

SCIENTIFIC AND ENGINEERING LIBRARIES OF ROORKEE : AN APPRAISAL

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[Roorkee is a town of excellence in terms of advanced engineering education and scientific research for over a century. Seven national level scientific, educational and research institutions are located in this small town of district Haridwar. The libraries attached to these establishments are very advanced in terms of collection, services and technology. A survey of these libraries has been carried out by circulating a questionnaire and by personal interviews from the librarians of these libraries. An attempt has been made to examine the status of these libraries in terms of collection, facilities, manpower and services offered etc. Based on the results of the survey and major findings, few suggestions have been given to improve the utility, efficiency and effectiveness of these libraries. The observations are being presented in this paper.]

PROLOGUE

Roorkee, as a geographical spot, is too small to find a place in a world map. It may not be found even on some maps of India. In 1847 the site for an engineering college was selected near a village situated about thirty kilometres west-south-west of the ancient holy city of Haridwar (whose fame goes back from history into mythology) because a challenging feat of engineering was being accomplished there in the shape of an aqueduct carrying a canal over a river. The village turned out to bear the name Roorkee, a name which in course of a century was destined to become in India a synonym for engineering, civil as well as military, for, in addition to the college, it also became in 1853 the headquarters of an army corps of engineers known as the Bengal Sappers and Miners. The two organisations grew hand in hand, each helping the other in full measures. The senior administrative and teaching positions in the college were held by Royal Engineers for over seventy years, while in its turn the college admitted candidates from the army to its engineer and overseer classes and survey and signalling courses designed especially for army men. Gradually the two become more and more independent of each other with the college having its own civilian staff and the army running its own training courses, till finally after about hundred years of close association, the university had totally civilian character meeting civilian needs and the army had its own college of Military Engineering at Pune. But the close bonds of friendship continued.

Meanwhile the village of Roorkee gradually grew into a little township meeting the needs of a well laid out cantonment and the college campus. One and only one industry grew in it, the cottage

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industry of drawing and survey instruments and that too as a byproduct of its becoming the centre of engineering education. Reflecting the same trend in the context of the extended scope of this education, only one more cottage industry has been added to it in recent years that of small electronic equipment (1).

EDUCATIONAL EXCELLENCE OF ROORKEE CITY

Roorkee is a city of excellence in education and research specially in applied sciences. It has an old age Thomason College of Engineering, presently Indian Institute of Technology (IIT) Roorkee, Central Building Research Institute (CBRI), National Institute of Hydrology (NIH), Irrigation Research Institute (IRI), Institution of Engineers India, K.L. Polytechnic and College of Engineering with libraries and information centres of these establishments. Besides these institutions of national importance there are some very good colleges and schools situated at Roorkee. Hosts and public schools like industry are also mushrooming duly recognised by ISCE/CBSE, Delhi. Education for children in English as well as Hindi medium is excellent coupled with the network of primary schools run by Roorkee Nagar Palika and District Board courses as well (2).

OBJECTIVES

Keeping in view the above perspectives it was decided to undertake the present study with the following main objectives.

- (a) Overall assessment of the status of scientific and engineering libraries of Roorkee;
- (b) Library working hours;
- (c) Professional status of staff;
- (d) Types of collection;
- (e) Technical operations;
- (f) Number of users being served;
- (g) Various library services being provided;
- (h) State of the application of modern information technology .

METHODOLOGY

Data referred in this paper has been collected through a questionnaire from seven technical libraries at Roorkee. However, some other sources like Annual Reports, Brochures etc. were also consulted in preparation of this paper. The data collected, has been presented in the form of tables.

DISCUSSION

A library is a back bone of any research, academic or learning organisation. It can be rightly said that without library neither a research project can be selected nor current one can be completed or completed project can be reported well without timely and proper information flow at all stages
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of decision making. Without which it may prove a wasteful attempt, redundancy of half backed technology yielding no marketability (3).

The libraries attached to the various educational and research institutions at Roorkee have very rich and rare collection of literature. Most of these libraries are very well equipped with the modern electronic devices for storage, retrieval and dissemination of information.

Table one shows the general information about seven scientific and engineering libraries located at Roorkee. Out of them, the Central Library of IIT Roorkee is the oldest and biggest library in this region and was established in 1847 as College Library .It was renamed as Central Library in 1856. The library functioned in the main building of the University (now IIT) till occupied the present building in 1961. Technically all the operations of the library are divided into seven sections out of them Reference, Periodicals, Text Book Loan Scheme and Computerised Information Services are the major sections of the library .For regular updating and developing of the holdings this library is utilised about Rupees 1.25 crores annually but it seems small amount for such a big library .Now after declaration of IIT, it is hoped that the budget of the library will increase much more.

