsible Implementation	Responsible Supervision	Frequency for Monitoring	Sources of Fund for Implementing Mitigation Measure
		from dust and erosion.					
7	Arrangement for construction water	<ul style="list-style-type: none"> The contractor shall provide a list of locations and type of sources from where water for construction shall be acquired. To avoid disruption or disturbance to other water users, the contractor shall arrange water from the market through authorized tanker suppliers or from the local municipality and consult PWD before finalizing the source. 	Source of water used by the tankers	Contractor	PWD	Regularly during construction phase	Contractor fee
8	Soil erosion and water ponding on account of excavation	<ul style="list-style-type: none"> Slope protection measures will be undertaken as per design to control soil erosion especially on side slopes of access and internal roads. The excavation works will be avoided during monsoon months to avoid soil erosion, stagnation of water, and vector - borne diseases. 	Locations of slope protection	Contractor	PWD		Contractor fee
9	Water pollution from construction wastes	<ul style="list-style-type: none"> The contractor shall take all precautionary measures to prevent entry of waste water into any local stream during construction. 	Women Polytechnic site	Contractor	PWD	Regularly during construction phase	Contractor fee

SI · N o.	Environmental Issues	Mitigation Measures	Parameter / Indicator for Compliance	Responsible Implementation	Responsible Supervision	Frequency for Monitoring	Sources of Fund for Implementing Mitigation Measure
10	Water pollution from fuel and lubricants	<ul style="list-style-type: none"> • The contractor shall ensure that all construction vehicle parking locations; fuel and lubricants storage sites; vehicle, machinery, and equipment maintenance and refueling sites shall be located at least 500 m away from the natural streams. • Contractor shall ensure that all vehicles and machinery, as well as equipment operation, maintenance, and refueling shall be carried out in such a manner that spillage of fuels and lubricants does not contaminate the ground. • Waste water from vehicle parking, fuel storage areas, workshops, wash down, and refueling areas shall be treated in an oil interceptor before discharging it on land, or into surface water bodies, or into other treatment system. The waste oil skimmed from oil interceptor will be stored in leak proof drums and will be sold to authorize recyclers only. 	Vehicle parking, refueling sites, oil intercept or functioning	Contractor	PWD	Regularly during construction phase	Contractor fee

S.I. No.	Environmental Issues	Mitigation Measures	Parameter / Indicator for Compliance	Responsible Implementation	Responsible Supervision	Frequency for Monitoring	Sources of Fund for Implementing Mitigation Measure
11	Soil pollution due to fuel and lubricants, construction wastes	<ul style="list-style-type: none"> The fuel storage and vehicle cleaning area will be stationed such that spillage of fuels and lubricants does not contaminate the ground. Soil and pollution parameters will be monitored as per monitoring plan. 	Vehicle maintenance and parking area, soil quality monitoring results	Contractor	PWD	Regularly during construction phase	Contractor fee
12	Siltation of water bodies due to spillage of construction wastes	<ul style="list-style-type: none"> No disposal of construction wastes will be carried out into the surface water bodies. Extraneous construction wastes will be transported to the pre-identified disposal sites for safe disposal. 	Water bodies especially natural springs near subproject site	Contractor	PWD	Regularly during construction phase	Contractor fee
13	Generation of dust	<ul style="list-style-type: none"> The contractor will take every precaution to reduce the levels of dust at construction sites. Water will be sprayed as required, on locations of excavations, internal unfinished roads/walkways and locations of sand and sub grade storages. The water for spraying will be used from the water stored for construction. The water spray records will be maintained at site. 	Subproject site, air quality monitoring results, water spray records	Contractor	PWD	Regularly during construction phase	Contractor fee

SI · N o.	Environmental Issues	Mitigation Measures	Parameter / Indicator for Compliance	Responsible Implementation	Responsible Supervision	Frequency for Monitoring	Sources of Fund for Implementing Mitigation Measure
		<ul style="list-style-type: none"> • All filling works are to be protected or covered in a manner to minimize dust generation. In order to minimize dust impacts on the neighboring private polytechnic, the construction site will be protected through prefabricated Mild Steel sheets of adequate height. • The air quality monitoring will be conducted as per monitoring plan 					
14	Emission from construction vehicles, equipment and machinery	<ul style="list-style-type: none"> • All vehicles, equipment, and machinery used for construction shall conform to the Government of India vehicle emission norms. For equipment emission norms as specified in Environmental Protection Rules 2000 will be followed. • The discharge standards promulgated under the Environment Protection Act, 1986 shall be strictly adhered to. The silent or quiet equipment available in the market shall be used in the subproject. 	Pollution under control certificates (Vehicle emission norms specified by GOI) of vehicles and machinery	Contractor	PWD	Regularly during construction phase	Contractor fee

SI No.	Environmental Issues	Mitigation Measures	Parameter / Indicator for Compliance	Responsible Implementation	Responsible Supervision	Frequency for Monitoring	Sources of Fund for Implementing Mitigation Measure
		<ul style="list-style-type: none"> The Contractor shall maintain a record of pollution under control for all vehicles and machinery used during the contract period, which shall be produced for verification whenever required. 					
15	Noise pollution	<ul style="list-style-type: none"> The contractor shall confirm that all construction equipment shall strictly conform to the Ministry of Environment, Forests and Climate Change and Central Pollution Control Board noise standards. Contractor must ensure that all vehicles and equipment used in construction shall be fitted with exhaust silencers. At the construction sites, noisy construction work such as crushing, operation of diesel generator sets, use of high noise generation equipment shall be stopped during the night time between 10:00 p.m. to 6:00 a.m. Noise limits for construction equipment used in this project will not exceed 75 dB (A) 	Certificates of vehicles conforming noise standards, noise monitoring results	Contractor	PWD	Regularly during construction phase	Contractor fee

SI No.	Environmental Issues	Mitigation Measures	Parameter / Indicator for Compliance	Responsible Implementation	Responsible Supervision	Frequency for Monitoring	Sources of Fund for Implementing Mitigation Measure
		<p>at 1 m distance. However, noise levels as specified in ambient noise standards (55 dB(A) during day time and 45 dB(A) during night time) will be adhered to during the construction phase.</p> <ul style="list-style-type: none"> • Noise level monitoring will be carried out as per monitoring plan. • The construction site will be properly barricaded through Mild Steel sheets of adequate height to avoid noise impacts in the surroundings of Women's Polytechnic site. 					
16	Impacts on flora and fauna	<ul style="list-style-type: none"> • Conduct site induction and environmental awareness. • Limit activities within the work area. • Plant trees and shrubs in the area/space marked for plantation in the layout. A minimum of 60 trees will be planted to compensate for 6 Eucalyptus trees to be cut. Out of these 60 trees to be planted as a compensatory plantation, at least 20 Eucalyptus trees will be planted belonging 	Record barricades along excavation works. Note trees and shrubs planted by the project.	Contractor	PWD	Regularly during construction phase	Contractor fee

SI · N o.	Environmental Issues	Mitigation Measures	Parameter / Indicator for Compliance	Responsible Implementation	Responsible Supervision	Frequency for Monitoring	Sources of Fund for Implementing Mitigation Measure
		<p>to same variety as existing at site. This compensatory plantation will be taken up along boundary wall. Total area available for plantation is 984.41 m². There will be plantation of about 50 shrubs also as shown in drawing (Figure-10). The landscaping works will be taken up in 2268.38 m² area ear marked in the drawing.</p>					
17	Material handling at site	<ul style="list-style-type: none"> • Workers employed on mixing cement, lime mortars, concrete, etc., will be provided with protective footwear and protective goggles. • Workers engaged in welding works will be provided with welder's protective eye shields. • The use of any toxic chemical will be strictly in accordance with the manufacturer's instructions. The PWD will be given at least 6 working days' notice of the proposed use of any chemical. A register of all toxic chemicals delivered to the site will be kept and maintained up to 	Data on available personal protective equipment	Contractor	PWD	Regularly during construction phase	Contractor fee

SI No.	Environmental Issues	Mitigation Measures	Parameter / Indicator for Compliance	Responsible Implementation	Responsible Supervision	Frequency for Monitoring	Sources of Fund for Implementing Mitigation Measure
		date by the contractor.					
18	Disposal of construction waste, debris, cut material	<ul style="list-style-type: none"> The contractor shall confirm that safe disposal of the construction waste will be ensured in the pre-identified disposal locations. In no case will any construction waste will be disposed of around the project site indiscriminately. 	Disposal site	Contractor	PWD	Regularly during construction phase	Contractor fee
19	Safety measures during construction	<ul style="list-style-type: none"> Adequate safety measures for workers during handling of materials at site will be taken up. The contractor has to comply with all regulations for the safety of workers. Precaution will be taken to prevent danger to workers from accidental injuries, fire, etc. First aid treatment will be made available for all injuries likely to be sustained during work. The contractor will conform to all anti-malaria instructions given to him by the engineer. 	Records of availability of personal protective equipment, availability of first aid kits	Contractor	PWD	Regularly during construction phase	Contractor fee
20	Onsite emergency plan for minor accidents and mishaps and	<ul style="list-style-type: none"> 1-The onsite emergency plan will be prepared by the contractor in consultation with PWD and PMC/PMU. 	Onsite emergency plan document and Disast	Contractor	PWD	Mock Drill every quarter	Contractor

SI No.	Environmental Issues	Mitigation Measures	Parameter / Indicator for Compliance	Responsible Implementation	Responsible Supervision	Frequency for Monitoring	Sources of Fund for Implementing Mitigation Measure
	Disaster Management Plan for Natural Calamities	<ul style="list-style-type: none"> 2- For natural calamities, disaster management plan prepared by the PWD under the provisions of Disaster Management Act 2005 will be followed. 	Disaster Management Plan document of PWD				
21	Clearing of construction of camp and restoration	<ul style="list-style-type: none"> Contractor to prepare site restoration plans for approval by the engineer (PWD). The plan is to be implemented by the contractor prior to demobilization. On completion of the works, all temporary structures will be cleared away, all rubbish burned, excreta or other disposal pits or trenches filled in and effectively sealed off, and the site left clean and tidy, at the contractor's expense, to the entire satisfaction of the PWD. 	Restoration plan, and records of preconstruction of temporary sites	Contractor	PWD	End of construction phase	Contractor fee

NOC = no objection certificate, PIU = project implementation unit, PWD = Public Works Department, PMU= Project Management Unit, PMC= Project Management Consultant.
Source: Asian Development Bank.

