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A Peer-reviewed Journal in Engineering, Science & Innovation
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Abstract

Abstracts commonly have these parts: introduction, study's context, objectives, methodology, key findings, conclusions, implications and replication potential of your research and application in practical problem solving. Your abstract should be written in maximum 250 words in one or two paragraphs, and usually should not include any reference.

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1. Heading one

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(Grady, 2019)

2. Heading one

2.1 Heading two

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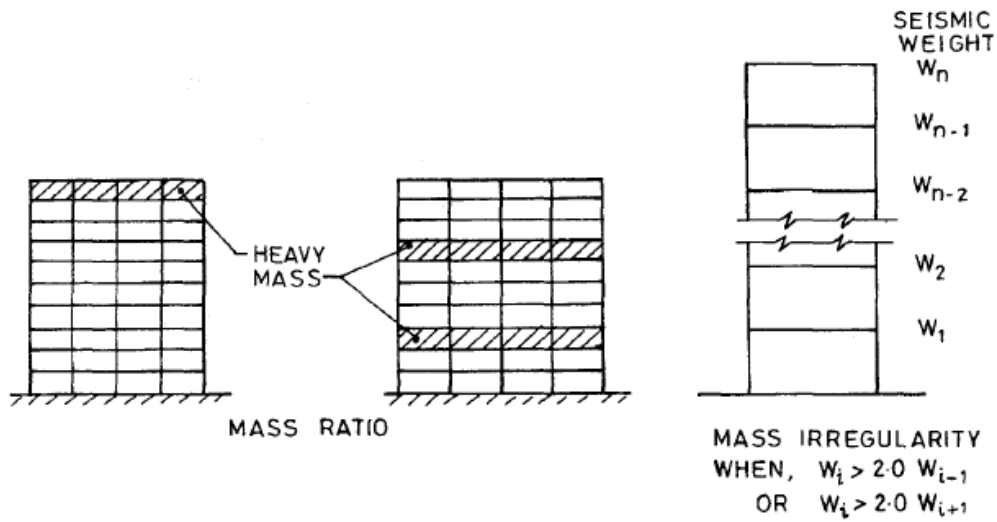


Figure 1:Representation of mass irregular structure.

$$K_i = \sum_{j=1}^{n_c} \frac{12E_j I_j}{L_j^3} + \sum_{m=1}^{n_{strut}} \frac{A_m E_m}{L_m} \cos^2 \theta_m \quad \dots (1)$$

Where,

N_c total number of continuum columns in the i^{th} story

N_{strut} the total number of struts in i^{th} story

E_j ,	modulus of elasticity of materials
I_j	moment of inertia of the member
L_j ,	length of column
I	direction of interest
E_m	elastic modulus
A_m	axial area
L_m	Length
Θ_m	angle of inclination with respect to the horizontal axis of strut



(a)



(b)

Figure 2: a) Vertical geometric irregularity, b) horizontal irregularity.

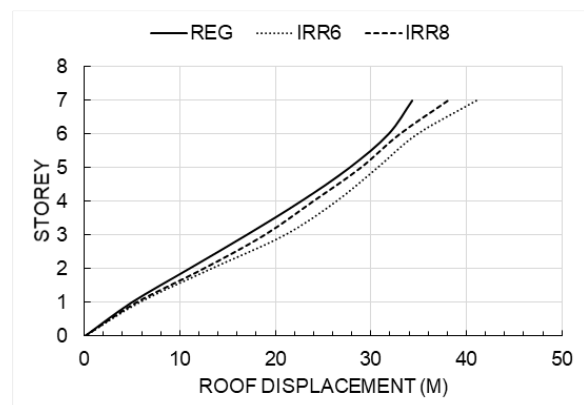
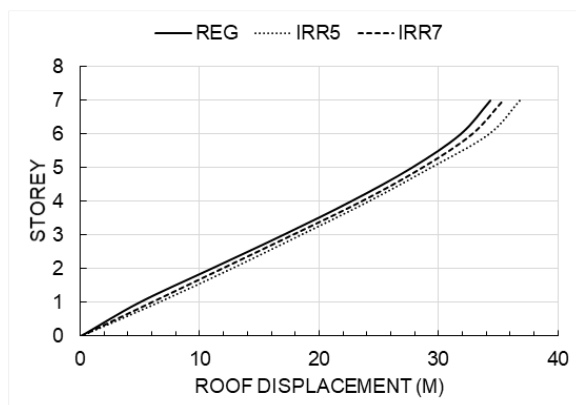
Table 1: Irregularity limits prescribed by IS 1893:2016 (Part 1), EC8:2004, UBC 97, NBCC 2005