Next to the Central Library, IIT Roorkee, two research institutions viz Central Building Research Institute and National Institute of Hydrology have well equipped and highly specialised libraries in the areas of building science and water resources respectively. The former was established in the year 1950 and later in 1979. From the point of view of their specialisation these libraries are unique in nature. Each of them spent annually about Rupees 15 to 40 lakh for the development of their resources.

The other engineering organisations at Roorkee like Irrigation Research Institute, Institution of Engineers India, K.L. Polytechnic also have old and good libraries but due to limitations of their resources, these libraries could not be developed as other institutions. The library of College of Engineering was established in the year 1999. This library is growing fast and it is hoped that this will be a big information agency in near future.

LIBRARY TIMINGS :

Library timing is an important factor in the utilization of library materials. It can be observed from the table that the Central Library, IIT Roorkee is kept opened for about 14 hours due to its academic nature. The Library of College of Engineering serves 11 hours a day. The libraries of other institutions provide services in their normal working hours.

READERSHIP :

The library is mainly a service oriented organisation, which disseminates information through various documents received in the library.

Users are the main component of a library system. If there is no user, there is no need of a library .All the scientific and engineering libraries at Roorke are the oceans of knowledge. A good

amount of readership and users visit in these libraries regularly for the reasons of easy availability of excellent, continuous and varied literature especially in engineering and applied sciences.

STAFF POSITION :

The staff is an essential organ that keeps the system moving. The library work and services are dependent on this organ. The success and progress of the library services can be increased or curtailed on the basis of the availability of proper staff. The Central Library, IIT Roorkee has thirty five professionally qualified staff besides ten number of non- professionals and computer personnels. Unfortunately the libraries of other institutions are awfully understaffed. In these libraries all the activities are moving on the shoulders of one or two professionally qualified staff. Their future promotional avenues are also not good in all the libraries.

COLLECTION :

Table two shows the various types of collection in different libraries. Books, bound volumes of periodicals, technical reports and Ph.D. thesis, Indian and foreign standards, atlases and maps, microforms and other type of documents are categorised separately. Education and research are mainly guided through information contained in these documents. It can be observed from the table that Central Library, IIT Roorkee is having largest collection of documents. Total collection of this library includes about 3,64,510 documents which is comprised of books / conference proceedings / technical reports, bound volumes of periodicals, standards, UP Gazettes, thesis and dissertations, video cassettes, Compact Disks etc. on various disciplines in humanities, social sciences, basic sciences, engineering and technology and biotechnology. Its civil engineering collection is one of the best in the country.

The library of C.B.R.I. is specialised in building science, civil, architecture and structural engineering. The total holdings of the library comprises of 56,262 documents which is very big collection for a small branch of knowledge.

The library of National Institute of Hydrology has 19,179 documents mostly on hydrology and water resources and follow the same categorisation as described above.

The libraries of other engineering institutions viz IRI, Institution of Engineers India and K.L. Polytechnic has also good collection of engineering literature. The library of college of Engineering is in primary stage of evolution because this institution is youngest of the above Libraries.

PERIODICAL LITERATURE :

Periodicals are mostly the first hand documented records of original research and form the primary source of information. They constitute the bulk of the literature in any discipline and serve as the forum where different intellectual contributions are made by different authors and carry current information in the respective field. Study of items published in a periodical may reveal the state and status of the subject field to which the periodical belongs or to the state and status of the periodical in the background of the state of research activities in the subject field. The Central

Library, IIT Roorkee, Library of C.B.R.I., and Library of N.I.H. have good number of periodicals in their respective fields. The scientists, scholars, educators and students of engineering disciplines of this small town are very fortunate that almost all the eminent periodicals in engineering disciplines are available within the radius of two-three kilometres. Table three shows the number of periodicals in different libraries. The libraries of I.R.I., Institution of Engineers, and K.L. Polytechnic subscribe limited number of periodicals due to their budgetary limitations.