Table 12: Environmental Management Plan for Operation Phase

Sl. No.	Environmental Issues	Mitigation Measures	Parameter / Indicator for Compliance	Responsible Implementation	Responsible Supervision	Frequency for Monitoring	Sources of Fund for Implementing Mitigation Measure
1	Environmental conditions	<ul style="list-style-type: none"> Periodic monitoring of the ambient air quality, noise level, surface water quality, soil quality in the subproject area as suggested in the monitoring plan through an approved monitoring agency. 	Monitoring results and relevant standards	DOTE through Pollution Monitoring Agency	HPKVN	As per monitoring plan	DOTE
2	Unhygienic conditions due to poor maintenance of sanitation facilities and irregular solid waste collection	<ul style="list-style-type: none"> DOTE through Principal Women's Polytechnic will maintain toilets, and carry out the regular collection and disposal of wastes to a designated waste 	Maintenance schedule of Polytechnic building and facilities drawn up	DOTE	HPKVN	Every year during tourist season	DOTE

Sl. No	Environmental Issues	Mitigation Measures	Parameter / Indicator for Compliance	Responsible Implementation	Responsible Supervision	Frequency for Monitoring	Sources of Fund for Implementing Mitigation Measure
		treatment site. <ul style="list-style-type: none"> • Solid waste disposal will be integrated with Rehan waste disposal. Septic tanks will be regularly emptied and maintained. 					
3	Natural disasters	<ul style="list-style-type: none"> • Necessary procedures to be followed by the visitors and Polytechnic students, and teaching staff during the natural disasters shall be written at prominent locations. 	Warnings of disasters by the Meteorological Department	District administration	HPKVN	During disasters	Government of Himachal Pradesh
4	Waste Generation on account of maintenance and operations	<ul style="list-style-type: none"> • The solar water heating system will be 	Waste generated from the operation and maintenance	DOTE and supplier of solar Water heating system	HPKVN	During entire operation phase	DOTE

Sl. No.	Environmental Issues	Mitigation Measures	Parameter / Indicator for Compliance	Responsible Implementation	Responsible Supervision	Frequency for Monitoring	Sources of Fund for Implementing Mitigation Measure
	of solar water heating system	maintained and operated by the supplier. Any waste generated will be taken by the supplier for possible reuse and recycle. For this, necessary agreement will be made at the time of supply.	e of solar PV cells				
5	Onsite emergency plan for minor accidents and mishaps and Disaster Management Plan for Natural Calamities	The Principal of Women Polytechnic will prepare onsite emergency plan for possible minor accidents and mishaps for operational phase. For natural calamities, the disaster management plan prepared	Onsite Emergency plan document and Disaster Management Plan document	Principal Women's Polytechnic Rehan	DOTE	Mock Drills every quarter	Polytechnic functioning and operation cost

Sl. No.	Environmental Issues	Mitigation Measures	Parameter / Indicator for Compliance	Responsible Implementation	Responsible Supervision	Frequency for Monitoring	Sources of Fund for Implementing Mitigation Measure
		by DOTE will be followed.					
6	Maintenance of plantation and Landscape area in the polytechnic campus	The principal of Women Polytechnic through appropriate support staff will be responsible for maintenance of shrubs, tree plantation and landscape areas. Minimum 90 % survival of plants and shrubs will be maintained. Any shortfall will be made up before onset of monsoon every year.	Survival of planted trees, shrubs, and grass in landscape area.	Principal Women's Polytechnic Rehan	DOT E	Every year before onset of monsoon	Polytechnic functioning and operation cost

DOT E = Department of Technical Education, Vocational and Industrial Training, HPKVN = Himachal Pradesh Kaushal Vikas Nigam, PIU = project implementation unit, PWD = Public Works Department.
Source: Asian Development Bank.

C. Emergency Response Plan

85. The Government of India enacted the Disaster Management Act in 2005. To implement this Act, the National Disaster Management Authority has been established at the central level and State Disaster Management Authorities (SDMA) was established in each state including Himachal Pradesh. The Chief Minister is the chairman of Himachal Pradesh SDMA.

86. As per Section 40 of the Disaster Management Act, 2005, each government department, in conformity with the guidelines laid down by the SDMA, shall draw up their own disaster management plans.

87. Accordingly, a general disaster management plan for the entire state was prepared by the Public Works Department (PWD) in 2015.

88. Similarly, DOTE, prepares disaster management plan focusing on their own facilities falling in different parts of Himachal Pradesh.

89. These plans prepared by PWD and DOTE cover natural calamities including earthquakes, floods, cloud bursts, landslides, and avalanche as relevant. They also lay down clear procedures which have to be followed during natural calamities.

90. Further, all public and private structures have to be designed on the basis of the seismic zoning and structural engineering standards prescribed by the Bureau of Indian standards and the provisions of India's National Building code. These codes cover all aspects of building construction including administrative regulations, development control rules; fire safety requirements; stipulations regarding materials, structural design and construction (including safety).

91. Himachal Pradesh has adopted robust standard operating procedures (SOP) for responding to any disaster. It has also established an incident response system, which is activated after any event for search, evacuation, rescue, relief and rehabilitation. The SOP lays down, in a comprehensive manner, the specific actions required to be taken by various departments and agencies of Government of Himachal Pradesh, as well as organizations under the control of Government of India for responding to natural disasters. The SOP covers the preparedness, early warning, response, relief and restoration phases of disaster management for effective and efficient response.

92. During the construction phase (24 months), the Polytechnic site will be under PWD's jurisdiction. Hence, PWD will be responsible for ensuring that the civil contractors follow relevant building codes and safety norms.

93. During the operation phase, the Women's Polytechnic will come under DOTE's control. Therefore, it will be responsible for following the relevant aspects of the disaster management plan prepared by the DOTE.

94. Hence, instead of preparing a separate emergency response plan for the project or any sub-project (and might be redundant exercise). All the statutory provisions of GOHP and the Government of India, including those pertaining to disaster mitigation and response requirements, needs to be adhered to through Disaster Management Plans of PWD during construction and DOTE during operation.

D. Environmental Monitoring Plan

95. Environmental monitoring (covers EMP and all of the Government of Himachal Pradesh's rules with respect to the environment, and handling of solid and liquid waste) at site will be undertaken by the contractor during preconstruction and construction stages, and be monitored by PWD. Environmental monitoring during post construction will be undertaken by the DOTE and be monitored by HPKVN. The environment and social safeguards specialists of PMC will coordinate with PWD and DOTE to ensure environmental parameters are monitored and reported.

96. An EMP has been prepared to ensure the effective implementation of mitigation measures to address all the environmental issues during construction and operation phase of the subproject. The proposed environmental monitoring plan covering all relevant environmental parameters, with a description of the sampling stations, frequency of monitoring, applicable standards, and responsible agencies is presented in the **Table 13** below.

Table 13: Monitoring Plan for Women's Polytechnic Subproject for Preconstruction, Construction, and Operation Phases

Sl. No	Field (environmental attribute)	Phase	Parameters to be Monitored	Locations	Frequency	Responsibility	Cost (INR/US\$)
1	Air Quality	During preconstruction phase	Nitrogen oxide, sulfur dioxide, carbon monoxide, particulate matter (both 10 micrometers and 2.5 micrometers or less in diameter)	Polytechnic construction site at Rehan	Once in the preconstruction phase to establish baseline	Contractor through approved monitoring agency	Rs130,000/ \$2,000
		During construction phase			Once in every 3 months (except monsoon season) during construction phase (24 months construction phase)		
		Operation phase			Once every season except during monsoon season during first 2 years		
2	Water quality	During preconstruction phase	Total dissolved solids, total suspended solids, pH, hardness, biochemical oxygen demand, fecal coliform	Polytechnic construction site groundwater	Once in preconstruction phase to establish baseline	Contractor through approved monitoring agency	Rs130,000/ \$2,000
		During construction phase			Once in every 3 months (except monsoon season) during construction phase		
		Operation phase			Once every season except during monsoon season during first 2 years		

SI. No	Field (environmental attribute)	Phase	Parameters to be Monitored	Locations	Frequency	Responsibility	Cost (INR/US\$)
3	Noise levels	During preconstruction phase	Noise quality as per National Ambient Noise Standards on dB(A) scale	Polytechnic construction site	Once in preconstruction phase to establish baseline	Contractor through approved monitoring agency	Rs39,000 / \$600
		During construction phase			Once every 3 months (except monsoon season) during construction phase		
		Operation phase			Once every season except monsoon season for first 2 years		

Source: Asian Development Bank.

E. Summary of Site- and Activity-Specific Plans

97. **Table 14** summarizes site- and activity-specific plans to be prepared as per EMP tables.

Table 14: Environmental Management Plan—Site and Activity Plans and Programs

Preparation Phase	Specific Plan/Program	Purpose	Responsible for Preparation	Responsible for Implementation
Preconstruction phase	Environmental monitoring program as per detailed design	Indicate sampling locations, methodology and parameters	PWD	Contractor
Construction phase	Erosion control and revegetation plan	Mitigate impacts due to erosion	Contractor	Contractor
Detailed design phase	List and maps showing utilities to be shifted	Utilities shifting	PWD during preliminary stage; contractor as per detailed design	Contractor
Detailed design phase	Contingency plan	Mitigate impacts due to interruption of services during utilities shifting	Contractor	Contractor
Preconstruction	Chance find protocol	Address archaeological or historical finds	PWD	Contractor
Preconstruction phase	List of preapproved sites	Location/s for work camp, areas for stockpile, storage and disposal	PWD	Contractor
Preconstruction phase	Waste or spoil management plan	Mitigate impacts due to waste generation	Contractor	Contractor
Construction phase	Traffic management plan	Mitigate impacts due to transport of materials and pipe-laying works	Contractor	Contractor
Construction phase	Health and safety plan	Occupational health and safety	Contractor	Contractor
Preconstruction phase	Spill prevention and containment plan	Mitigate impacts of accidental spills of oil, lubricants, fuels, concrete, and other hazardous materials	Contractor	Contractor

PWD = Public Works Department.

