

# Main Building Refurbishing Project at NIM<sup>1</sup>

**Hasmukh Gajjar**

On a Christmas evening of the year 2012, the Director of Narmada Institute of Management (NIM) reviewed the progress of Main Building Refurbishing Project (MBRP) that had been recently awarded to a contractor. He was concerned about the timely completion of this project after observing the slow pace of work and limited resource deployment by the contractor. Timely completion of this project was critical as this major work is to be completed in classroom blocks of the main building before the beginning of the next academic term in July 2013.

## About NIM<sup>2</sup>

Established in 1996, Narmada Institute of Management (NIM) is a part of the family of nationally important management institutes. The institute was located in Indore to give an impetus to management education in Central India and had ever since been acting as the pioneer in the field of management, interfacing with the industry, government sectors and PSUs. Institute started in 1996, with a batch of 45 students in its flagship management programme and increased the batch size to ten fold in the year 2010. NIM offers various programmes to cater the requirement of the different groups. Currently, NIM has more than a thousand fulltime students on campus during any day of the academic calendar.

Situated atop a scenic hillock, NIM is spread over 193-acre land. In the recent five years, Institute had put up massive infrastructure ranging from hostels, classrooms, residential houses and sports complex in order to cater the needs of the student population and faculty on campus. NIM's accomplishments in such a short span of time can be attributed to its innovative spirit, its will

to excel, and, to a great extent, to the relationship it has developed with Indore community.

## Main Building Refurbishing Project (MBRP)

NIM had put up its first building (now called as Main building) in the year 2003. Main building was an aesthetic design on the hillock in a circular geometry. It comprised of 3 faculty blocks (FB-1, FB-2 and FB-3), 2 administrative blocks (AB-1 and AB-2) and 4 classroom blocks (CB-1, CB-2, CB-3 and CB-4) located tangentially on the circular geometry (see Figure-1). Main building's external surface was clad with popular sand stones of light pinkish shade. With increasing age of the building, these stones started falling (on the ground) after losing their bond with the external surface of the building. This posed a great risk to the safety of the main building users. Hence, NIM decided to remove them and refurbish the main building to enhance its strength and appearance. The various activities of the project along-with their precedent relationships, and total work content are shown in Exhibit-1.

This project was awarded to Mid-India Construction Company (MICC) after a due tendering process on November 21, 2012 with a tendered cost of Rupees Three crores. As per the tender's terms and conditions, MICC had to finish the project within eight months from the award date of the contract. The major milestones of the project in tender are shown in Exhibit-2.

## About MICC

MICC is a private firm set-up in November 2004. It had executed many building renovation projects of small to medium scale since its inception. MICC had gradually acquired technical skills to deliver quality work but it still lacked project management skills for timely completion of the project. MICC's project planning was very ad-hoc and often resulted in delay in projects completion.

<sup>1</sup> Dr. Hasumukh Gajjar, Indian Institute of Management Indore prepared this case solely as the basis for class discussion rather than to illustrate either effective or ineffective handling of an administrative situation. Data have been disguised for purposes of confidentiality.

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<sup>2</sup> Source: NIM's website

**Project Planning by MICC for MBRP**

MICC planned the main building refurbishing project at the time of bidding and adopted the following strategy to complete the entire work. The external surface of the building had a total of 28,000 square meter (sq. m) area that was divided in to 14 fronts of 2,000 sq. m each. MICC planned to complete two such fronts every month so that it could complete the entire work in 7 months. Similarly internal surface of 24,400 sq. m was also divided into 14 fronts and targets were set accordingly. Exhibit-3 shows MICC planning for MBRP including direct material and labor costs. MICC also identified two kinds of direct overhead costs for a work front of 2,000 sq. m: (i) Direct supervision cost of Rs.19,285. (ii) Scaffolding cost of Rs.2,70,000. However, scaffolding cost for subsequent work fronts could be avoided if same scaffolding would be used.

**Project Execution**

MICC mobilized the resources and commenced the work on November 27, 2012. Worried about the slow progress of the work after a month, the Director of NIM telephoned Mr. Rao, Project Manager at NIM, to assess the situation and suggested to him to come up with a plan for timely completion of the project. Rao immediately asked Sharma, a Project Manager of MICC, to have a discussion in his office as early as possible.

Next day morning, Rao called a site engineer in his office and asked him to report back by afternoon with actual progress of the project, details of the resources assigned by MICC etc. Site engineer collected required information as shown in Exhibit-4 and submitted it to Rao. Looking at the progress report, Rao realized that MICC had not deployed adequate resources.