TECHNICAL PROCESSING AND CIRCULATION SYSTEMS :

Technical operations like classification, cataloguing, and other techniques of information storage, retrieval and dissemination are the basic functions of any library system. Libraries classify their documents in a logical, filiatory or pedagogical sequence on the shelves to make meaningful groups for browsing and for efficiency in retrieval. Classification schedules are propaedias of knowledge and represent its structure. Library catalogue inform about the holdings of the library. In this way there is a symbiotic relationship in between classification and catalogue. Table Four gives an account on various technical operations including classification and catalogue. The Dewey Decimal Classification Scheme is being used in all the libraries except libraries of C.B.R.I. and N .I.H. These two research libraries are using UDC because documents of specialised nature need depth classification. For cataloguing of the literature Anglo-American Cataloguing Rules are being followed in all the libraries. Browne Card System is used in all the libraries for charging and discharging of the documents. Computers are also being used for this purpose in some libraries.

COMPUTER APPLICATIONS :

Today, libraries in India and abroad are increasingly using computers and related technology to improve the efficiency, and effectiveness of their information services. This inturn has stimulated interest in networking, sharing of information and exchange of database records among libraries. Four libraries viz Central Library, I.I.T Roorkee, libraries of C.B.R.I., N.I.H. and College of Engineering have adopted modern information technology, fully or upto some extent. The other libraries could not apply computers due to their limitations of resources. The Central Library, IIT Roorkee and Library of C.B.R.I. are the two fully automated libraries in Roorkee. Automation Packages TROODON and LIBSYS are being used respectively in these libraries. In Central Library, IIT Roorkee, a CD-ROM network comprising of Axis Store point CD-Server with 14 CD- Tower and four Pioneer CD- ROM exchangers have been established. The CD Net is integrated with library network. Very useful CD-ROM databases like Compendex plus, Metadex and Materials Abstracts, Biotechnology Abstracts, MathSci, Inspec Ondisc, International Civil Engineering Abstract, Energy and Environment Abstract, Water Resources Abstract, ICONDA (International Construction Database) and Applied Science and Technology Index are available with the Central Library, IIT Roorkee. Similar type of facilities are also available in C.B.R.I. in the areas of building science and technology.

The library of National Institute of Hydrology is using CDS/ISIS package for preparation and maintenance of bibliographic database. The complete automation and networking could not be initiated because the library building is under the process of modernisation.

The library of College of Engineering has started to automate some of its operations by using FOX Pro.

RESOURCE SHARING AND NETWORKING :

Resource sharing is nothing but sharing of library resources by participating libraries among themselves on the basis of principle of co-operation. In such a co-operative venture it becomes possible for a user in any of the participating libraries to make use of the resources of others. Thus, through resource sharing consortium, libraries can improve the total collection of reading material, consolidate their technological capabilities, improve their dissemination tools and extend their information services to a larger user community (4).

No library is self sufficient in its holdings. It is quite natural that a good interaction will be made among all the scientific and engineering libraries of Roorkee. These libraries maintained good resource sharing relations not only among each other but also with libraries of the adjacent cities. They maintain rapport and liaison with other libraries on inter-library-loan on reciprocal basis. The faculty members, research scholars and students of IIT Roorkee are benefitted from other libraries. To improve the resource sharing and inter-library-loan service, a Local Area Network to all these libraries is proposed.

CONCLUSION :

Roorkee is a centre of excellence in academic education and research. The libraries attached to various academic and research organisations in scientific and engineering disciplines, have earned the competence of providing information services necessary for education and research. They can serve the users community comprising of their own users, other academic and research organisations of the country, consultants and private practitioners at all points of reference and information through documents in various engineering disciplines. To improve the efficiency and effectiveness of these libraries and for best utilization of their resources the following suggestions are being given :

1. All the scientific and engineering libraries at Roorkee should be categorised on the basis of the formula recommended by Vth Central Pay Commission and efficient and well trained staff should be recruited on the basis of above formula. Staff should be given proper status and good salary so as to attract the efficient person with subject background.
2. The existing semi-professional and non-professional staff should be granted study leave to improve their qualifications and skill so as to be helpful in providing better services in these libraries.
3. Libraries should be kept open for longer hours so as to enhance their use after the regular working hours.
4. Sufficient grants should be allocated for building up of infrastructure for introducing modern information technology and for preparation of comprehensive data bases.

5. For better utilisation of resources a computerised Local Area Network should be established by linking all these libraries.
6. For maintaining the economy in acquisition of literature especially in case of journals a co-operative policy should be adopted and duplication in acquisition should be avoided.
7. Overall supervision of the library should be in the hands of the librarians. Directors of libraries, Scientist or Officer incharges have got no knowledge of professional techniques and library problems.