Source: Asian Development Bank.

98. An indicative traffic management plan is attached in **Appendix 7**.

F. Capacity Building

99. In addition to the primary objective of skills enhancement of Himachali youth, the current subproject will also raise awareness about environmental conservation among trainees, implementing agencies, and local communities. The project will have the opportunity to build capacity in environment protection for the abovementioned stakeholders. The environmental

specialists at PMC and Safeguards Cell at PMU will provide the basic training required for environmental awareness. Specific modules customized for the available skill set will be devised after assessing the capabilities of the members of the training program and the requirements of the project. The training would cover basic principles of environmental assessment and management, mitigation plans and programs, implementation techniques, monitoring methods and tools. The proposed training program along with the frequency of sessions is presented in **Table 15**.

Table 15: Training Modules for Environmental Management

Program	Description	Participants	Duration	Training Conducting Agency
A. PRECONSTRUCTION STAGE				
Sensitization Workshop on Environment	<ul style="list-style-type: none"> Introduction to Environment: environmental assessment and social due diligence requirements in the project, regulatory clearances, and permission requirements in the project Environmental management plan implementation, introduction of ADB Safeguard Policy Statement, 2009, and ADB Guidelines on Environmental considerations in planning, design and implementing projects 	DOTE officials involved in Women Polytechnic project, environmental specialist of PWD and other engineering staff associated with the subproject, PIU staff at site and HPKVN PMU staff	½ working day	Environmental specialist of project management consulting firm
Session 1	<ul style="list-style-type: none"> Environmental impacts due to subprojects in construction and operation phases, pollution generation activities during preconstruction and construction phases Environmental management, environmental provisions, implementation arrangements, methodology of assessment good engineering practices to be integrated into contract documents 	All PIUs, HPKVN staff	½ working day	Safeguards specialist of project management consulting firm
B. CONSTRUCTION STAGE				
Session 2	<ul style="list-style-type: none"> Roles and responsibilities of officials, contractors, consultants toward protection of environment Implementation arrangements and environmental monitoring during construction phase 	Engineers and staff of line departments of the Government of Himachal Pradesh, PMU, and PIU	½ working day	Safeguards Specialist of PMU / PMC
Session 3	<ul style="list-style-type: none"> Monitoring and reporting system 	Engineers and staff of implementing agencies, PMU, and PIU (including	¼ working day	Safeguards Specialist of PMU

Program	Description	Participants	Duration	Training Conducting Agency
		the environmental specialist)		

ADB = Asian Development Bank, DOTE = Department of Technical Education, Vocational and Industrial Training, HPKVN = Himachal Pradesh Kaushal Vikas Nigam, PIU = project implementation unit, PMU = project management unit, PWD = Public Works Department. Source: Asian Development Bank.

G. Environmental Budget

100. Most of the mitigation measures require the contractors to adopt good site practices, which should be part of their normal procedures already, so there are unlikely to be major costs associated with compliance. Only those items not covered under budgets for construction are included in the initial environmental examination (IEE) budget. The IEE costs include mitigation, monitoring, and capacity building costs. The summary budget for the environmental management costs for the subproject is presented in **Table 16**.

Table 16: Environmental Management and Monitoring Costs
(Indian Rupees)

Monitoring Component	Rate	Amount	Source of Fund
PRECONSTRUCTION AND CONSTRUCTION PHASE			
Air Quality One location at construction site, thrice a year (one sample at pre-construction and six samples during construction phase; total: seven samples)	10,000	70,000	Contractor
Water Quality One ground water sample from construction site (one sample at pre-construction and six samples during construction phase; total: seven samples)	10,000	70,000	Contractor
Noise Quality One location at project site (one sample at preconstruction and six samples during construction phase; total 7 samples)	3000	21,000	Contractor
Training for Capacity Building of stakeholders	Covered in the consultancy cost of the Public Works Department and the project management consulting firm		
Total Construction Phase Monitoring Cost (A)		161,000	Contractor
OPERATIONS & MAINTENANCE (O&M) PHASE			
Air Quality One location at Polytechnic site, thrice a year, for first 2 years (three samples a year, total of six samples)	10,000	60,000	PMU through DOTE
Water Quality One ground water sample at polytechnic construction site, thrice a year, for first 2 years (three samples a year, total of six samples)	10,000	60,000	PMU through DOTE
Noise Quality	3,000	18,000	PMU through DOTE

Monitoring Component	Rate	Amount	Source of Fund
One location at polytechnic construction site, thrice a year, for first 2 years (three samples a year, total of six samples)			
Capacity Building Expenses (five sessions)	90,000	450,000	PMU through DOTE
Maintenance of plantation, shrubs and landscape areas	Covered in operation and maintenance cost of Polytechnic institute		
Total O&M Phase Monitoring Cost (B)		588,000	PMU
Total Cost (A+B)		749,000	
Contingencies @ 5%		37,450	
Total Budgeted Cost		786,450 (around 800,000)	

DOTE = Department of Technical Education, Vocational and Industrial Training, PMU = project management unit.
Source: Asian Development Bank.

H. Environmental Monitoring and Reporting

101. The PWD will monitor and measure the progress of EMP implementation while supervising civil construction activities. PWD will undertake site inspections and document review to verify compliance with the EMP and progress toward the final outcome. PWD will submit monthly EMP monitoring and implementation reports to DOTE and HPKVN, who will take follow-up actions, if necessary. The HPKVN will review and consolidate the monthly reports to prepare semiannual monitoring reports to ADB.

102. ADB will review project performance against the executing agency's commitments as agreed in the loan documents. The extent of ADB's monitoring and supervision activities will be commensurate with the project's risks and impacts. Monitoring and supervising of social and environmental safeguards will be integrated into the project performance management system. ADB will monitor projects on an ongoing basis until a project completion report is issued.

VI. PUBLIC CONSULTATION AND INFORMATION DISCLOSURE

A. Process for Consultations Followed

103. This subproject does not involve any elements that could have an adverse impact on the community. There is no deprivation of any sort for the residents or displacement of any groups. Particularly as to environmental impacts, the subproject can be characterized as innocuous.

104. In view of this, the need for holding a public hearing (as defined in EIA Notification 2006 of the Government of India) is not perceived at this stage. However, in compliance with ADB's guidelines, focused public consultations were undertaken during the site visits in subproject area. Residents of the area were informed about the proposed subproject and their views were obtained. During the preparation of this IEE, consultations have been held with the officials of DOP, HPKVN, MOEFCC, DOUD, DOTE and other stakeholders such as Rehan Villagers, elected representatives of village Panchayat, and non government organizations namely 'Tapovan' and 'Gunjan' in Dharamshala. The process of consultations was taken up as an integral part of the subproject in accordance with the following objectives:

- (i) Educate the general public, especially potentially impacted or benefited communities, individuals, and stakeholders about the proposed subproject activities.
- (ii) Familiarize the people with technical and environmental issues of the subproject for better understanding.
- (iii) Solicit the opinion of the communities and individuals on environmental issues and assess the significance of impacts due to the proposed development;
- (iv) Foster cooperation among officers of PIU, the community, and the stakeholders to achieve a cordial working relationship for smooth implementation of the subproject.
- (v) Identify the environmental issues relating to the proposed activity.

105. During the consultations, local residents identified the need to develop the skills of local youth as there are limited employment opportunities in the state. The subproject building construction will lead to infrastructure creation for skill development. They demanded fast implementation of the subproject. The dates of consultations and stakeholders consulted are summarized in **Table 17**.

Table 17: Stakeholder Consultations and Dates

Sl. No.	Stakeholders Consulted	Dates of Consultations
1	Himachal Pradesh Forest Department	23 December 2015
2	Department of Rural Development, Department of Labor and Employment and Department of Higher Education	21 December 2015
3	Himachal Pradesh Pollution Control Board	23 December 2015
4	Department of Environment, Government of Himachal Pradesh; HPKVN; and Department of Planning	14–15 March 2016
5	Department of Technical Education, Government of Himachal Pradesh	12 December 2015 and 16–17 March 2016
6	Two NGOs namely 'Tapovan' and 'Gunjan' at Dharamshala	3 May 2016
7	Local public and elected representatives Rehan village Panchayat	4 May 2016

HPKVN = Himachal Pradesh Kaushal Vikas Nigam.

Source: Asian Development Bank.

106. The views, comments, and suggestions of stakeholders and their incorporation in project design are presented in **Tables 18 and 19**. The records of consultations (list of participants with signatures) and consultation photographs are given in **Appendix 8**. It is clear that most of the suggestions of stakeholders have been taken care in the project design.

