



**REPORT ON**  
**INDUSTRIAL TRAINING INSTITUTES**  
**AND**  
**CENTRAL TRAINING INSTITUTES**

**COMMITTEE ON PLAN PROJECTS**

**(Buildings Projects Team)**

**NEW DELHI**

*October, 1960*



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**Composition of the Team for Selected Buildings Projects.**

*Leader*

Shri S. K. Patil, Minister for Food and Agriculture.

*Members*

Shri Sarup Singh, ISE (Retd.), formerly Director, National Buildings Organisation.

Shri N. G. Dewan, ISE, Chief Engineer, Central Public Works Department.

Dr. Eng. A. Carbone, Consulting Engineer, Calcutta.

Shri C. P. Malik, Director, National Buildings Organisation (*ex-officio*).

*Secretary*

Shri T. S. Vedagiri, Superintending Engineer.



MINISTER FOR  
FOOD AND AGRICULTURE,  
GOVERNMENT OF INDIA  
*New Delhi, October 10, 1960.*

My dear Pantji,

I have great pleasure in forwarding herewith the report of the Buildings Projects Team on Industrial Training Institutes and Central Training Institutes. As a number of Industrial Training Institutes and a few Central Training Institutes are to be constructed in the Third Plan, the Team considered it worthwhile to study the space requirements, space planning and design aspects of these structures. A Panel was therefore set up under the Chairmanship of Shri M. L. Nanda, Additional Chief Engineer, CPWD in consultation with the Director General of Resettlement and Employment, two of whose Officers are also on the Panel. The Members of the Team were also closely associated with the work of the Panel.

The Panel examined in detail the lay out of workshops and other buildings and has prescribed the requirements of space for various trades and other facilities. It has also laid down recommendations for efficient space planning and structural designing.

You will be glad to know that the recommendations regarding space requirements laid down now by the Panel will lead to a saving in area of about 10% in the workshops and 17% in the main building. The report has been accepted by the Director General, Resettlement and Employment.

To facilitate implementation of the report, the Panel has prepared a proforma which when filled up by the authorities incharge of planning the Institutes would give at a glance the norms recommended by the Panel for various facilities and those achieved in actual planning. A copy of the proforma is appended to the report.

I take the opportunity of thanking the Chairman and Members of the Panel for the trouble they have taken in preparing the report.

Yours sincerely,

S. K. PATIL

Shri Govind Ballabh Pant,  
Minister for Home Affairs,  
Government of India,  
New Delhi.

**REPORT ON  
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AND  
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## INTRODUCTION

0.1. The necessity for increasing the number of trained craftsmen in various trades to meet the growing needs of industries in the country needs no special mention. Recognising its importance, the Planning Commission allotted Rs. 16.7 crores in the Second Five Year Plan for the development of craftsmen training facilities. Out of this, Rs. 14.72 crores are earmarked for the development of training facilities at training institutes while the remaining amount will be utilised for apprenticeship training and other schemes. This amount has been apportioned among the various States depending upon their needs.

0.2. In view of the large number of institutes to be set up all over the country, the Committee on Plan Projects in consultation with the Director General of Resettlement and Employment decided to set up a Panel to determine rational space requirement of the institutes and suitable specifications to be adopted for the buildings etc. The composition of the Panel is given below :—

Shri M. L. Nanda,  
Additional Chief Engineer,  
C. P. W. D.

*Chairman*

Shri P. Raj Nath,  
Director of Training,  
D. G. R. & E.

*Member*

Shri S. Sundaresan,  
Deputy Director,  
D. G. R. & E.

*Member*

Shri T. R. Mahendru,  
Architect.

*Member*

Shri T. S. Vedagiri,  
Superintending Engineer and  
Secretary, B. P. Team.

*Member-Secretary.*

0.3. The Industrial Training Institutes are intended to cater to the growing need for trained and skilled manpower. It is proposed to expand the training facilities from the existing 10,500 seats to about 31,400 seats ; thus about 20,900 additional seats have to be provided during the Plan period. This will be achieved by expansion of the training facilities at existing Training Institutes and by opening new Institutes.

0.4. The pre-requisite for efficient training of craftsmen is the improvement of the quality of the instructors. The Central Training Institutes are intended for the purpose of training instructors. Six such institutes are contemplated to be established, one each at Bombay, Calcutta, Kanpur, Ludhiana, Madras and Hyderabad. Construction of the institutes at Bombay and Calcutta has been taken up and the work is in progress. The capacity of

the institute at Calcutta will be 400 while that of the other five institutes will be 250 each. An Industrial Training Institute of the same capacity for craftsmen trainees will be attached to each Central Training Institute.

0.5. The details of accommodation for Industrial Training Institutes were first worked out by an *ad-hoc* committee appointed by the Ministry of Labour in 1957. These requirements were however reviewed by the D.G.R. & B., on the basis of detailed layout worked out for each and every trade. The Panel wishes to place on record its appreciation of the work done in this direction by the D.G.R. & B. which has incidentally simplified its work. The layout diagrams have been examined in great detail by the Panel and certain reductions in areas have been effected by cutting out unnecessary circulation space and by rearranging the equipment wherever possible.

0.6. The revised requirements of administrative building, workshop, hostel building, staff quarters etc. for Industrial Training Institutes are set out in Section 1 of the report. Regarding Central Training Institutes, the Panel has taken into account the extra requirements for the proper functioning of the Institutes and laid down the standards for administrative building, workshop, hostel building, etc. These are given in Section 2. In Sections 3 & 4, the Panel has dealt with the factors that should be taken into account in the planning and designing of these buildings. Specifications to be followed for the different items of work in order to ensure uniformity in the pattern of buildings and for effecting economy consistent with functional requirements are outlined in Section 5. Proforma for implementing the recommendations is dealt with in Section 6.