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TABLE ONE : GENERAL INFORMATION

Sl. No.	Name of the libraries	Year of establishment	Library timings	Number of library staff			Number of sections	Number of daily users	Annual Budget (Rs)	
				Prof	Semi Prof	Non-Prof				Total
1.	Central Library, I.I.T., Roorkee	1847	8.15 AM to 10 PM	20	15	10	45	07	800	1.25 Crores
2.	Library, C.B.R.I., Roorkee	1950	8.45 AM. to 5.30 PM	04	02	03	09	06	50 - 100	30-40 Lakhs
3.	Library, N.I.H., Roorkee	1979	9.00 AM. to 6.00 PM	01	01	02	04	05	50 - 80	12-15 Lakhs
4.	Library, I.R.I., Roorkee	1954	9.30 AM. to 5.00 PM	01	01	—	02	03	25	Not specified
5.	Library, Institution of Engineers India : Roorkee Centre	1961	5.00 MA. to 6.30 PM	01	—	—	01	03	15	-do-
6.	Library, K.L. Polytechnic Roorkee	1956	10 AM. to 5.00 PM	—	—	02	02	03	100	15000
7.	Library, College of Engineering Roorkee	1999	8.45 MA. to 8.00 PM	02	02	—	04	03	300	4.5 Lakhs

TABLE TWO : COLLECTION

Sl. No.	Name of the libraries	Books	Bound Vol. of Periodicals	Technical Reports/ Ph.D. Thesis	Indian and Foreign Standards	Atlases and	Micro-forms	Others	Total maps
1.	Central Library, I.I.T., Roorkee	2,82,000	75,000	2500	5000	10	—	—	3,64,510
2.	Library, C.B.R.I., Roorkee	38,578	17,628	—	—	—	56	—	56,262
3.	Library, N. I. H., Roorkee	9,668	1,337	4,409	306	1979	41	1439	19,179
4.	Library, I.R.I., Roorkee	18,881	—	—	741	—	—	—	19,622
5.	Library, Institution of Engineers India : Roorkee Centre	2,329	175	325	250	—	—	—	3,079
6.	Library, K.L.Polytechnic Roorkee	25,000	19	—	—	—	—	—	25,019
7.	Library, College of Engineering Roorkee	10,538	—	—	—	—	—	125	10,663

TABLE THREE : CURRENT PERIODICALS

Sl. No.	Name of libraries	Journals		Daily News Papers	Popular Magazines	Total
		Indian	Foreign			
1.	Central Library, I.I.T., Roorkee	100	275	15	25	415
2.	Library, C.B.R.I., Roorkee	51	76	09	06	142
3.	Library, N.I.H., Roorkee	31	28	02	—	61
4.	Library, I.R.I., Roorkee	05	—	—	—	05
5.	Library, Institution of Engineers India : Roorke Centre	—	—	02	—	02
6.	Library, K.L. Polytechnic Roorkee	05	07	04	02	18
7.	Library, College of Engineering Roorkee	24	—	06	—	30

TABLE FOUR : TECHNICAL OPERATIONS AND SERVICES

Sl. No.	Name of the Libraries	Scheme of Classification	Catalogue Code	Circulation System	Computer Applications			
					Name of the software	Bibliographic services	Charging/ discharging system(CASSID)	Serials control
1.	Central Library, I.I.T., Roorkee	DDC 21st ed.	AACR-II	Browne + Computer	Troodon	Yes	Yes	Yes
2.	Library, C.B.R.I., Roorkee	UDC (BS : 1000M:1993)	AACR-II	Browne + Computer	LibSys NT Version	Yes	Yes	Yes
3.	Library, N.I.H., Roorkee	UDC (BS : 1000 :1961)	AACR-II	Browne	CDS/ISIS	Yes	Yes	Yes
4.	Library, I.R.I., Roorkee	DDC 16th ed		Browne	—	—	—	—
5.	Library, Institution of Engineers India : Roorkee Centre	DDC 17th ed	AACR-II	Browne	—	—	—	—
6.	Library, K . L Polytechnic Roorkee	DDC 19th ed	AACR-II	Browne	—	—	—	—
7.	Library, College of Engineering Roorkee	DDC 20th ed	AACR-II	Browne + Computer	DBMS (FoxPro)	Yes	Yes	—