

Incontri di
formazione



Resilienza urbana e
territoriale

1 aprile 2014 | APPROCCI E STRUMENTI DI RESILIENZA URBANA

GLI APPROCCI ALLA RESILIENZA URBANA E TERRITORIALE

Angela Colucci

Premessa

Quale resilienza

Resilienza ecosistemica

Approcci

Approcci | Resilienza e sostenibilità

Approcci | Resilienza e Rischi

Approcci | Resilienza e Adattamento

Confronti tra approcci | qualche conclusione

Pratiche

Dagli Approcci alla Pratiche | Resilienza e Rischi

Dagli Approcci alla Pratiche | Resilienza e Adattamento [TT]

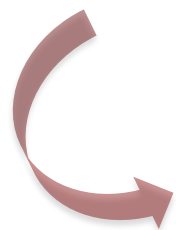
Dagli Approcci alla Pratiche | Resilienza e Adattamento [CC]

Confronti tra pratiche | prime note

Riferimenti

Premessa

Resilienza



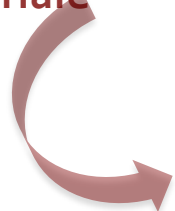
**Resilienza
ecologica/ecosistemica**

[ampio dibattito teorico su
definizioni e concetto di
resilienza]

[Resilience recovery,
transition,
adaptation,
evolutionary]

"definizione generale"
Capace di accogliere i differenti approcci

**Quale sguardo:
pianificazione/progettazione
urbana/territoriale**



Sistemi urbani/regionali

[definizione di "urbano"]

**Approccio complesso [sistemi
territoriali complessi]**

Premessa

(2002>2006)

2007 >>2012

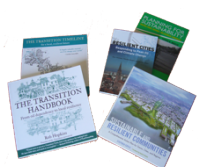
>> 2012/13

[letteratura | confronti]

[pratiche | confronti]



Resilienza e Sostenibilità



Resilienza e adattamento



Resilienza e Rischio

<p>Definizione di resilienza</p> <p>Concetto di resilienza</p> <p>Strategie di resilienza</p> <p>Modelli urbani / territorio</p>	<p>Principi condivisi</p> <ul style="list-style-type: none"> Diversità creativa e ridondanza Riconoscimento delle variabili lente Adattabilità Flessibilità e innovazione Conoscenza e comunità Interconnession e tra scale spaziali e temporali Interdipendenza e modularità Solidi circuiti di feedback
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<p>Resilience Alliance</p> <p>I.C.L.E.I</p> <p>Resilient Cities series</p> <p>CENTER FOR RESILIENT CITIES</p> <p>Good Living Well Grounded</p> <p>Transition Network.org</p> <p>UNISDR</p> <p>The United Nations Office for Disaster Risk Reduction</p>	<p>CC</p> <p>AdD</p> <p>TT</p> <p>RR</p>
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Temi

[resiliente per cosa???



Processi

+ [proposte/programmi/progetti]

Quali dimensioni [spazio]

Quali principi di Resilienza

Quali soluzioni e iniziative/azioni

Quale resilienza

in **ingegneria**, la resilienza è la capacità di un materiale di resistere a forze impulsive senza spezzarsi e ripristinando lo stato iniziale

in **informatica**, la resilienza è la capacità di un sistema di adattarsi alle condizioni d'uso e di resistere all'usura in modo da garantire la disponibilità dei servizi erogati (disaster recovery) o capacità di adattamento attivo e flessibilità necessaria per adottare nuovi comportamenti una volta che si è appurato che i precedenti non funzionano

in **psicologia**, la resilienza viene vista come la capacità dell'uomo di affrontare le avversità della vita, di superarle e di uscirne rinforzato e addirittura trasformato positivamente

Quale resilienza

engineering resilience

La resilienza dei materiali è la proprietà di tornare alla forma precedente dopo una deformazione