Table 18: Views, Comments, and Suggestions of Stakeholders in Subproject Sites Addressed in Project Design

Sl. No.	Place	Date	Stakeholders	Issues Discussed	Outcome of Discussions and Consideration in Project Design and Implementation
1	Dharamshala	3/5/2016	Local non government organizations (Tapovan and Gunjan)	<ul style="list-style-type: none"> • Polytechnic site and need • Project benefits 	<ul style="list-style-type: none"> • The participants welcomed the project consultants. They emphasized that there is urgent need for promoting skills and livelihood development in the Kangra

Sl. No.	Place	Date	Stakeholders	Issues Discussed	Outcome of Discussions and Consideration in Project Design and Implementation
				<ul style="list-style-type: none"> • Implementation schedule • Environmental and social impacts during project implementation • Disruption to utility services 	<p>district. Mr. Sandeep, the NGO Chairperson, noted that most Himachali youth would prefer not to migrate out of the state for low-paying jobs. Hence, it is important to provide them with the right skills so that they can tap sustained livelihood opportunities within the state.</p> <ul style="list-style-type: none"> • The NGO suggested that information dissemination for Women's Polytechnic establishment should be done in the region so that parent knows about education facility available for girls in Kangra district. • The NGO and local participants from Dharamshala wanted skilling opportunities to focus on locally available materials such as bamboo and pine products. This would help to invigorate the local economy and create jobs. • Representatives of the local community were informed by the consultants that no disruption to utilities is foreseen. However, in case of any disruption, adequate advance notice will be given.
2	Polytechnic Site at Rehan	5/5/2016 and 10/4/2017	Local Rehan Village residents, DOTE officials, Teaching Staff of private polytechnic at Rehan and elected representatives of Rehan Village Panchayat	<ul style="list-style-type: none"> • Women's Polytechnic Layout • Suggestions about courses • Environmental and social impacts • Project benefits 	<ul style="list-style-type: none"> • The villagers and elected representatives welcomed the establishment of Women's Polytechnic and requested for early start of construction works. They assured all help during the project implementation. The environmental expert replied that site has been finalized and project will be

Sl. No.	Place	Date	Stakeholders	Issues Discussed	Outcome of Discussions and Consideration in Project Design and Implementation
				<ul style="list-style-type: none"> • Implementation schedule 	<p>implemented with ADB funding.</p> <ul style="list-style-type: none"> • Locals demanded that institute should offer courses suitable to girls and helpful in getting employment. The DOTE officials replied that courses have been finalized considering demand of students and quick employment. • The environmental expert requested the participants for suggestions to reduce pollution from the complex. The locals suggested that solar power should be planned and trees should be planted to compensate the tree cutting. The environmental expert replied that Roof Top Solar Power system has been planned and compensatory plantation will be taken up in 1: 10 ratio (10 new trees to be planted for every trees to be cut). • Some participants enquired about water source for the Polytechnic. The DOTE officials replied that a bore well will be established at site to meet raw water demand. The waste water generated from sanitation and floor washing will be diverted to septic tanks.

NGO= Non Government Organization, DOTE= Department of Technical Education, Vocational and Industrial Training.
Source: Asian Development Bank.

Table 19: Summary of Stakeholder Consultation at Institutional Level

Sl. No.	Place and date	Stakeholders	Issues Discussed	Outcome of Discussions and Consideration in Project Design and Implementation
1	Shimla, 23/12/2015	Conservator Forest cum Nodal Officer CAMPA, State	Clearances, permissions and No Objection Certificates	<ul style="list-style-type: none"> • The ADB Environment and Social Safeguards consultant briefly

Sl. No.	Place and date	Stakeholders	Issues Discussed	Outcome of Discussions and Consideration in Project Design and Implementation
		Forest Department	- requirements from the State Forest Department and suggestions for the project	<p>explained the project concept to the state department officials.</p> <ul style="list-style-type: none"> • Officials advised that for any site falling under forest land, clearance is required either under the Forest (Conservation) Act, 1980 or under the Schedule Tribe and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006. • For vocational training purposes, the Government of Himachal Pradesh can give clearance up to 1.0 hectare land. If application is submitted under the Forest (Conservation) Act, 1980, then the net present value of the land and cost for compensatory forestation are to be paid by the state government. • If the application is submitted under Forest Rights Act 2006, then for educational institutes, payment of net present value and compensatory afforestation costs are exempted for the land up to 1.0 hectare. The clearance can also be issued at the level of the divisional forest officer. • The Forest officials suggested that application may be made under the Forest Rights Act for faster clearance if any site falls under the forest. • The ADB consultant assured everyone that sites on forest land will not be considered to the extent feasible. However, under unavoidable situations, applications for clearances will be submitted as suggested. • Only the proposed women's polytechnic site at Rehan in Kangra district falls within revenue forest land. No objection certificate from forest department was received on 6 July 2016. Subsequently land has also been transferred in DOTE land.
2	Shimla, 23/12/2016	Senior Environmental Engineer, Himachal Pradesh	Clearances and permissions required from HPPCB and Department of Environment	<ul style="list-style-type: none"> • The ADB consultant provided an overview on the Himachal Pradesh Skill Development Project (HPSDP). He enquired about the types of permissions and clearances

Sl. No.	Place and date	Stakeholders	Issues Discussed	Outcome of Discussions and Consideration in Project Design and Implementation
		Pollution Control Board		<p>required from the HPPCB and State Department of Environment.</p> <ul style="list-style-type: none"> The senior environmental engineer, Department of Environment, replied that educational and training institutes are exempted from the environmental clearance process. Therefore, there is no requirement for prior environmental clearances for CLCs, RLCs, MCCs, and the Women's Polytechnic planned under HPSDP. He explained that consent to establish and operate has to be obtained from HPPCB only if a residential complex is planned at any of the sites. In case hazardous waste is generated, then a management proposal has to be submitted to the HPPCB for hazardous waste authorization and disposal. The ADB consultant replied that none of the planned training facilities will generate hazardous waste, during operation phase.
3	Sunder Nagar, 22/12/2015, 14/03/2016, and 15/03/2016	Director, DOTE, and other officials	ITI selected for upgrade, locations of RLCs and CLCs selected at ITI campus and site of proposed Women Polytechnic at Rehan in Kangra district	<ul style="list-style-type: none"> The ADB consultant enquired whether any of project sites under DOTE are planned in forest areas or within buffer or core zones of national park or bird sanctuary. Director, DOTE, replied that CLC and RLC sites planned are within the vacant sites within the premises of existing industrial training institutes. Only the site for the Women's Polytechnic in Kangra falls within revenue forest land. The ADB consultant suggested that DOTE should submit land ownership details and revenue records for all sites planned under the ADB funding for social due diligence. He noted that DOTE should also start the process of getting clearance / NOC from the Forest Department for the site in Rehan, Kangra, where the Women's Polytechnic is planned.
4	Shimla, 21/12/2015	Department of Labor and Employment	Locations of MCCs planned, approximate area required for MCCs	<ul style="list-style-type: none"> The ADB consultant enquired about the proposed locations of MCCs. The officials replied that with ADB assistance, 11 MCCs planned by upgrading existing employment

Sl. No.	Place and date	Stakeholders	Issues Discussed	Outcome of Discussions and Consideration in Project Design and Implementation
				<p>exchanges. One new MCC is planned at Hamirpur. The planned locations are Hamirpur, Shimla, Bilaspur, Kullu, Dharamshala, etc. As per the Government of India guidelines, the built- up area of around 3,000 sq feet is needed for MCCs.</p> <ul style="list-style-type: none"> The ADB Environment and Safeguard consultant noted that the revenue record of land ownership should be provided to the ADB team for due diligence.
5	Shimla, 21/12/2015	Department of Rural Development	Locations of proposed RLCs, environmental and social safeguard issues, tree cutting, etc.	<ul style="list-style-type: none"> The ADB Environment and Safeguard consultant enquired about probable locations of RLCs planned. The environmental expert suggested that no sites with temporary or permanent occupation should be identified and revenue records showing ownership details should be provided for the social due diligence. Further, any site involving tree cutting, necessary tree cutting permission should be obtained. The ADB consultant also suggested that sites should be at least 300 m away from buildings and monuments of heritage importance and those declared as protected monuments by the State Archaeological Department or by the Archaeological Survey of India. The officials noted the suggestions.

CLC = city livelihood center, DOTE = Department of Technical Education, Vocational and Industrial Training, HPPCB = Himachal Pradesh Pollution Control Board, IEE = initial environmental examination. ITI = industrial training institute, NOC = No Objection Certificate, MCC = model career center, RLC = rural livelihood center.

Source: Asian Development Bank.

B. Consultation and Information Disclosure

107. Consultation. To ensure continued public and stakeholder participation in the subproject life cycle, periodic consultations shall be taken up at regular intervals at site during implementation. This participatory process will ensure that all views of the people are adequately reviewed and suitably incorporated in the design and implementation process.

108. Information disclosure. Once the IEE is approved by the Government of Himachal Pradesh and ADB, an electronic version of the IEE will be placed in the official websites of DOTE, HPKVN, Government of Himachal Pradesh, and ADB. Upon written request, any person seeking information can obtain a hard copy of the complete IEE document by paying for its photocopying cost. The PMU will issue notification on the disclosure mechanism in local newspapers, ahead of

initiation of implementation of the subprojects, providing information on the project, start dates, etc. The notice will be issued by the PMU in local newspapers 1 month ahead of the implementation works. This will create awareness of the project implementation among the public.

C. Grievance Redress Mechanism

109. The affected person(s)/aggrieved party can give their grievance verbally or in written to the local site office of Polytechnic sub-project site at Rehan. Grievances of affected person will first be brought to the attention of the site in charge, who can resolve the issue at the site level. If the matter is not solved within 7 days period by the site in charge, it will be brought to the Grievance Redress Committee (GRC) constituted for the purpose in PIU (PWD). This GRC shall discuss the issue in its monthly meeting and resolve the issues within one month of time after receiving the grievance. If the matter is not resolved by GRC at PIU level within stipulated time, it shall be referred to GRC at PMU level by Project Manager of PIU.

