## CONTENTS

CERTIFICATE	i
ACKNOWLEDGEMENT	ii
ABSTRACT	iii
LIST OF FIGURES	iv
LIST OF TABLES	V
LIST OF SYMBOLS & ABBREVIATIONS	vi
CONTENTS	
1. INTRODUCTION & LITERATURE REVIEW	
1.1 Introduction	1
1.1 Philosophy behind Seismic Isolation System	5
1.2 Basic Requirement of seismic Isolation system	6
1.2 Base isolation	7
1.2.1 Design Criteria for base isolation Devices	8
1.3 Types of base isolation systems	8
1.3.1 Elastomeric bearings	9
1.3.1.1 Laminated rubber bearings	9-10
1.3.1.2 New Zealand (NZ) system	11
1.3.2 Sliding systems	11
1.3.2.1 Pure friction system (PF)	12
1.3.2.2 Resilient friction base isolators (R-F)	13
1.3.2.3 Friction pendulum system (FPS)	14-15
1.3.2.4 Electrified De France (EDF)	15
1.3.2.5 Sliding Resilient Friction bearing (SR-F)	16
1.4 Seismic Retrofitting	16-19
1.5 Applications of base isolation technique worldwide for Seismic retrofitting	20-27
2. OBJECT OF PRESENT WORK	28
3 Execution of Base-Isolation and its analysis methods and proceedings	28
3.1 Base isolator characteristics	28-31
3.2 Trial design of Isolator	31-33
3.3 Base isolator selection	33-34
3.4 Preliminary design of base isolator	34
3.5 Analysis of base isolated structure	35
3.5.1 Response spectrum analysis	35-36
3.5.2 Time history analysis	36
3.6 Fixed base structure	37
3.7 SAP 2000	37-39
3.8 UBC-97 Base isolation design specification	39-40
3.9 Approximate structural performance/Target points	40-42
4.0 NUMERICAL STUDY	43
4.1 General study parameters	43-45
4.2 Numerical example	46
4.2.1 Dimensions of 3D frame	47-49

4.2.2 Isolator properties	49-51r
4.2.3 Seismic loading	52
5 Results & Discussion	53-54
5.1 Analyzed Results	55-60
5.2 Mode shapes of 4, 6 & 9 storeys building frames	61-70
5.3 Shear force diagrams of fixed & Base-isolated 4, 6 & 9 stores Buildings	71-73
5.4 Bending Moment Diagrams of fixed & Base-isolated 4, 6 & 9 stores Buildings	74-76
5.5 Performance points of fixed and base-isolated 4, 6 & 9 storey Buildings	77-79
5.6 B.M.Diagrams for RSP &TH of Fixed Cases of 4, 6 & 9 Storey Buildings	80-82
5.7 Displacement diagrams for TH different cases	83-84
6.0 Site visited Picture to understand the objective work in practical aspect	85-87
7.0 Discussion on results	88-91
8.0 Conclusion	92
<b>9.0.</b> Future scope and Research on base-isolation	93
9.1 work done on High-Rise Base-Isolated Condominium Building in Japan	93
9.1.1Flat slab Base-Isolated High-Rise condominium Building in Japan	94-95
9.1.2 Tallest Base-Isolated Super high -Rise Condominium Building	96-98
References	99