Holling and Gunderson 2002



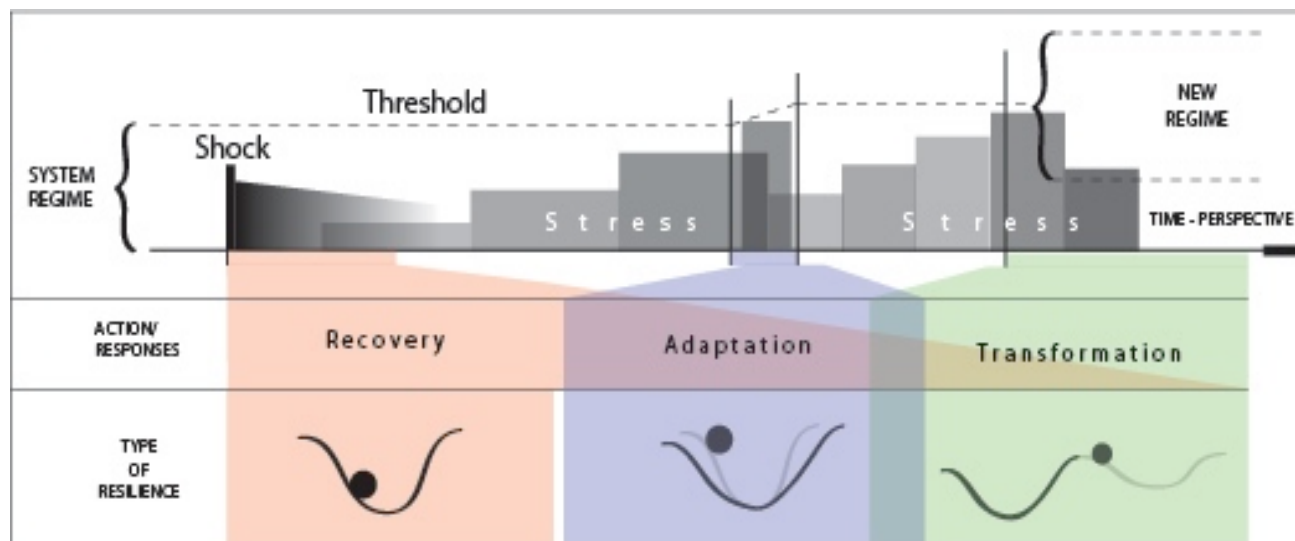
Engineering resilience concept

Resilienza ecosistemica

la **resilienza ecosistemica** si basa sui concetti di **persistenza**, **cambiamento/impredittibilità**, **adattabilità** e **variabilità**, enfatizzando le condizioni lontane da ogni equilibrio.

La resilienza è quella **proprietà** dei sistemi complessi di reagire ai fenomeni di stress, attivando strategie di risposta e di adattamento al fine di ripristinare i meccanismi di funzionamento. I sistemi resilienti, a fronte di uno stress, reagiscono **rinnovandosi** ma mantenendo **la funzionalità e la riconoscibilità** dei sistemi stessi" (Holling C.S., Gunderson Lance, 2002, Holling 1996).

La resilienza non implica quindi il ripristino ad uno stato iniziale, ma il ripristino della funzionalità attraverso il mutamento e l'adattamento.



Resilienza ecosistemica

- Diversità (biodiversità/diversità creativa)
- Ridondanza (variabilità ecologica)
- Cicli di adattamento (multipli stati di equilibrio/Panarchia)
- Meccanismi di feedback (informazione) e memoria ecosistemica
- Interazione tra scale spaziali (“gerarchie” /modularità) e temporali (attivazione di risposte con tempi differenti)

- Diversità creativa e ridondanza
- Riconoscimento delle variabili lente
- Adattabilità
- Flessibilità e innovazione
- Conoscenza e comunità
- Interconnessione tra scale spaziali e temporali
- Interdipendenza e modularità
- Solidi circuiti di feedback