**APPENDIX—I**

**Shift Arrangement for an L.T.I.**

<i>Trade</i>	<i>First Shift</i>	<i>Second Shift</i>
1. Blacksmith	16	16
2. Carpenter	16	16
3. Fitter	16	16
4. Moulder	16	16
5. Mechanist	12	12
6. Turner	12	12
7. Mechanic Instrument	16	16
8. Mechanic Motor	16	16
9. Sheet Metal Worker	16	16
10. Draughtsman (Mech.)	32	—
11. Electrician	16	16
12. Mechanic Radio	16	16
<b>TOTAL</b>	<b>200</b>	<b>168</b>



## APPENDIX—II

### Comparative Statement of Areas for an I.T.I. of 368 seats

Sl. No.	Item	Areas in sft. as recommended by		
		<i>Ad hoc</i> Committee	D.G.R. & E.	B.P. Team
<b>I. Administrative Building</b>				
1.	Principal . . . . .	400	300	300
2.	Steno . . . . .	..	200	200
3.	Waiting Room . . . . .	400	300	..
4.	Staff Room . . . . .	800	600	600
5.	Clerk's Room (Office) . . . . .	800	320	360
6.	Record Room . . . . .	400	200	200
7.	Library Room . . . . .	1000	1000	} 1000
8.	Reading Room . . . . .	..	500	
9.	Class Rooms . . . . .	3000	3600	2700
10.	Demonstration Hall . . . . .	800	800	800
11.	Drawing Halls . . . . .	1000	600	600
12.	Canteen . . . . .	480	1013	1013
13.	Lockers . . . . .	..	100	100
	<b>TOTAL</b>	9080 sft.	9533 sft.	7873 sft.
<b>II. Workshop Building</b>				
1.	Black Smith . . . . .	4800	2496	2112
2.	Carpenter . . . . .	2400	4275	3360
3.	Fitter . . . . .	4800	1025	1024
4.	Moulder . . . . .	2400	2025	2032
5.	Machinist . . . . .	4000	1995	1992
6.	Turner . . . . .	4000	1500	1500
7.	Mechanic (Inst.) . . . . .	3200	750	752
8.	Mechanic (Motor) . . . . .	6000	2800	2800
9.	Sheet Metal Worker . . . . .	2400	1035	1040
10.	Electrician . . . . .	3200	1950	1952
11.	Draughtsman . . . . .	2400	2960	2112
12.	Mechanic (Radio) . . . . .	2400	1120	960
13.	Allied Trades . . . . .	6400	3200	3200
14.	Foreman . . . . .	500	300	200
15.	Supervisors . . . . .	..	600	400
16.	Demonstration Room . . . . .	..	400	400
17.	Lockers . . . . .	..	300	640
18.	Stores . . . . .	5250	4600	3242
	<b>TOTAL</b>	54150 sft.	33331 sft.	29718 sft.

## APPENDIX—III

### Proforma regarding Industrial Training Institutes

**PART I—General.**

1. Name of Institute

2. Location

3. Total Strength

4. Break up

<i>Trades</i>	<i>Seats</i>	
	<i>Ist Shift</i>	<i>2nd Shift</i>
(i) Blacksmith . . . . .	..	..
(ii) Carpenter . . . . .	..	..
(iii)            . . . . .	..	..
<b>Total .</b>		

5. Estimated cost of

- (a) (i) Main Building
- (ii) Workshop
- (iii) Hostel
- (iv) Staff quarters
- (v) Ancillary Buildings

- (b) (i) Land
- (ii) Development

6. Cost per sft. of built-up area of

	<i>(a)</i>	<i>(b)</i>
(i) Main Building . . . . .	..	..
(ii) Workshop . . . . .	..	..
(iii) Hostel . . . . .	..	..
(iv) Staff Quarters . . . . .	..	..

(a) excluding cost of internal services

(b) including cost of internal services such as water-supply and electrical installations.

7. Cost index of the place.

## PART II—Design Details

Sl. No.	Particulars	Norms laid down by B.P. Team	Figures realised with reasons for deviations if any
(1)	(2)	(3)	(4)
<i>A. Main Building</i>			
1	Carpet area . . . . .	..	..
2	Total built-up area . . . . .	..	..
3	Design efficiency . . . . .	65 to 70%	..
4	Plinth height . . . . .	1'-6" above crown of approach road.	..
5	Floor to floor height	11ft.	..
6	Live load assumed in design	Rooms—60 lbs/sft. Corridor—80 lbs/sft.	.. ..
<i>B. Work shop</i>			
1	Carpet area . . . . .	..	..
2	Total built-up area . . . . .	..	..
3	Design efficiency . . . . .	80 to 85%	..
4	Sizes of work sheds . . . . .	Span 40 ft. Length in multiples of 12½ to 15ft. as required.	..
5	Plinth height . . . . .	1'-0" above crown of approach road	..
6	Height from plinth to tie level of roof.	14 to 16 ft.	..
<i>C. Hostel</i>			
1	Number of trainees to be accommodated in the hostel	50% of the total strength.	..
2	Floor area per trainee in the dormitory.	55 to 60 sft.	..
3	Built-up area per trainee.	140 to 145 sft.	..
<i>D. Staff Quarters</i>			
1	Total number of staff.	..	..
2	Percentage of staff for whom staff quarters have been provided.	50 % of total staff strength.	..