Citation: **Sherif Ahmed (2024), Enhancing Emergency Evacuation Routes through Integration of Safety and Adaptive Characteristics in the Architectural Design of Educational Buildings, International Design Journal, Vol. 14 No. 2, (March 2024) pp 429-438**

Enhancing Emergency Evacuation Routes through Integration of Safety and Adaptive Characteristics in the Architectural Design of Educational Buildings

Dr. Sherif Helmy Ahmed
Assistant Professor, Department of Architecture High Institute of Engineering-15May,
dr.sherif15may@gmail.com

Abstract:

Education has been and remains one of the most important components of the progress of all nations. However, disasters and crises have a significant negative impact, especially on children and the extent to which appropriate educational buildings can be provided to ensure their safe evacuation during disasters. Schools must take responsibility for the ability to support demand in the face of natural disasters. The research encompasses an analysis of distinct challenges presented by natural disasters, incorporating insights derived from fire safety models that align with diverse safety protocols in disaster scenarios. Leveraging the guidelines outlined in the British Code for fire safety, this study aims to augment the suitability standards of building designs specified by the General Authority for Egyptian Educational Buildings. It allows proposed modifications to existing models to mitigate the impact of damage during disaster evacuations. Therefore, this research provides Improving safety features and resilience during disaster evacuation especially in the design of escape routes in school buildings and proposes implementable recommendations for adapting architectural designs, by shortening travel distances in corridors, providing safe fire escape stairs, and providing assembly areas to prevent crowding during evacuation form School buildings. These are factors that play a pivotal role in mitigating the risks posed by natural disasters in educational buildings, and the study supports the idea that effective evacuation strategies in schools depend on an accurate understanding of the challenges posed by different types of natural disasters, to ensure the safety of students during critical circumstances.

Keywords:

Disasters, School buildings, Safe design, Escape routes, Safe evacuation

References:

1. Booth, S. (1993). Crisis Management Strategy: Competition & Change in Modern Enterprises. London: Routledge.
2. Department for Children, s. a. (2007). Building Bulleting 100: Design for fire safety in schools. London: RIBA Enterprises. Retrieved from https://www.legislation.gov.uk/
3. Department, R. a. (2011). Standards and requirements for the suitability of school sites and buildings - public basic and secondary education schools (in existing cities and villages). Cairo: General Authority for Educational Buildings.
4. Education, D. f. (2021). Fire Safety Design for Schools Building Bulletin 100 (revised). London: United Kingdom Government. Retrieved from https://www.gov.uk/government/consultations/building-bulletin-100-fire-safety-design-for-schools
5. Erica D. Kuligowski, R. D. (2005). A Review of Building Evacuation Models. Washington: U.S. DEPARTMENT OF COMMERCE.
6. FEMA. (2023). National Risk Index - Technical Documentation. Federal Emergency Management Agency (.gov). Retrieved from https://www.fema.gov/sites/default/files/documents/fema_national-risk-index_technical-documentation.pdf
7. Guide, U. A. (2003). Accessible Means of Egress. Washington: United States Government. Retrieved from https://www.access-board.gov/
8. Moe, T. L. (2006). An integrated approach to natural disaster management: Public project management and its critical success factors. Disaster Prevention and Management, 5(3), 396-413.
9. Partnership, T. G. (2012). Education Cannot Wait: Protecting Children and Youth's Right to a Quality Education in Humanitarian Emergencies and Conflict Situations. The Global Partnership. Retrieved from http://www.globalpartnership.org/news/364/762/Education-Cannot-Wait-Protecting- Children-and-Youth-s-Right-to-a-Quality-Education-in-Humanitarian-Emergencies-and-Conflict-Situations/
10. Publications, D. F. (2006). Fire Safety Risk Assessment Educational Premises. Wetherby: Ministry of Housing, Communities & Local Government United Kingdom Government. Retrieved from http://www.firesafetyguides.communities.gov.uk/

 This work is licensed under a Creative Commons Attribution 4.0 International License

11. Setiadi, A. (2014). Socio-Economic Impact of National Disasters on the Education Sector: A Case Study of Indonesia. Journal Dialog Penanggulangan Bencana, 5(2), 80-81.
12. UNDP. (2012). Act Now, Save Later: new UN social media campaign launched. Retrieved from http:// www.undp.org/content/undp/en/home/ presscenter/articles/2012/07/02/act- now-save-later-new-un-social-media- campaign-launched-/
13. UNESCO. (2000). Dakar Framework for Action Education for All: Meeting Our Collective. World Education Forum Dakar. Senegal.
14. UNISDR. (2009). United Nations International Strategy for Disaster Reduction. UNlSDR Terminology on Disaster Risk Reduction. Geneva. Retrieved from http://www.preventionweb.net/files/7817_UNISDRTerminologyEnglish.pdf

Paper History:

Paper received September 25, 2023, Accepted December 19, 2023, Published on line March 1, 2024

 This work is licensed under a Creative Commons Attribution 4.0 International License