Resilient cities

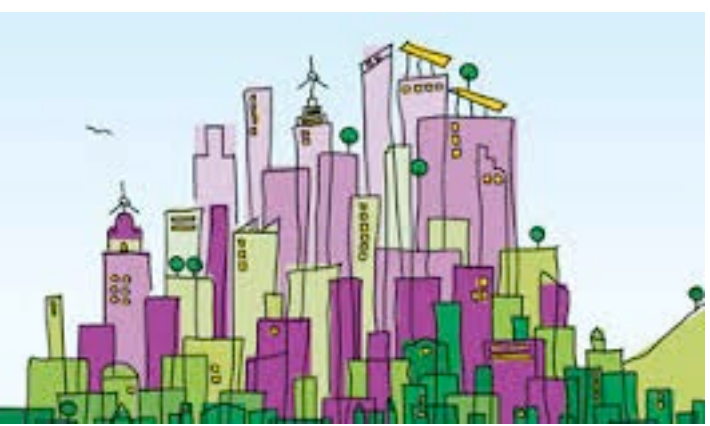
"A Resilient City is one that has developed capacities to help absorb future shocks and stresses to its social, economic, and technical systems and infrastructures so as to still be able to maintain essentially the same functions, structures, systems, and identity."

"una città resiliente è quella che ha sviluppato le capacità per assorbire gli shocks futuri e gli stress alle componenti sociali, economiche, dei sistemi tecnologici e infrastrutturali attraverso processi di "evoluzione/adattamento" mantenendo riconoscibili le sue funzioni, strutture e identità"

ResilientCity.org

Resilienza ecosistemica

Resilient cities



**CENTER FOR
RESILIENT
CITIES**

Good Living Well Grounded

Resilienza e
sostenibilità

Resilienza e
adattamento



Resilienza e rischi territoriali

Angela Colucci
Le città resilienti: approcci
e strategie

<http://www.jeanmonnet-pv.it>



Research framework

(2002>2006)

2007 >>2012

>> 2012/13

[letteratura | confronti]

[pratiche | confronti]



Resilienza e Sostenibilità



Resilienza e adattamento



Resilienza e Rischio

Definizione di resilienza

Concetto di resilienza

Strategie di resilienza

Modelli urbani / territorio

Principi condivisi

- Diversità creativa e ridondanza
- Riconoscimento delle variabili lente
- Adattabilità
- Flessibilità e innovazione
- Conoscenza e comunità
- Interconnession e tra scale spaziali e temporali
- Interdipendenza e modularità
- Solidi circuiti di feedback

Resilience Alliance

I.C.L.E.I. Resilient Cities series

CENTER FOR RESILIENT CITIES

Good Living Well Grounded

Transition Network.org

UNISDR

The United Nations Office for Disaster Risk Reduction

CC

AdD

TT

RR



Temi
[resiliente per cosa???

Processi
+
[proposte/programmi/progetti]

Quali dimensioni
[spazio]

Quali principi di Resilienza

Quali soluzioni e iniziative/azioni

Approcci | Resilienza e sostenibilità

L'ottimizzazione non è la soluzione o, meglio, non deve essere l'unica soluzione: non bisogna considerare l'ottimizzazione dei meccanismi di funzionamento come la strategia con cui i sistemi complessi operano a lungo



...a basis for sustaina

'Resilience, the capacity to lead to a continued existence by Incorporating change' (Folke, Colding and Berkes 2003, p.352)