110. GRC at PMU shall discuss the issue and try to resolve it and inform the PIU accordingly. If the matter is not resolved by the GRC at PMU level within one month of time the matter will be referred to State Level Empowered Committee (SLEC), who will resolve the complaint within one month. The PIU and sub-project site office shall keep records of all grievances received including contact details of complainant, date of receiving the complaint, nature of grievance, agreed corrective actions and the date these were affected and final outcome. For this a complaint register will be maintained at each sub-project site. The grievance redress process is shown below **Figure-13**. The cost for functioning of Grievance Redress Mechanism will be accounted for in project cost as part of PMU or PIU functioning

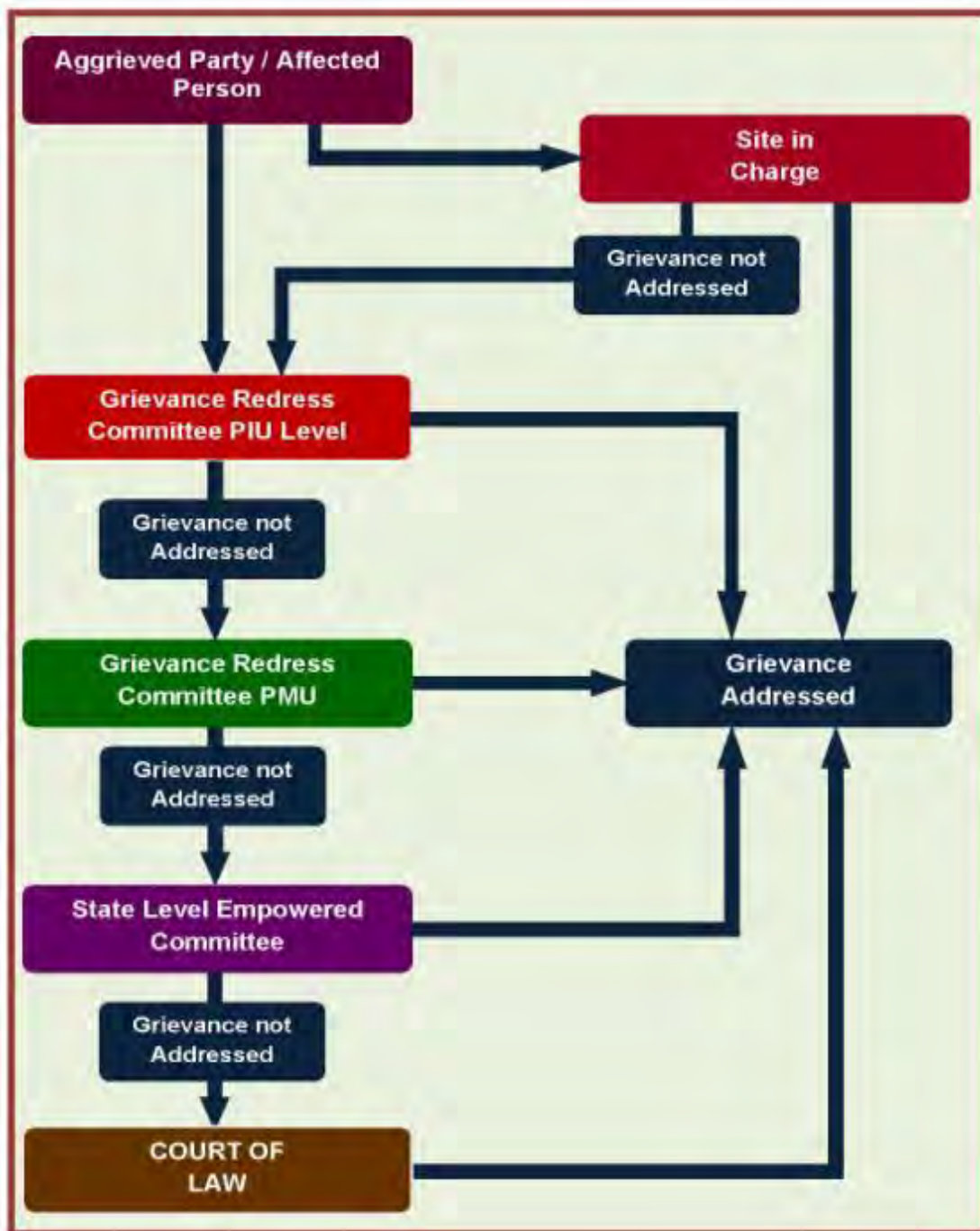
111. Further, person(s) / aggrieved party who are, or may be, adversely affected by the subproject may submit complaints to ADB's Accountability Mechanism. The accountability mechanism provides an independent forum and process whereby people can voice, and seek a resolution of their problems, as well as report alleged violations of ADB's operational policies and procedures. Before submitting a complaint to the Accountability Mechanism, affected person(s) / aggrieved party should first make a good faith effort to solve their problems by working with the ADB South Asia operations department including the India Resident Mission Composition and functions of GRC.

112. PIU Level Grievance Redress Committee (GRC- PIU) – This committee will comprise of Project Manager, Site In charge and one officer from contractor team. The GRC- PIU will be headed by Project Manager (PIU). It will meet at least once a month. The agenda of the meeting will be circulated to all the members and the affected persons/aggrieved party along with venue, date and time at least a week prior to the meeting.

113. This GRC at PMU will headed by the managing director, HPKVN, and senior representative of PWD and other implementing agencies as relevant.⁶ The aggrieved party / person(s) can approach court of law any time with or without filing complaints at PIU or PMU level.

⁶ The HPKVN website will include a link where affected person(s) can register their complaints online. A telephone number will also be on the website of HPKVN and the subproject sites, so that the general public can register their complaint with the PIU or PMU office.

Figure 13: Grievance Redress Mechanism of the Himachal Pradesh Skill Development Project



PIU = project implementation unit, PMU = project management unit.
Source: Asian Development Bank.

VII. FINDINGS AND RECOMMENDATIONS

114. The proposed subproject components do not involve any interventions in and around the natural and cultural heritage destinations and have less significant (direct or indirect) environmental impacts. It is expected that the proposed subproject will enhance economic growth and employability of female youth through development and operations of Women's Polytechnic at Rehan in Kangra district.

115. This IEE has identified minor likely impacts on water, air, and noise during the construction and operation period and has defined mitigation measures. Those mitigation measures will be implemented and monitored during the subproject execution. The overall environmental quality of subproject surroundings will not be affected as a result of functioning of Women's Polytechnic as adequate sanitation facilities have been planned. In order to minimize impacts on ground water table, rain water harvesting structures have been designed for ground water recharge. The project also has provisions for roof top solar power system for generation electricity to reduce carbon foot print.

116. The specific management measures laid down in the IEE will effectively address any adverse environmental impacts due to the subproject. The effective implementation of the measures proposed will be ensured through the building up of capacity towards environmental management within the PMU supplemented by the technical expertise of Safeguards Specialists of the PMC. Further, the environmental monitoring plans provide adequate opportunities towards course correction to address any residual impacts during construction or operation stages.

VIII. CONCLUSIONS

117. Based on this IEE, it is expected that the proposed subproject components have only minor, localized, temporary, and insignificant environmental impacts. These can be easily mitigated through adequate mitigation measures and regular monitoring during the design, construction, and post construction phases of the Women's Polytechnic Subproject. Negative impacts on water, air quality, and noise levels during civil works and operation phase, which will be appropriately monitored and adequately mitigated. This report has not identified any comprehensive, broad, diverse, or irreversible adverse impacts caused by the subproject. Based on the findings of the IEE, the classification of the subproject as category 'B' is confirmed. No further special study or detailed EIA needs to be undertaken to comply with the Safeguard Policy Statement, 2009.

APPENDIX 1: ENVIRONMENT CATEGORIZATION

A. Instructions			
<p>(i) The project team completes and submits the form to the Environment and Safeguards Division (RSES) for endorsement by RSES Director, and for approval by the Chief Compliance Officer (CCO). OM F1/OP on <i>Safeguard Review Procedures</i> (paras. 4-7) provides the requirements on environment categorization.</p> <p>(ii) The classification of a project is a continuing process. If there is a change in the project components or/and site that may result in category change, the Sector Division submits a new form and requests for re-categorization, and endorsement by RSES Director and by the CCO. The old form is attached for reference.</p> <p>(iii) In addition, the project team may propose in the comments section that the project is highly complex and sensitive (HCS), for approval by the CCO. HCS projects are a subset of category A projects that ADB deems to be highly risky or contentious or involve serious and multidimensional and generally interrelated potential social and/or environmental impacts.</p>			
B. Project Data			
Country/Project No./Project Title	:	India/ 49108-002/ Himachal Pradesh Skill Development	
Department/ Division	:	SARD/SAHS	
Processing Stage	:	Fact-finding mission completed (20-27 June 2016)	
Modality	:		
<input checked="" type="checkbox"/> Project Loan	<input type="checkbox"/> Program Loan	<input type="checkbox"/> Financial Intermediary	<input type="checkbox"/> General Corporate Finance
<input type="checkbox"/> Sector Loan	<input type="checkbox"/> MFF	<input type="checkbox"/> Emergency Assistance	<input type="checkbox"/> Grant
<input type="checkbox"/> Other financing modalities:			
C. Environment Category			
<input checked="" type="checkbox"/> New <input type="checkbox"/> Recategorization — Previous Category [<input type="checkbox"/>]			
<input type="checkbox"/> Category A	<input checked="" type="checkbox"/> Category B	<input type="checkbox"/> Category C	<input type="checkbox"/> Category FI
D. Basis for Categorization/ Recategorization (please. attach supporting documents):			
<input checked="" type="checkbox"/> Rapid Environmental Assessment Checklist			
<input checked="" type="checkbox"/> Project and/or Site Description			
<input checked="" type="checkbox"/> Other: Support Documents Attached:			
1. Environmental and Social Management Framework			
2. One Initial Environmental Examination report (Subproject – Construction of Women's Polytechnic in Rehan, Kangra District (Himachal Pradesh)			
E. Comments			

Project Team Comments	SDES Comments
<p>The HPSPDP project involves construction of new training facilities and upgrade of some existing buildings to improve the access of technical and vocational education and training (TVET) facilities to the underserved areas of Himachal Pradesh. The new facilities include construction of 7 city livelihood centers (CLCs), 7 rural livelihood centers (RLCs), and 1 polytechnic for women. Eleven existing employment exchanges will be upgraded into model career centers (MCCs). One new MCC is also planned.</p> <p>The largest of the new constructions—the polytechnic for women to be constructed in Rehan, district Kangra, will occupy around 13,385 square meters (m²). The CLCs and RLCs on average, will have 2to 3 floors, and will occupy only about 900 m². The MCCs will occupy around 400 m² on an average, and will have three floors. Since all the buildings to be constructed or upgraded under the project are educational and training centers, according to the environmental rules and regulations of India and Himachal Pradesh, they will not require any prior environmental clearances.</p> <p>Moreover, the Government of Himachal Pradesh has assured ADB that the proposed new infrastructure will be built, either within premises owned by the government, or on vacant and unencumbered land owned by the government. No new land will be acquired, nor will anyone be displaced in anticipation of ADB funding.</p> <p>None of the project components will be located within core and buffer zones of national parks, sanctuaries, tiger reserves, and biosphere reserves; or within 100 meters from the boundary of protected monuments of archaeological importance. <u>Hence, the project is category 'B' with respect to environment.</u></p> <p>The categorization has been reconfirmed by an experienced ADB environment and social safeguards consultant, who has already visited 15 sites identified by the state government to date.⁷ He has shortlisted the suitable sites and screened out the unsuitable ones. The ADB consultant has prepared initial environmental examination (IEE) reports construction package wise. A detailed Environment and Social Management Framework has been prepared to guide the implementing agencies going forward. The environmental impact related to the construction of new buildings will be minor in nature and mostly limited to the duration of construction. These minor impacts will be mitigated through site-specific environment mitigation plans (EMPs) to be included in the civil works contract documents.</p> <p>The ADB consultant has taken relevant government staff on these site visits, and shown them how to use ADB’s rapid environmental assessment checklists. He has also conducted workshops on ADB’s safeguard policies and processes with the implementing agencies including the Public Works Department, which will oversee the civil works.</p>	
F. Approval	
Proposed by:	Endorsed by:

