Iris by Arup: Intelligent resilience solutions for properties at risk from natural hazards and climate change

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Arup, the global advisory, design, planning, and engineering firm, launches the Iris platform in beta to bring property portfolio risk management into the digital era.

The threat of natural hazards has always posed an existential threat to organizations, but climate change has increased the frequency and severity of the impacts. In the last decade, economic losses from direct damage alone from hazards such as earthquakes, floods, hurricanes, and wildfires amounted to more than $1 tr, and the costs of business interruption substantially higher.

A growing number of clients with large property portfolios recognize that simply understanding their risks to multiple hazards is not enough. These leading organizations want to take action to implement mitigation strategies and operational plans to limit their potential impact to catastrophic events and protect their people, property, and businesses. They are looking for a comprehensive solution that will enable them to make data-driven decisions with the highest possible impact given their limited resources. For these clients, knowing which actions pay back and which have a low ROI is a priority, so they can invest with confidence.

Arup is launching Iris, a new platform that allows organizations with property portfolios to better tackle the growing threats posed by climate change. Iris combines Arup's multi-disciplinary engineering expertise with sophisticated cloud-enabled simulations to forecast risk, test out and optimize mitigations, and track progress toward organizational resilience goals as actions are taken.

Existing software solutions have largely been developed to support the insurance industry or large financial institutions with jumbo portfolios. At this massive scale, the insights are limited to risk scores based on location and building archetype. They do not consider building-specific characteristics, component-level vulnerability, or organization-specific operations. Hence, the insights are shallow, and they stop short of providing tangible actions at the asset or building system level. They are developed by statisticians, not engineers who understand how buildings behave. And they only support climate hazards, excluding important events like earthquakes. Property owners, end-users, and investors need high-fidelity assessments considering comprehensive hazards and asset characteristics to yield actionable recommendations with a clear ROI.

Unlike existing software, Iris is powered by the highest caliber risk models in the industry which drill all the way down to the building component level, to quantify the likelihood and severity of an organization's physical, economic, and safety risks from future hazard scenarios. The methodology and algorithms result from deep technical expertise acquired through decades of Arup's experience designing buildings and analyzing how they perform under environmental and geological hazards.

> *Iris takes Arup's technical expertise and harnesses it within the best of digital technology to provide our customers around the world a GPS for their resilience journey, guiding their investments in resilience measures to avoid costly detours and wrong turns on the way to their destination.*
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> - **Ibbi Almufti,** Arup, Risk and Resilience Practice Leader, San Francisco

Iris's risk engines provide greater accuracy than other platforms and reveal detailed insights into what is driving risk at each property and across the portfolio, paving the way to identify intervention opportunities. Simulations can model the impacts of engineered solutions and preparedness plans to help organizations prioritize the most cost-effective resilience strategies.

Moving to a digital delivery offers all the benefits of Arup's world-renowned in-depth analysis while also providing previously inaccessible levels of insight at the asset level, dynamically updated as portfolios and hazards change over time. Iris makes it possible to track the resilience of a diverse, global portfolio over multiple years as organizations acquire, lease, divest from, or retrofit properties. The platform also allows risks to be refreshed as climate scenarios evolve. Organizations can leverage Iris's premium features to demonstrate the impacts of their investments on improving their resilience and to quantify return on investment.

> *Iris has been a game-changer in our approach to climate resilience. The vulnerability and risk models in other platforms are not good enough. Iris is very much ahead of what we've seen. We especially value its ability to provide robust downtime estimates. It gives our stakeholders and shareholders confidence that we prioritize and invest in the right things to protect our people and our business.*
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> - **Confidential Client,** Executive Director of Climate Risk

Each client's resiliency journey is different. Data centers, distribution and manufacturing facilities, corporate headquarters prioritize eliminating costly downtime, whereas other owners place greater emphasis on reducing losses due to property damage. On the other hand, commercial and higher education clients tend to focus on increasing life safety for buildings with large populations. Iris's modern interface allows these insights to be constantly refreshed and is designed to guide and propel the resilience journey of diverse organizations around the world.

Iris's initial release empowers Arup's consultants to digitally deliver qualitative risk assessments for all types of hazards and quantitative risk assessments and mitigation strategies for seismic, wind, and flood hazards, all through a dynamic and interactive interface. Additional hazards such as wildfire and extreme heat are slated to be offered in the near future. Other areas of interest for property portfolios such as decarbonization are scheduled to be available in the second half of 2022, making Iris the only solution that tackles the dual challenges of climate change in the property sector by mitigating carbon emissions and adapting to physical climate risks.

For internal inquiries or to help an existing customer join the private beta, please email: ibrahim.almufti@arup.com.