Type of irregularity	IS 1893:2016	EC8 2004	UBC 97	NBCC 2005
Horizontal				
a) Re-entrant corners	$R_i \leq 15\%$ (Fig.2)	$R_i \leq 5\%$	$R_i \leq 15\%$	

b) Torsional irregularity	$d_{max} \leq 1.2 d_{avg}$	$r_x > 3.33 e_{ox}$ $r_y > 3.33 e_{oy}$ r_x and $r_y > l_s$,	$d_{max} \leq 1.2 d_{avg}$	$d_{max} \leq 1.7 d_{avg}$
c) Diaphragm discontinuity	$O_a > 50\%$ $S_d > 50\%$	$r_{x2} > l_{s2} + e_{ox2}$ $R_{y2} > l_{s2} + e_{oy2}$	$O_d > 50\%$ $S_d > 50\%$	
Vertical				
a) Mass	$M_i < 2 M_a$	Should not reduce abruptly	$M_i < 1.5 M_a$	$M_i < 1.5 M_a$

Table 2: Irregularity limits prescribed by IBC 2003, Tec 2007 and ASCE – 7.05

Irregularity limits prescribed by IBC 2003, TEC 2007 And ASCE – 7.05			
Type of irregularity	IBC 2003	TEC 2007	ASCE – 7.05
Horizontal			
a) Re-entrant corners		$R_i \leq 20\%$	$R_i \leq 15\%$
b) Torsional irregularity		$d_{max} \leq 1.2 d_{avg}$	$d_{max} \leq 1.2 d_{avg}$ $d_{max} \leq 1.4 d_{avg}$
c) Diaphragm discontinuity		$O_a > 33\%$	$O_a > 50\%$ $S > 50\%$



(a)

(b)

Figure 14: Comparison of storey vs storey displacement in regular and irregular building model

Acknowledgements

The authors would like to thank the ?????? for providing the platform to conduct this research.

References (*The following are the references, yet not sorted alphabetically, reproduced from APA <https://apastyle.apa.org/style-grammar-guidelines/references/examples/published-dissertation-references> as examples of citation for a variety of publications. The authors should consult APA for your work).*

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The author(s) declared that they at the time of submission. This had no impact on the peer review process and the final decision

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Author 1 Name: Funding acquisition, Methodology, Project administration, Supervision, Writing – review & editing.

Author 2: Methodology, Supervision, Writing – review & editing.

Author 3: Data curation, Formal Analysis, Software, Writing – original draft, Writing – review & editing.

Keywords

Keyword 1, Keyword 2, Keyword 3, Keyword 4, Keyword 5

Abstract

Word count: 343

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damage on accessibility to emergency shelters and the complexity of evacuation in earthquake scenarios. In general.

Funding information

This study receives funds from the ?????? (Grant No. 42074064), and ??????? (Grant No. ??????).

Funding statement

The author(s) declare financial support was received for the research, authorship, and/or publication of this article.

Ethics statements

Studies involving animal subjects

No animal studies are presented in this manuscript.

Studies involving human subjects

No human studies are presented in the manuscript.

Inclusion of identifiable human data

No potentially identifiable images or data are presented in this study.

Data availability statement

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