Shamit Chakravarti		Herath Gunatilake	
Project Team Leader: SARD/SAHS Date:		Director, SDES Date:	
Endorsed by:		Approved by:	
Sungsup Ra			
Director, SAHS Date:		Chief Compliance Officer Date:	
		<input type="checkbox"/> Highly Complex and Sensitive Project	

⁷ In addition to the ADB environment and social safeguards consultant, other experts including an architect, labor economist, gender specialist, plus relevant consultants from the consulting firm engaged under the project preparatory technical assistance project (IND TA 8760), have also screened these sites.

APPENDIX 2: RAPID ENVIRONMENTAL ASSESSMENT CHECKLIST

Instructions:

- (i) The project team completes this checklist to support the environmental classification of a project. It is to be attached to the environmental categorization form and submitted to the Environment and Safeguards Division (SDES) for endorsement by Director, RSES and for approval by the Chief Compliance Officer.
- (ii) This checklist focuses on environmental issues and concerns. To ensure that social dimensions are adequately considered, refer also to ADB's (a) checklists on involuntary resettlement and Indigenous Peoples; (b) poverty reduction handbook; (c) staff guide to consultation and participation; and (d) gender checklists.
- (iii) Answer the questions assuming the "without mitigation" case. The purpose is to identify potential impacts. Use the "remarks" section to discuss any anticipated mitigation measures.

Country/Project Title:

India/ Himachal Pradesh Skill Development Project (Subproject: Development and Construction of Women's Polytechnic at Rehan in Kangra District)

Sector Division:

SAHS

Screening Questions	Yes	No	Remarks
A. Project Sighting Is the project area adjacent to or within any of the following areas:			<p>The subproject involves establishment of Women's Polytechnic at Rehan in Kangra district of Himachal Pradesh. The Women Polytechnic will provide female students of state to get opportunity for technical education (Diploma) in the field of Civil, Computer Engineering, Architecture Assistantship and Electrical Engineering. The built up area of Women Polytechnic Complex is 13385.94 m2.</p> <p>None of the proposed Women Polytechnic components are located within core and buffer zones of national parks, sanctuaries, tiger reserves, and biosphere reserves; or within 100 meters from the boundary of protected monuments of archaeological importance.</p>
<ul style="list-style-type: none"> ▪ Underground utilities 		√	The Women's Polytechnic site is located in an open area at the outer skirts of Rehan village. There is no presence of underground utilities at the site of subproject.
<ul style="list-style-type: none"> ▪ Cultural heritage site 		√	
<ul style="list-style-type: none"> ▪ Protected area 		√	
<ul style="list-style-type: none"> ▪ Wetland 		√	
<ul style="list-style-type: none"> ▪ Mangrove 		√	
<ul style="list-style-type: none"> ▪ Estuarine 		√	
<ul style="list-style-type: none"> ▪ Buffer zone of protected area 		√	
<ul style="list-style-type: none"> ▪ Special area for protecting biodiversity 		√	
<ul style="list-style-type: none"> ▪ Bay 		√	
B. Potential Environmental Impacts Will the project cause...			
<ul style="list-style-type: none"> ▪ Encroachment on historical or cultural areas? 		√	
<ul style="list-style-type: none"> ▪ Encroachment on precious ecology (e.g., sensitive or protected areas)? 		√	
<ul style="list-style-type: none"> ▪ Impacts on the sustainability of associated sanitation and solid waste disposal systems? 		√	For waste water, septic tanks are planned as part of sanitation system in subproject building. The solid waste will be disposed of by integrating with the disposal systems of the Rehan village.

Screening Questions	Yes	No	Remarks
<ul style="list-style-type: none"> Dislocation or involuntary resettlement of people? 		√	The subproject site is under the ownership of DOTE. The site is unencumbered vacant plot. This has been confirmed during the site visits and revenue records have also been shared confirming ownership of DOTE.
<ul style="list-style-type: none"> Disproportionate impacts on the poor, women and children, Indigenous Peoples or other vulnerable groups? 		√	<p>The HPSDP project is aimed at imparting relevant TVET skills to needy segments and women. In fact, this project is classified as a “GEN” or gender equity project. Hence, it will not have any adverse impact on them or children. The current subproject will help Women students of State getting technical education and thus will have positive impact.</p> <p>The state of Himachal Pradesh is divided into 12 districts. Of these, the Kinnaur and Lahaul-Spiti districts in their entirety, and Pangi and Bharmour (now <i>Tehsil</i> Bharmour and <i>subtehsil</i>, Holi) subdivisions of the Chamba district, are notified as scheduled tribal areas of Himachal Pradesh since the proportion of scheduled tribes is 50% or more. These districts are in the extreme north and northeast of Himachal Pradesh, forming a contiguous belt in the far hinterland behind high mountain passes. Given their high altitude, inhospitable terrain, harsh winters, sparsely and dispersed population, and poor connectivity (especially during winters and rainy seasons), no civil works (i.e., construction of training facilities) have been planned here. Since subproject site is not in Kinnaur and Lahaul -Spiti district, therefore, there will be no adverse impact on Indigenous Peoples.</p>
<ul style="list-style-type: none"> Accident risks associated with increased vehicular traffic, leading to loss of life? 		√	The Women's Polytechnic is planned in Rural area and access road to the site has insignificant traffic. So there will be no effect on local vehicular traffic (or risk of accidents), either during the construction or operational phases. However, to rule out any accident due to project related vehicular traffic, if required, flagmen will be deployed near the Women Polytechnic construction site to regulate the traffic. A traffic management plan will be prepared for the construction phase of the subproject.
<ul style="list-style-type: none"> Increased noise and air pollution resulting from increased traffic volume? 		√	As noted above, there would be no increase in traffic volume owing to this subproject. Hence, there would be no increase in noise or air pollution.

Screening Questions	Yes	No	Remarks
<ul style="list-style-type: none"> ▪ Occupational and community health and safety risks? 		√	<p>The environmental impact related to the construction of various buildings of Polytechnic will be minor in nature and mostly limited to the duration of construction. This is because site is not close to habitation and construction works are not to be carried out in the existing buildings. The impact will be confined mainly within the construction site. These minor impacts will be mitigated through Environmental Management Plan.</p> <p>Potential occupational health and safety risks during construction will be addressed by including provisions in the contract documents and implementation of the environment mitigation measures. During the operation phase, these issues will be taken care of through formulation of safe operating procedures.</p>
<ul style="list-style-type: none"> ▪ Risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during project construction and operation? 		√	<p>As noted above, the environmental impact related to the construction of Women Polytechnic buildings will be minor and mostly limited for the duration of construction. There will not be any physical, chemical, biological, and radiological hazards during project construction and operation phases.</p> <p>Adequate provisions will be included in the relevant contract documents to address potential occupational health and safety hazards during the construction and operation phases.</p>
<ul style="list-style-type: none"> ▪ Generation of dust in sensitive areas during construction? 	√		<p>During construction, there will be dust generation due to material handling and operation of construction machinery and equipment. This will be controlled through dust suppression measures e.g. water spray and through proper maintenance of construction equipment and machinery. It will also be ensured that construction equipment and machinery conform to the emission norms laid down by the Central Pollution Control Board.</p>
<ul style="list-style-type: none"> ▪ Requirements for disposal of fill, excavation, and/or spoil materials? 	√		<p>Since the subproject site is plain and requires no cutting or filling. The generation of spoils is not anticipated except minor construction waste. The construction waste will be utilized to the extent possible. Any remaining waste will be disposed off at disposal site. The disposal site will be identified during the construction phase.</p>
<ul style="list-style-type: none"> ▪ Noise and vibration due to blasting and other civil works? 		√	<p>During construction, some noise will be generated due to the operation of construction equipment and machinery. Adequate mitigation measures have been stipulated in the EMP. Since the project involves construction of simple buildings, no requirement of any heavy equipment is foreseen. No blasting will be required in the construction as site is plain. Hence, there will not be any significant shaking or vibrations. There are no habitations in the vicinity. Hence impacts on account of shaking or vibrations are not anticipated. Further, no construction works will be undertaken at night at the subproject site. There will be periodic noise monitoring at construction site as per the monitoring plan prepared as part of EMP.</p>