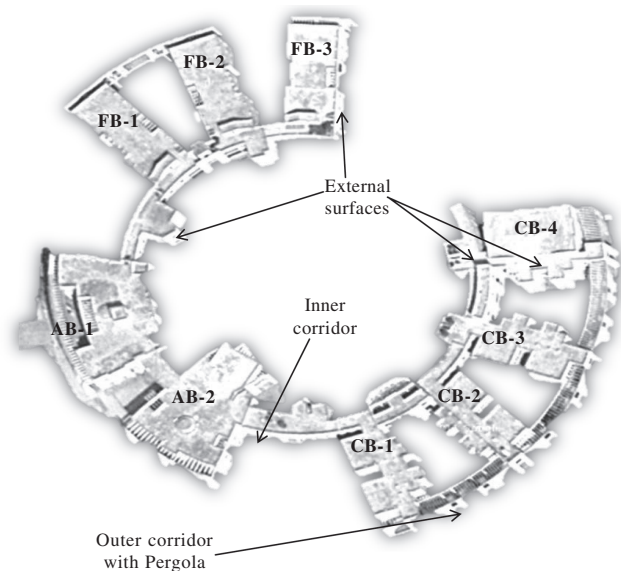
In afternoon meeting, Rao had a detailed discussion with Sharma and both agreed to work out a plan for timely completion of the project. Sharma immediately agreed to deploy more resources and promised to start the painting activities too. Rao suggested to Sharma that MICC could run many parallel work-fronts of 2000 square-meters each due to easy access to and less dependability between work-fronts. Sharma thought that deploying more direct labor and material would

not be a problem, but MICC would have to invest into additional scaffolding.

Sharma left Rao's office with a note of promise to chalk-out the plan for timely completion of the project but he was not sure as how to proceed further. Several questions came to his mind. What did I miss in the initial plan? How quickly can one complete a work-front of 2000 square-meter? How many teams have to be deployed for various activities? What would be the implications to MICC if it would go for many parallel work-fronts by investing in additional scaffolding? Would MICC's proprietor agree to such an investment? How many such parallel work-fronts are to be opened?

Rao also left for a day from office thinking about how to prepare plan that can ensure timely completion of MBRP. He thought that MICC could easily run four parallel work-fronts of 2000 square-meter each and finish the project in about 3 months. He had to respond to the Director, NIM with a concrete project plan as soon as possible.

**Figure-1: Arial view of Main Building, NIM**



**Exhibit-1: Summary of Various Activities of Main Building Refurbishing Project**

Activity	Description	Predecessor	Work Content (Square Meter)
A	Erection of scaffolding	-	28000
B	Stone removal	A	28000
C	Plaster removal	B	28000
D	Hacking off plaster	C	2800
E	Plaster meshing	D	2800
F	First coat of plastering	E	28000
G	Final coat of plastering	F	28000
H	Removal of scaffolding	G	28000
I	Preparation for exterior painting	G	28000
J	Priming coat of exterior painting	I	28000
K	First coat of exterior painting	J	28000
L	Final coat of exterior painting	K	28000
M	Preparation for interior painting	-	24400
N	Priming coat of interior painting	M	24400
O	First coat of interior painting	N	24400
P	Final coat of interior painting	O	24400

Note: Activity-I can be started only after fourteen-day curing period from the completion of activity-G.

Source: Project documents

**Exhibit-2: Milestones of Main Building Re-furbishing Project**

Sr. No.	Description	Time allowed In months from day of award of contract (months)	Amount to be withheld by NIM in case of non-achievement of milestone (lakhs)
1	Completion of 40% work	4	2
2	Completion of 60% work	6	2
3	Completion of 80% work	7	2
4	Final completion	8	4

Source: Project documents

**Exhibit-3: Project Planning for Two Thousand Square Meter Work-front**

Activity	Predecessor	Work Content (Sqm)	Work rate* (sqm/team/day)	Planned Resources (No. of teams)	Cost** (Rs./sqm)
A	-	2000	250.00	4	33.00
B	A	2000	36.36	11	85.00
C	B	2000	36.36	11	75.00
D	C	200	40.00	1	93.00
E	D	200	40.00	1	95.00
F	E	2000	41.67	8	207.00
G	F	2000	41.67	8	188.00
H	G	2000	400.00	5	19.00
I	G	2000	33.33	12	19.50
J	I	2000	62.50	6	37.00
K	J	2000	62.50	6	66.00
L	K	2000	40.00	10	66.00
M	-	1743	41.50	7	22.00
N	M	1743	51.26	5	22.00
O	N	1743	51.26	5	53.00
P	O	1743	41.50	6	53.00

\* Work rate is known to MICC based on the past experience in the relevant activity.

\*\* Includes direct labor and material cost.

Source: Project documents

**Exhibit-4: Progress Report as on December 26, 2012**

Activity	Available Resources (No. of teams)	Amount of work executed (sq. m)	Activity	Available Resources (No. of teams)	Amount of work executed (sq. m)
A	2	3000	I	-	Not Started
B	6	1500	J	-	Not started
C	5	1500	K	-	Not started
D	1	150	L	-	Not started
E	1	150	M	-	Not started
F	4	1500	N	-	Not started
G	4	1500	O	-	Not started
H	2	1000	P	-	Not started

Source: Project documents

**Hasmukh Gajjar** is a faculty in the area of Operations Management and Quantitative Techniques at Indian Institute of Management Indore, India. He holds a Ph.D. from the Shailesh J. Mehta School of Management, Indian Institute of Technology Bombay, India. His articles are published in the leading journals like Annals of Operations Research, Asia-pacific Journal of Operational Research and International Journal of Retail & Distribution Management. His major areas of interest are retail operations, modeling and optimisation.