

Commercial Property Resilience to Climate Change

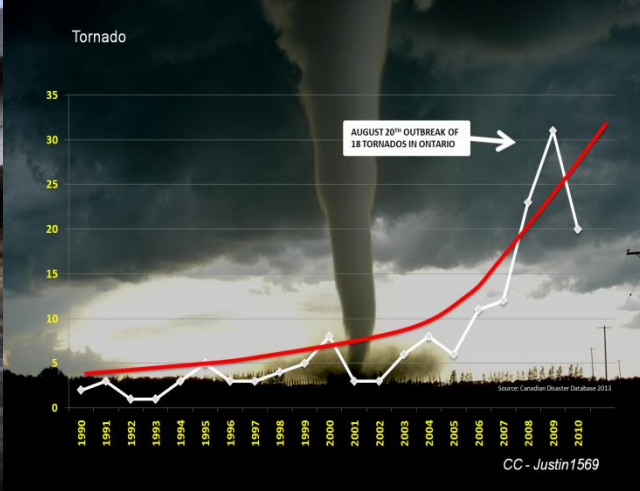
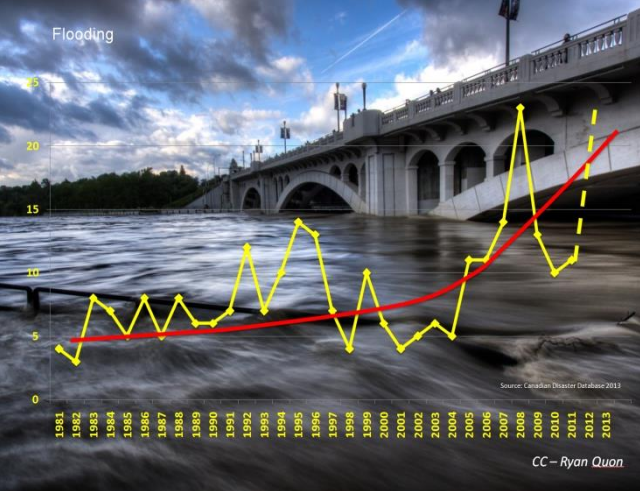
Sandford Fleming Forum, Toronto, 15 October 2015

A. Hay

Chair, BOMA Toronto Resilience Sub-Committee

How should commercial property
sector approach resilience?

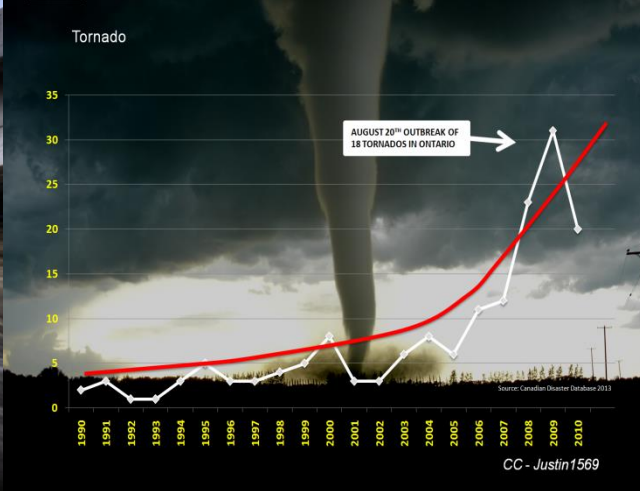
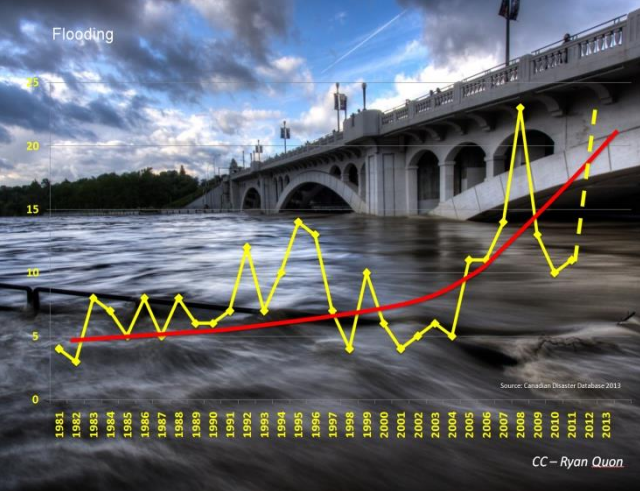
Issues
Requirement
Way Forward



