

Displacement due to flood events and the role of amphibious architecture as a proactive adaptation strategy

Scott Turner^a and Elizabeth English^{b*}

^a*Buoyant Foundation Project, 7 Melville St. S., Cambridge, ON, N1S2H4, Canada*

^b*University of Waterloo, 7 Melville St. S., Cambridge, ON, N1S2H4, Canada*

Abstract

Flood events are the leading cause of fatalities and population displacement due to natural disasters worldwide. The risk of catastrophic losses due to flooding is significant given climate change, deforestation and the increasing proximity of large populations to coastal areas, lakeshores and river basins. Since 2008, weather-related hazards triggered an average annual displacement of 21.5 million people, of which flooding accounted for 55%, or 11.825 million. These staggering figures, and the scale of devastation they represent, often overshadow the multitude of individual stories of loss, tragedy, courage, resilience and renewal that unfold in every disaster.

Adverse impacts of flood events are disproportionately borne by communities with multiple socio-economic vulnerabilities, illustrating that extreme climate events frequently highlight pre-existing inequities, creating “natural” disasters that exacerbate and reproduce these inequities. There is also an increasing recognition of the role of social networks in community resilience during and after disaster events and that the built environment plays a key role in establishing and fostering these social networks. Amphibious architecture, as a low-cost, replicable flood damage reduction strategy, can contribute to a built environment that strengthens vulnerable populations by allowing people to remain in their communities of origins and maintain these social networks that are so critical in fostering resilience in flood events.

A discussion of communities with multiple vulnerabilities in Jamaica, the Interlakes Region of Manitoba, Canada, and Ile-de-Jean-Charles, Louisiana, USA, will explore the potential of amphibious architecture as a flood damage reduction technology that can foster resilience through allowing communities to remain in place after flood events.

Keywords: vulnerable communities; population displacement; proactive flood adaptation strategy; community resilience; climate change adaptation; human cost of climate change

* Scott Turner. Tel.: +1-226-505-1095;
E-mail address: sturner@buoyantfoundation.org