Screening Questions	Yes	No	Remarks
<ul style="list-style-type: none"> Long-term impacts on groundwater flows as result of needing to drain the project site prior to construction? 		√	Since the subproject site is at foothills and has swift drainage pattern, so no adverse impact on ground water flow are anticipated.
<ul style="list-style-type: none"> Long-term impacts on local hydrology as a result of building hard surfaces in or near the building? 		√	The plot area of Polytechnic complex is 17511 m ² . Out of this only 76 % is covered in the hard surface. The storm water is planned to be drained through soak pits for ground water recharge. Hence no impact on hydrology is anticipated due to construction of Women's Polytechnic.
<ul style="list-style-type: none"> Large population influx during project construction and operation that causes increased burden on social infrastructure and services (such as water supply and sanitation systems)? 		√	<p>The subproject is small in nature and will not require construction force more than 200. These will be mostly local. There will be construction camp for the workshop at site. The contractor will arrange for potable water supply for the workers, and also provide adequate sanitation facilities at the construction camp. Hence impact on social infrastructure is not anticipated.</p> <p>All the students will be local from within Himachal Pradesh and Polytechnic will have hostel also. Hence, there will not be any influx of people. Adequate facilities (as per specified codes) for water and sanitation have been designed at the institute. Hence, there will not be any burden on social infrastructure and services during the operation phase also.</p>
<ul style="list-style-type: none"> Social conflicts if workers from other regions or countries are hired? 		√	Preference will be given to locally available labor. The construction activities are relatively small in nature so requirement of workers will not be significant. There would be no need to hire workers from other regions or countries.
<ul style="list-style-type: none"> Risks to community safety caused by fire, electric shock, or failure of the buildings safety features during operation? 		√	Since the Women Polytechnic buildings to be constructed will be new, the latest national building codes and safety measures will be followed.
<ul style="list-style-type: none"> Risks to community health and safety caused by management and disposal of waste? 		√	<p>During the construction phase, waste collection and disposal system will be carried out by the contractor. The processes being followed will be reviewed and approved by the Public Works Department. The firm to be engaged for ensuring quality of civil works will help the Public Works Department in ensuring that the required safety measures are adhered to while managing and disposing of waste.</p> <p>For the operation phase, adequate provisions have been made in the Polytechnic building design to take care of management and disposal of waste water and other solid waste.</p>

Screening Questions	Yes	No	Remarks
<ul style="list-style-type: none"> ▪ Community safety risks due to both accidental and natural hazards, especially where the structural elements or components of the project are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation and decommissioning? 		√	<p>Specific community risks are not foreseen due to operation since the subproject site has good access through the road. The institute buildings have been designed following applicable seismic coefficients for Himachal Pradesh. The building will be maintained regularly in the operation phase.</p>

EMP = environmental management plan, HPSPDP = Himachal Pradesh Skill Development Project, DOTE = Department of Technical Education, Vocational and Industrial Training, TVET = technical and vocational education and training.

Source: Asian Development Bank.

APPENDIX 3: A CHECKLIST FOR PRELIMINARY CLIMATE RISK SCREENING

Country/Project Title: India/ Himachal Pradesh Skill Development Project

Sector: Education

Subsector: Technical Vocational Education and Training (Establishment of Women's Polytechnic at Rehan in Kangra District)

Division/Department: SAHS/ SARD

Screening Questions		Score ^a	Remarks
Location and Design of project	Is sighting and/or routing of the project (or its components) likely to be affected by climate conditions including extreme weather related events such as floods, droughts, storms, landslides?	0	The Women Polytechnic site at Rehan is not likely to affect by extreme weather related events as it is in plain terrain. There are no risks for floods, and landslides at the site. There are also no extreme situations such as snowfall at the site.
	Would the project design (e.g., the clearance for bridges) need to consider any hydro-meteorological parameters (e.g., sea level, peak river flow, reliable water level, peak wind speed etc.)?	0	Not applicable
Materials and Maintenance	Would weather, current and likely future climate conditions (e.g., prevailing humidity level, temperature contrast between hot summer days and cold winter days, exposure to wind and humidity hydro-meteorological parameters likely affect the selection of project inputs over the life of project outputs (e.g., construction material)?	0	Weather conditions at subproject site do not demand usage of any specific construction material to counteract weather phenomenon.
	Would weather, current and likely future climate conditions, and related extreme events likely affect the maintenance (scheduling and cost) of project output(s)?	0	No, weather conditions at subproject site do not require specific scheduling for maintenance
Performance of project outputs	Would weather or climate conditions and related extreme events likely affect the performance (e.g., annual power production) of project output(s) (e.g., hydro-power generation facilities) throughout their design life time?	0	Not applicable

^a Options for answers and corresponding score are as follows: not likely = 0, likely = 1, very likely = 2.

Source: Asian Development Bank.

Responses when added that provide a score of 0 will be considered low-risk project. If adding all responses will result to a score of 1–4 and no score of 2 was given to any single response, the project will be assigned a medium risk category. A total score of 5 or more (including a score of 1 in all responses or a 2 in any single response) will be categorized as high-risk project.

Result of Initial Screening (Low, Medium, High) - Low Risk

Other Comments: None

Prepared by: Shreeniwas Verma, Environmental Safeguard Specialist

APPENDIX 4: SITE PHOTOGRAPHS



APPENDIX 5: LAND RECORDS SHOWING OWNERSHIP OF GOVERNMENT OF HIMACHAL PRADESH

नकल जमाबन्दी											
महाल/टीका		मौजा		सन्		न० हदवस्त		तहसील		जिला	
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
संख्या या जमाबन्दी	संख्या या जमाबन्दी	नाम व मालिक एहवाल	नाम कारतकार और हाल	सिक्का नं०	संख्या या जमाबन्दी	संख्या या जमाबन्दी	संख्या या जमाबन्दी	संख्या या जमाबन्दी	संख्या या जमाबन्दी	संख्या या जमाबन्दी	संख्या या जमाबन्दी
118 मिन	170 मिन	सरकार (ठेकाखाल सुदरी)	रिजर्व भूला नकल हवामें लीज हक अर्धन कर नदारात				377	03-46-72	मन विद्या सुदरी		
<p>नोट: वरिष्ठ एप नं० 685 दिनांक 14/06/2016 कोला हवा कश्मीर उपर्युक्त नकल नमर खाली 377 लका लादी 01-73-01 मम रिजर्व भूला लें अलाखाल भूला से करिवास्त हुई।</p> <p>नोट: वरिष्ठ ई नं० 372 तवादीली कखाना काश्त खिम (खाली) 377 लका लादी 01-73-01 मम किने जतिक खाली हिमाचल सुदरी कहेत खखाना काश्त राजकीय बहुतकनीकी (मदिला) शिमला खेखाने अलाखाल भूला लका दिनांक 03/03/2017 का नमूर 25 का।</p> <p style="text-align: right;">04/03/2017</p>											

APPENDIX 6: LAND RECORDS CERTIFICATION BY DEPARTMENT OF TECHNICAL EDUCATION, VOCATIONAL AND INDUSTRIAL TRAINING SHOWING OWNERSHIP OF SITE

DIRECTORATE OF TECHNICAL EDUCATION,
VOCATIONAL & INDUSTRIAL TRAINING,
HIMACHAL PRADESH, SUN DERNAGAR.

NO. STV(TE) H-G(1)Poly/Rehan/Bldg./2016 33258

Dated:- 22/7/17

To

Managing Director,
HPKVN, SDA Complex, Block No. 24,
Kasumpti. Distt. Shima, HP.

Subject:-

**Ownership Certificate for Rehan Polytechnic Site for inclusion
in the IEE report.**

Kindly refer to E-mail dated 18.07.2017 (copy attached) received from Mr. Yashpal Malik, Pwc, Principal Consultant, Government Reform & Infrastructure Development which is also endorsed to your good Office. In this connection, it is certified that land comprising Khasra No. 377/1, Khatauni No. 166, area measuring 01-73-01 hec. ^{in Mohal Khandara} has been transferred and ⁱⁿ in the possession of Technical Education Department for the establishment of Govt. Polytechnic for Women at Rehan, Distt. Kangra, HP.

This is for your kind information and further necessary action please.

Yours faithfully,

[Signature]
Director

Technical Education
ofc Vocational & Industrial Training
Himachal Pradesh Sundernagar. 9

APPENDIX 7: SAMPLE TRAFFIC MANAGEMENT PLAN

A. Principles

1. Since the scale of construction work at the subproject site is relatively small, there will not be any major or prolonged disruption of local traffic. Nevertheless, it is good to prepare a traffic management plan (TMP) to minimize and avoid public inconvenience to the extent feasible. This indicative TMP will ensure the safety of all the road users along the work zone and minimize public inconvenience. It addresses the following issues:

- (i) the safety of pedestrians, bicyclists, and motorists travelling through the construction zone;
- (ii) protection of work crews from hazards associated with moving traffic;
- (iii) avoiding traffic congestion; and
- (iv) Maintenance of access to adjoining properties.

B. Operating Policies for Traffic Management Plan

2. The following principles will help to promote safe and efficient movement for all road users (motorists, bicyclists, and pedestrians, including persons with disabilities) through and around work zones while reasonably protecting workers and equipment.

- (i) Make traffic safety and temporary traffic control an integral and high-priority element of every project from planning through design, construction, and maintenance.
- (ii) Inhibit traffic movement as little as possible.
- (iii) Provide clear and positive guidance to drivers, bicyclists, and pedestrians as they approach and travel through the temporary traffic control zone.
- (iv) Inspect traffic control elements routinely, both day and night, and make modifications when necessary.
- (v) Pay increased attention to roadside safety in the vicinity of temporary traffic control zones.
- (vi) Keep the public well informed.
- (vii) Make appropriate accommodation for abutting property owners, residents, businesses, emergency services, railroads, commercial vehicles, and transit operations.