Our world is changing

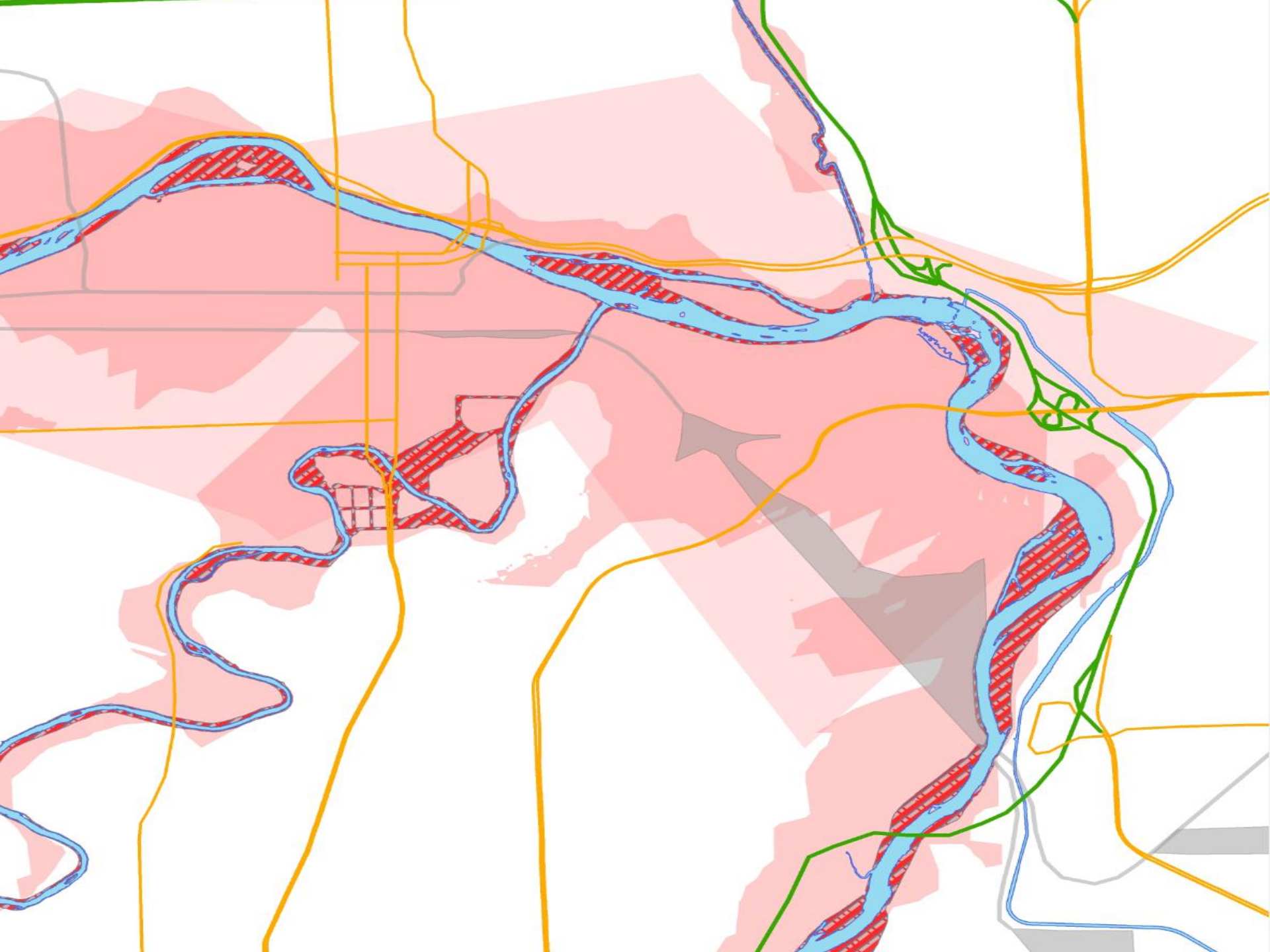


Climate Change
Concentration of Value
Market Tolerance

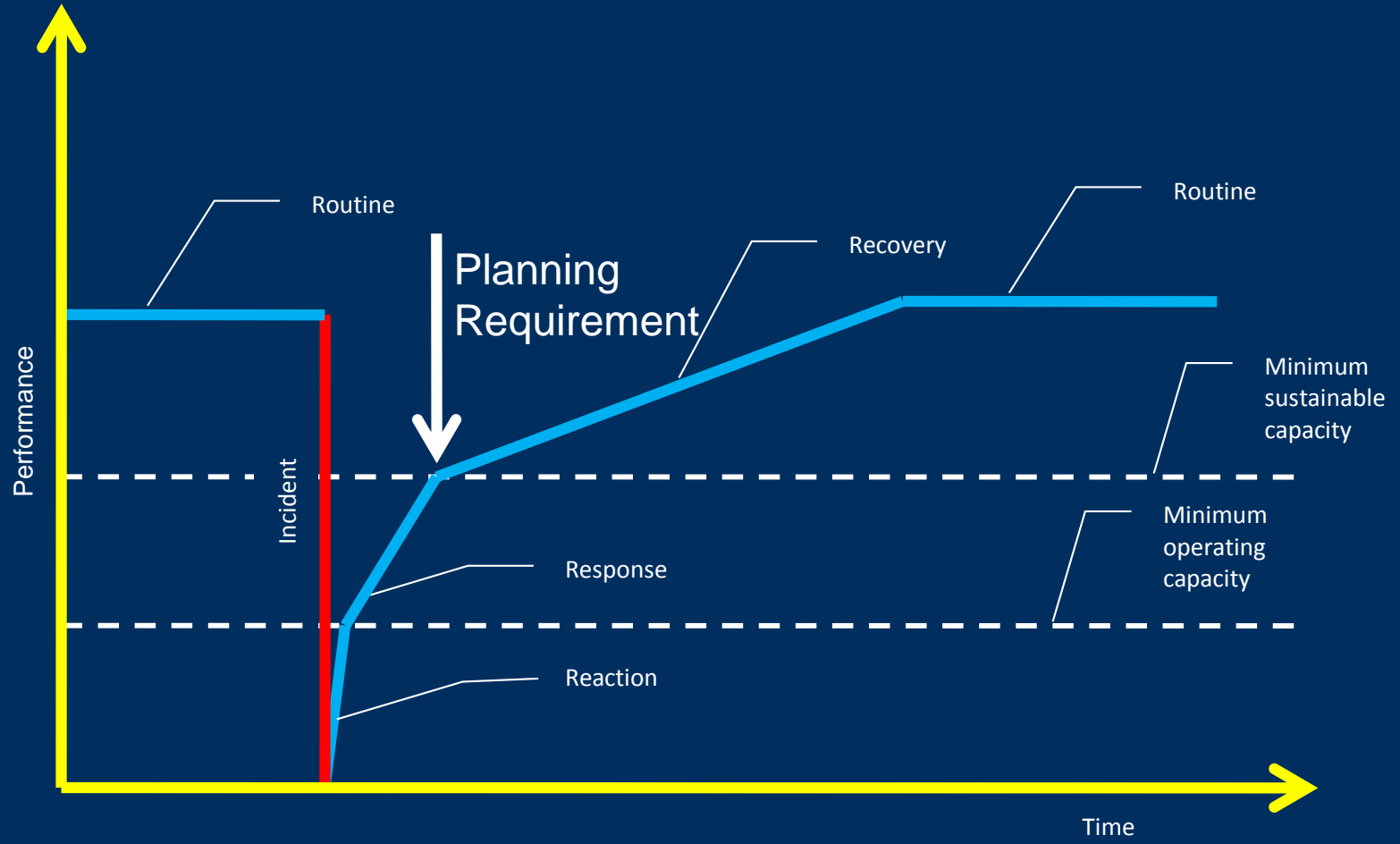


Manage the Changes





Sequence of an Incident



08:00



BOMA BEST Version 2

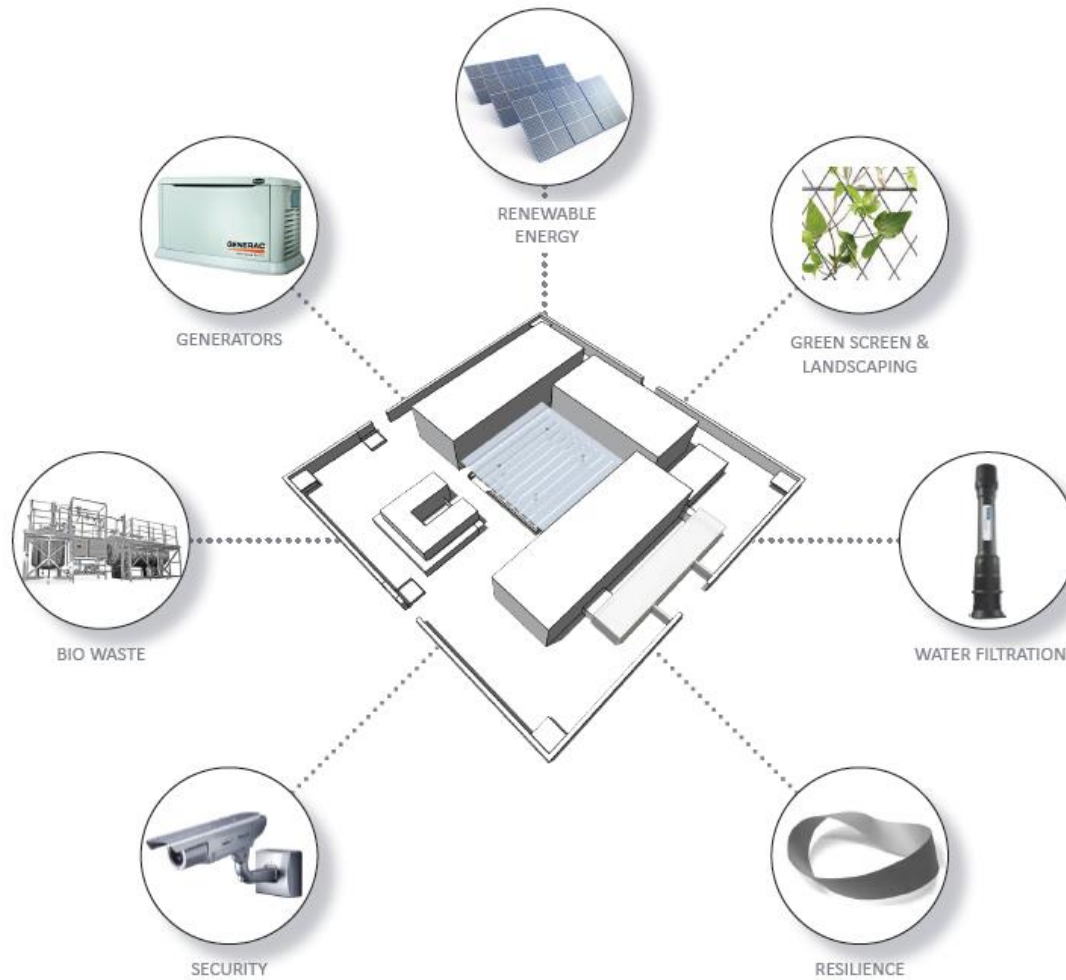
Large Offices

Revised
January 2014



The Voice of the Commercial Real Estate Industry in Canada

Demand & Dependency Management

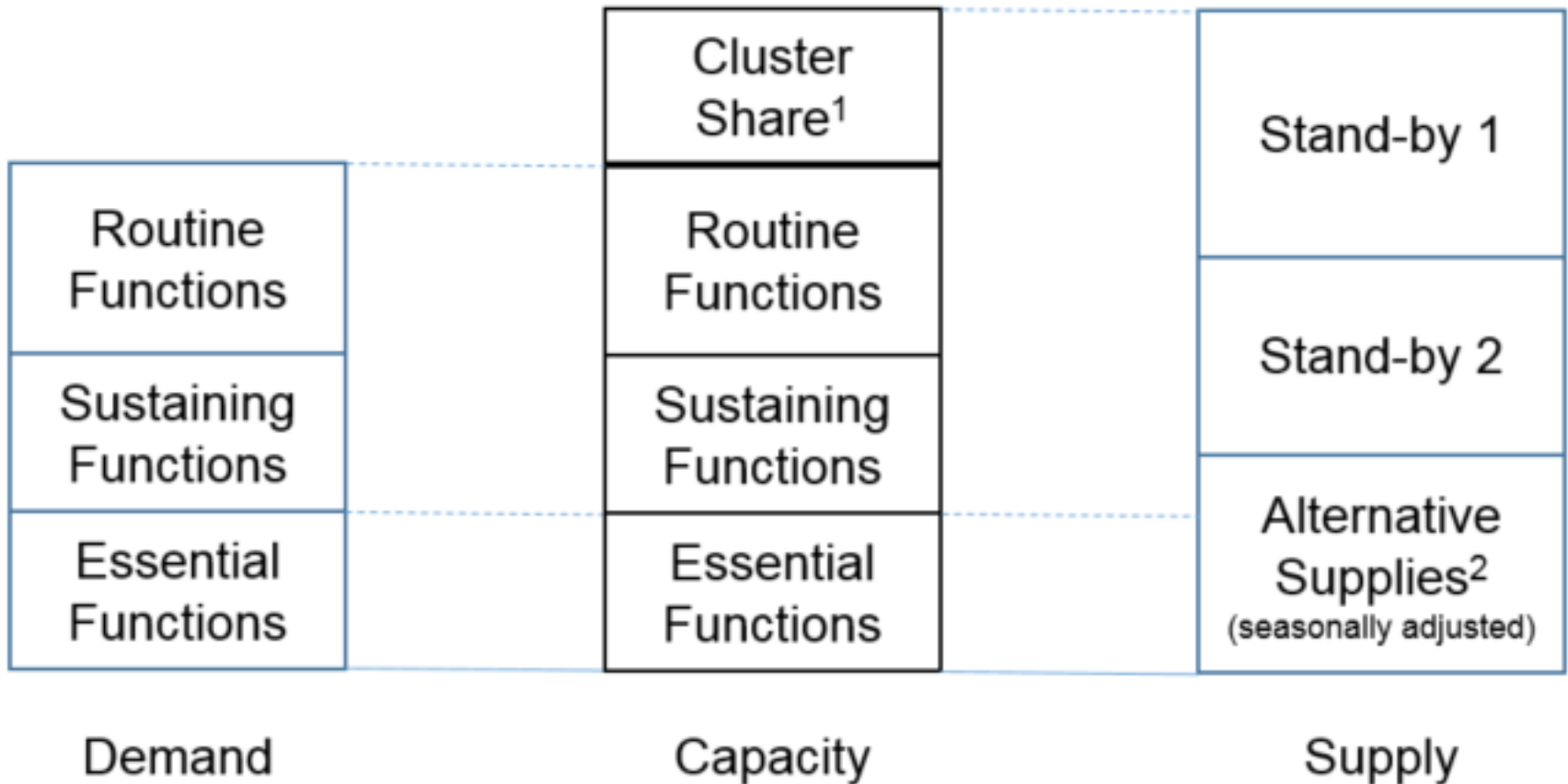


Having determined the essential functions that define success of the operation during and immediately following a catastrophic event, we analyse it in its Risk Context to determine what it means for the operation to be resilient. These resilience requirements are used to inform the selection of all the