



MEMORANDUM OF UNDERSTANDING

BETWEEN

RESISTOFLEX DYNAMICS PRIVATE LIMITED, NOIDA, UTTAR PRADESH

AND

INDIAN INSTITUTE OF TECHNOLOGY (IIT) DELHI, NEW DELHI

FOR

CONDUCTING THE PROJECT TITLED

Mobile Earthquake Exhibition: Educating Masses on Earthquake-Resistant Design of Structures

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- (i) to develop a Mobile Earthquake Exhibition in an adequate size van having national permit to reach different parts of the country;
- (ii) to design the shake-table installed in the van, sensors to record the levels of vibration, correlating the dynamic excitation with past some of the historical earthquakes through a data-acquisition system, control panel to operate the moving parts on-board, all together will cater for development of the Mobile Earthquake Exhibition for showcasing essence of seismic safety;
- (iii) to fit the van with video display units and portable shake-tables to show the science behind earthquakes, earthquake-resistant design of structures, and how seismic safety of typical homes can be assured employing modern technologies such as base isolation or different kinds of dampers; and
- (iv) to give the visitors to the Mobile Earthquake Exhibition an experience of earthquake-type shaking themselves by riding on the platform on shake-table and feel the base excitation, given through a control panel.

The eventual aim of the project is to spread awareness about seismic-resistant constructions and address their concerns about safety from the devastating earthquakes.

4. Scope & Methodology of Works:

IIT Delhi shall undertake and complete the study, as per protocol/ guidelines as stipulated and described by RDPL NOIDA, Uttar Pradesh. As per objectives above and tasks are listed below for each work package (WP) with months (M):

The proposed Mobile Earthquake Exhibition will be developed in stages, over a period of three years. Nevertheless, beginning from the first year itself, the van will be usable to commence the exhibition. The additional features will be supplemented in the subsequent years, building an impressively educative display and “feeling” the earthquake-like dynamic excitations. Newer technologies of earthquake-resistant design of structures, and the proposed equipment such as shake-table, sensors, data-acquisition system, control panel will be added subsequently in the next years.

5. Deliverables:

This project will deliver a Mobile Earthquake Exhibition for educating masses on earthquake-resistant design of structures, through this outreach initiative of its kind.

6. Time Frame and Activity-Wise Bar Chart:

The project duration for its completion is 36 months with activity wise time schedule given in the bar chart as under:

Activity	0 - 6 months	6 - 12 months	12 - 18 months	18 - 24 months	24 - 30 months	30 - 36 months
Literature survey						
Assessment of mobile exhibitions and their features						
Market survey of mobile						

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8. Activity-Wise/Milestone-Wise Cost:

	Item	Budget			In Rupees
		1 st year	2 nd year	3 rd year	Total
A.	Direct Cost of Materials/Equipment	25,00,000.00	25,00,000.00	25,00,000.00	75,00,000.00
B.	Direct Cost of Man Power	-	-	-	-
C.	Recurring	3,11,112.00	2,61,111.00	2,61,111.00	8,33,334.00
	Total (A+B+C)	28,11,112.00	27,61,111.00	27,61,111.00	83,33,334.00
D.	Institute Overheads (20% of the Total Project Cost)	5,62,222.40	5,52,222.20	5,52,222.20	16,66,666.80
	Grand Total (A+B+C+D)	33,73,334.40	33,13,333.20	33,13,333.20	1,00,00,000.80

Total Budgeted Amount (In Words): Indian Rupees (Rs) One Crore Only.

9. Terms and Conditions of Payment:

- i.
- ii.
- iii.

9.1 Schedule of Payment:

SN	Installment	% of Payment	Amount in Lakhs	Expected Work Packages (WPs) to be Completed at Time of Release of Installment*

9.2 Other Terms and Conditions of Payments:

- i.
- ii.
- iii.

10. Administrative Terms and Conditions:

- i.
- ii.
- iii.



- ii. Project monitoring should be done by this committee for each stage of the project.
- iii. To start with, a quarterly progress report of the project shall be sent by IIT Delhi to RDPL in the first week of every quarter of year.
- iv. Project Investigator (PI) from IIT Delhi will execute the project and will be solely responsible for non-disclosure of the confidential information.

12.4 Intellectual Property Rights (IPR):

Intellectual Property Rights (IPR) will be maintained and followed as per usual/normal practices and norms of the IITD.

Since RDPL would be providing the entire institutional/organizational support for this project apart from funding, it should be free to utilize the technology for future R&D efforts. IIT Delhi can use the outcome of the project for academic purpose including technical publications.

12.5 Force Majeure:

No party shall be held responsible for non-fulfillment of their respective obligations under this agreement due to the exigency of one or more of the force majeure events such as, but not limited to, acts of god, war, flood, earthquakes, strike, lockouts, epidemics/pandemics, riots, civil commotion, lockdowns/curfew, etc. provided on the occurrence and cessation of any such events, the party affected thereby shall give a notice in writing to the other party immediately after but not later than one month of such occurrence and cessation. The period between the occurrence and cessation of such event will be excluded while calculating the period during which the party has to perform his obligations under this Agreement. If the force majeure conditions continue beyond six months, the parties shall then mutually decide about the future course of action.

12.6 Termination of the Project:

- i. If due to any unavoidable and unforeseen reasons, it becomes necessary to terminate the project, expenditure incurred shall be reviewed and the amount/items procured against the project will be returned to RDPL.
- ii. This is sole responsibility of IIT Delhi; if any Professor may retire/transfer IIT Delhi shall arrange to nominate Professor to continue the project.



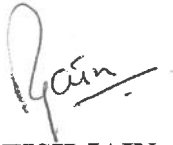
12.10 Seal of the Parties:

The MoU is legally non-binding and all activities will be based in the spirit of independence, mutual respect and share responsibility. This MoU is signed and approved by the respective authorized representatives of each partner.

Signed and delivered by,

**PI of the Project
RDPL, NOIDA, Uttar Pradesh**

For RESISTOFLEX DYNAMICS PVT. LTD.

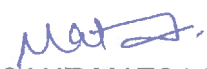


Managing Director

RATISH JAIN

**MANAGING DIRECTOR
RESISTOFLEX DYNAMICS
PRIVATE LIMITED
A-7, SECTOR -2
NOIDA-201301**

**PI of the Project
IIT Delhi**



Dr. VASANT MATSAGAR
Professor
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Indian Institute of Technology Delhi
Hauz Khas, New Delhi-110016

DR. VASANT MATSAGAR

**PROFESSOR
INDIAN INSTITUTE OF TECHNOLOGY
,DELHI
NEW DELHI-110016**

In the presence of,



RDPL, NOIDA, Uttar Pradesh



IIT Delhi

Date: 15/03/2022

Place: IIT Delhi