Diversità e stabilità

Organizzazione ecosistemica

Cicli di adattamento

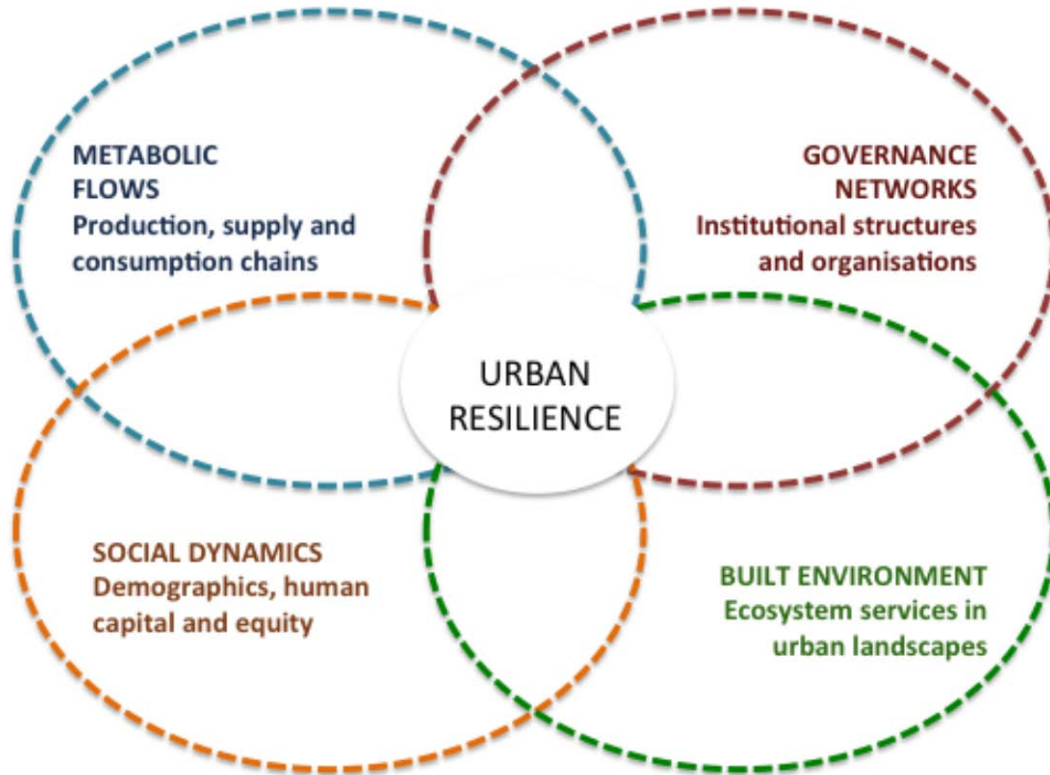
Life is full of surprises | strategie di resilienza

Imparare dall'incertezza e dal cambiamento

Nutrire la diversità per il rinnovo e la riorganizzazione

Combinare differenti tipi e sistemi di conoscenza e creare opportunità di auto-organizzazione

Approcci | Resilienza e sostenibilità



Esperienza e casi

Cause Méjan, France
Coral reefs of the Caribbean
Dry Spiny Forests, Southern Madagascar
Everglades, Florida, USA
Gorongosa National Park, Mozambique
Goulburn-Broken Catchment, Australia
Kristianstads Vattenrike, Sweden
Mae Ping River Basin, Thailand
Maine Fisheries, USA
Malinau Region, Borneo
Northern Highland Lakes District, Wisconsin, USA
Phoenix, Arizona, USA
Rangelands of New South Wales, Australia
South-East Lowveld, Zimbabwe
Western Australian Wheatbelt, Australia

> Database CSIRIO (aus)

Approcci | Resilienza e Rischi

Per resilienza ecosistemica si intende **la capacità e l'abilità di uscire**, a seguito di un evento calamitoso, da una fase di stallo, in **una condizione non necessariamente uguale a quella iniziale pre-evento**.

La capacità di un territorio di essere resiliente consiste in gran parte dall'organizzazione e dalle relazioni esistenti prima dell'evento, quanto più il sistema sarà flessibile tanto più sarà rapida la ripresa alle normali attività in un'ottica di miglioramento e consapevolezza.

Diffusion and diversity, the Rapid responses proprieties, the Redundance circuit, the Storage capacity and the scale / hierachy connection (time and space).

Approcci | Resilienza e Rischi

Un sistema, in generale, per essere resiliente dovrebbe tendere ad essere:

- **Ridondante** – con un numero di componenti funzionalmente simili in modo che l'intero sistema non collassi quando un singolo componente si guasta;
- **Diversificato** – con un numero di componenti con funzionalità diverse in modo da proteggere il sistema contro diverse pericolosità;
- **Efficiente** – con una larga disponibilità di energia prodotta da un sistema dinamico;
- **Forte** – con la capacità di resistere ad eventi/attacchi esterni di diverso genere;
- **Indipendente** – con diverse componenti dei diversi sistemi connesse, in modo da supportarsi vicendevolmente;
- **Adattabile** – con la capacità di imparare dalle esperienze e la necessaria flessibilità per cambiare;
- **Collaborativo** – con multiple opportunità ed incentivi che consentano la più ampia partecipazione degli attori coinvolti.