component parts of the site for the client's selected strategy. Each component will have multiple functions optimised by their arrangement. Throughout, all components and measures must enable and in no way impede the efficiency of the operation.

We build our design around the operation and layout, incorporating early observation and response in the general arrangement. From this, we overlay the security integration scheme to optimise the multiple roles of individual components, such as solar thermal water heating and espalier screens being incorporated into grenade protection, while all the time optimising the use of local materials and services for the construction and maintenance of the facility. Assuming component failure under high stress or shock, all components have multiple overlapping functions, so there will be diverse power sources and diverse water supply and storage also providing protection, response and recovery functions.

Through integrated design and resilience planning, we can deliver off-grid capable facilities with low environmental and logistic footprints, affording the necessary levels of security and protection at or less than the capital cost of the conventional equivalent. This integrated approach also means that the running costs will be significantly lower, all the while providing enhanced confidence of operational continuity through shocks and stresses.

Cluster with neighbours
Engage local community



1. Cluster Share = 20% x $\frac{\text{Cluster Total Demand}}{\text{Number of Cluster Members}}$

Community Focus
Community Identity
Balanced Infrastructure

Strategic Framework
Confidence in Leadership

crci |





Community Resilience

Operational
Resilience

‘It is that essential ability of an operation to respond to and absorb the effects of shocks and stresses and to **recover** as rapidly as possible normal capacity and efficiency.’

Operational Resilience

University of Toronto Centre for Resilience of Critical Infrastructure

Market expectation

Tenant perspective

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Large Offices

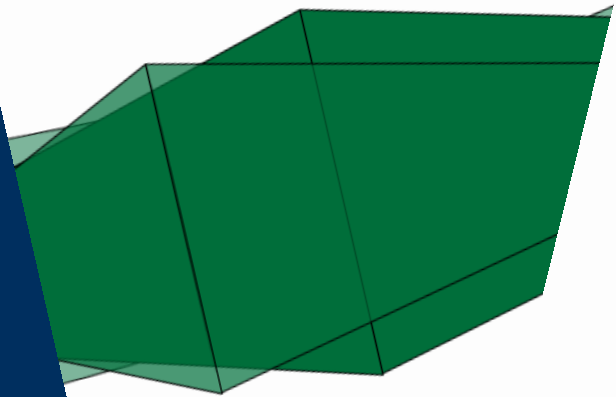


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A hybrid approach, perhaps ...

GOAL: De-Risk the future

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