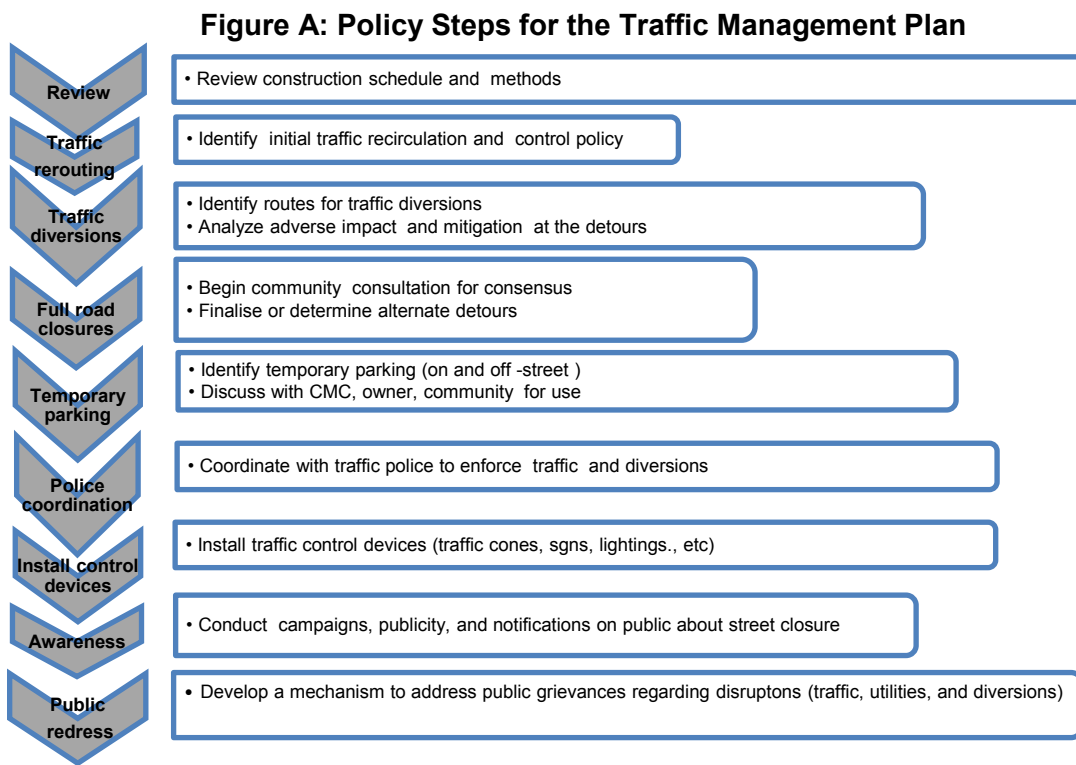
C. Procedures for Street Closure, if Required

3. A final decision to close a particular street and divert the traffic should involve the following steps:

- (i) Approval from the project implementation unit (PIU) and local administration to use alternative local streets as detours;
- (ii) Consultation with businesses, community members, traffic police, persons with disability, etc., regarding the mitigation measures necessary at the detours where the road is diverted during the construction;
- (iii) Determining the maximum number of days allowed for road closure, and incorporation of such provisions into the contract documents;
- (iv) Determining if additional traffic control or temporary improvements are needed along the detour route;

- (v) Considering how access will be provided to the worksite;
- (vi) Contacting emergency service, school officials, and transit authorities to determine if there is any effect on their operations; and
- (vii) Developing a notification program to keep the public informed, and advising the public of alternate routes as a result of the traffic diversion.

4. If full road-closure of certain streets within the area is not feasible due to inadequate capacity of the detour streets or public opposition, then full closure can be restricted to weekends with the construction commencing on Saturday night and ending on Monday morning prior to the morning rush hour traffic.



Source: Asian Development Bank.

D. Public Awareness and Notifications

5. The Public Works Department and contractors will issue timely notifications to inform the public about the following issues:

- (i) road blockages and alternative routes along with the duration (as applicable);
- (ii) traffic control devices placed around the construction zones (signs, traffic cones, barriers, etc.); and
- (iii) Reduced speed limits to be enforced at the work zones and traffic diversions.

8. It may be necessary to conduct an awareness campaign on road safety during construction. It will target relevant groups, i.e., children, adults, and drivers. Therefore, these campaigns will be conducted in schools and community centers. In addition, the project will

publish a brochure for public information. These brochures will be widely circulated around the area and will also be available at the PIU, and the contractor's site office. The text of the brochure should be concise to be effective, with a lot of graphics. It will serve the following purpose:

- (i) Explain why the brochure was prepared, along with a brief description of the project.
- (ii) Advise the public to expect the unexpected.
- (iii) Educate the public about the various traffic control devices and safety measures adopted at the work zones.
- (iv) Educate the public about safe road user behaviour at the work zones.
- (v) Advise the public how to stay informed or where to inquire about road safety issues at the work zones (name, telephone, mobile number of the contact person).
- (vi) Indicate the office hours of relevant offices.

E. Vehicle Maintenance and Safety

10. A vehicle maintenance and safety program shall be implemented by the construction contractor. The contractor should ensure that all the vehicles are in proper running condition, and comply with roadworthy and meet certification standards of the government. All vehicles should be in good condition and meet the pollution standards of the Government of India and the Himachal Pradesh government. The drivers will follow the special code of conduct and road safety rules of the Himachal Pradesh government. They will ensure that all loads are covered and secured. Vehicles will be cleaned and maintained in designed places.

F. Installation of Traffic Control Devices at Work Zones and Traffic Diversion Routes

10. The purpose of installing traffic control devices at the work zones is to delineate these areas to warn, inform, and direct the road users about a hazard ahead, and to protect them as well as the workers. As proper delineation is key for achieving the above objective, it is important to install good traffic signs at the work zones. The following traffic control devices will be used in work zones: signs, pavement markings, channelizing devices, arrow panels, warning lights.

11. Procedures for installing traffic control devices at any work zone vary depending on road configuration, location of the work, construction activity, duration, traffic speed and volume, and pedestrian traffic. Work will take place along major roads, and the minor internal roads. As such, the traffic volume and road geometry vary. However, regardless of where the construction takes place, all the work zones should be cordoned off, and traffic shifted away at least with traffic cones, barricades, and temporary signs (temporary "STOP" and "GO").

12. The work zone should take into consideration the space required for a buffer zone between the workers and the traffic (lateral and longitudinal), and the transition space required for delineation, as applicable. For the works, a 30 centimeter clearance between the traffic and the temporary STOP and GO signs should be provided. In addition, at least 60 centimeters is necessary to install the temporary traffic signs and cones.

13. Traffic police should regulate traffic away from the work zone and enforce the traffic diversion result from full street closure in certain areas during construction. Flaggers or personnel should be equipped with reflective jackets at all times and have traffic control batons (preferably the LED type) for regulating the traffic during nighttime.

14 In addition to the delineation devices, all the construction workers should wear fluorescent safety vests and helmets in order to be visible to the motorists at all times. There should be provision for lighting beacons and illumination for night constructions. The PIU and contractor will coordinate with the local administration and traffic police regarding the traffic signs, detour, and any other matters related to traffic. The contractor will prepare the traffic management plan in detail and submit it along with the environmental management plan for the final approval.

APPENDIX 8: PHOTOGRAPHS AND ATTENDANCE SHEETS OF CONSULTATIONS



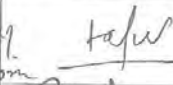


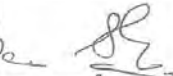




(a) Consultations with Local NGO at Dharamshala



(b) Consultations with Local Elected Representatives , Rehan Villagers and DOTE Staff at Polytechnic Site



Attendance Sheet of the meeting held on 18-3-2016 at 11.00 AM in Conference Hall Yojna Bhawan, Shimla-2 with ADB consultants regarding Himachal Pradesh Skill Development Project.

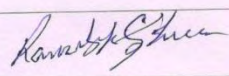
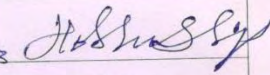
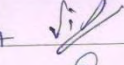

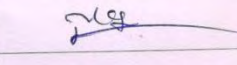
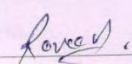
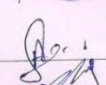
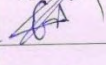
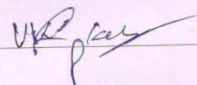
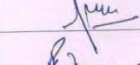
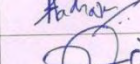
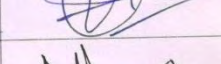
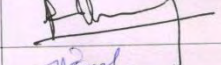
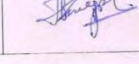
Sr. No.	Name of the Officer and Designation	Mobile No. / e-mail address.	Signature
1	Krishan Sharma Deputy Dir Employment	94184-50437 dde-lep-hp@nic.in	
2.	Dr. D.K. Sharma, Sr. Enr. Engineer	9418027098 pcbseashimla@gmail.com	
3.	Dr. H.C. Gupta, IFS Chief Scientific Officer Deptt. of Enr. S&T & ITS of Science & Technology	9418020469 hemantgifs@gmail.com	
4.	Er. Umesh Pathania Technical Officer & Estate Officer State Council Enr. Tech. & Enr. & DEST.	9418310231 umeshpathania@hotmail.com	
5.	Dr. Dhuram Sharma. Project Director HPS & M. Deptt of Enr. Develop (4/P)	94186-70315. mhm hp@gmail.com	
6	SN Verma ADB Consultant Government of India	0984224458 etsundia@gmail.com	
7	Rajesh Kumar IFS	9418000151	
8	J. K. Subramanian Prominent	9600044487	
9	Basab Boreyee TVET Expert	7838577785	
10.	DEEPAK ANGRA HOD(EE) DTE Sundernagar	9418107688 angradeepak@yahoo.co.in	

IND 49108-002: Supporting Skill Development in Himachal Pradesh
Stakeholder Consultations

Date : 04/05/2016

Location: ~~RD~~ Women Polytechnic
Sikat Reban

Planned Facility: Women's Polytechnic

S. No.	Name	Designation	Phone Number	Signature
1	St. Ramesh Kumar	Pradhan	94183-13828	
2	St. Hoshigya Sijl	Chaukidar	94596 55408	
3	St. Vivek Kumar	Ward Mah	94185-22854	
4	Ravinder St. Swinder	Panchayat Sec.	98168 3004	
5	Mr. Mohan	Villager	7802201144	
6	Mr. Raveen	Villager	9857728145	
7	Mr. Ajmer	Villager	8894671873	
8	Mr. Jaginder	Patwari	9459935242	
9	Mr. Vikar	Local Reun Villager	9816923106	
10	Ms. Dinesh Shaw	Principal		
11	Ashok Pathak	Govt. Polytechnic Kangra	9418162321	
12	NIKAS KANDORIA	-d.-	94181-61414	
13	PANA PISHARODY	CONSULTANT ADB	9810270258	
14	HARSH KSHIPAL	Prac	8898007005	

15	Yashpal malik	PWC	901504088	
16	Shreeniwas Kumar	ADB Consultant	981126488	SL
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