Approcci | Resilienza e Adattamento

Transition cities

Climate change and peak oil



European Environment Agency

Topics Data and maps Indicators Publications Multimedia

You are here: Home / Press room / News / Europe's future depends on cities resilient to climate change

Europe's future depends on cities resilient to climate change

Published : May 14, 2012 Last modified : May 14, 2012 11:05 AM

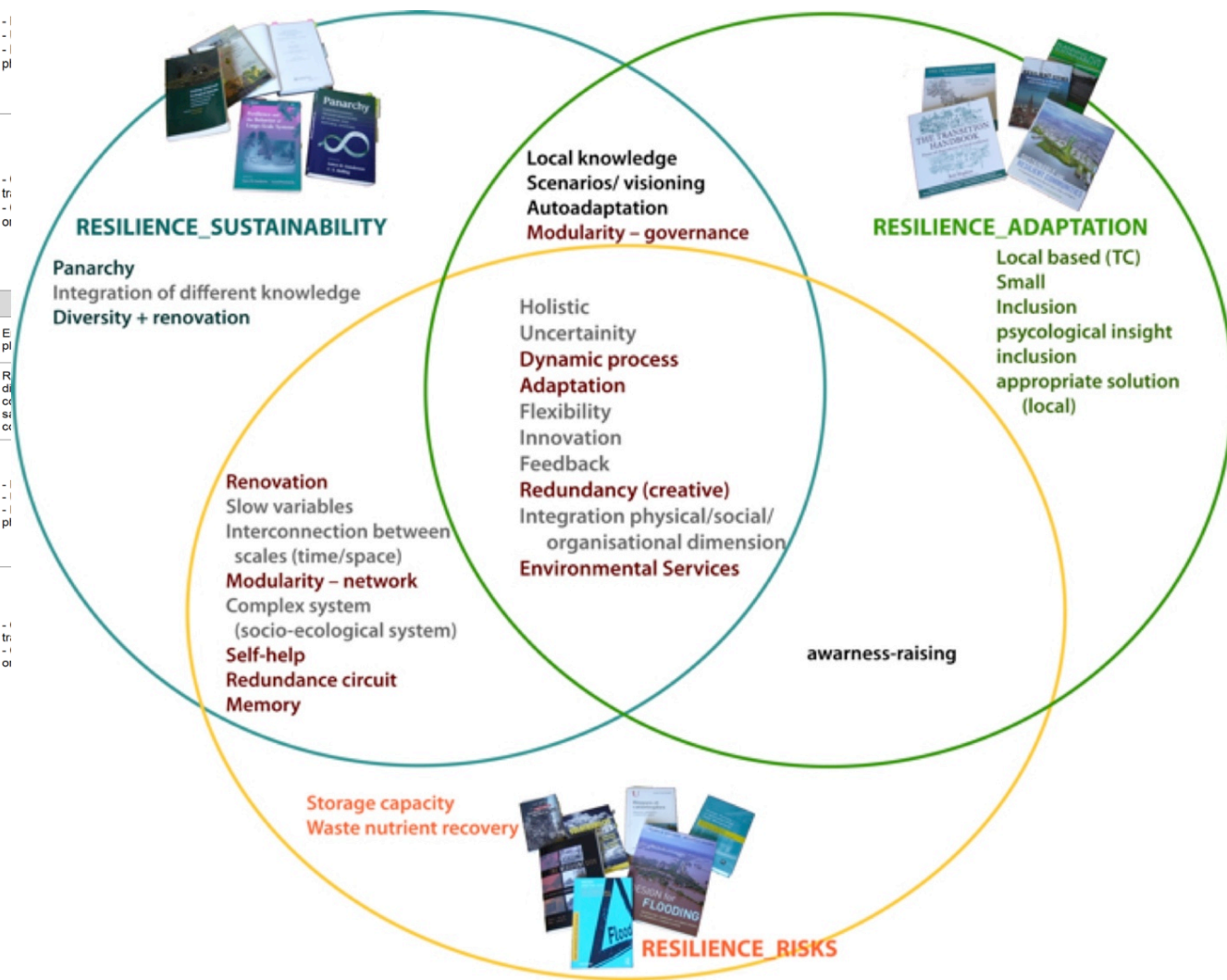
Topics: Climate change Environmental scenarios Urban environment

Around three quarters of Europeans live in cities. Most of Europe's wealth is generated in cities, and urban areas are particularly at risk due to climate change. Europe should seize the opportunity of improving quality of life while adapting to climate change in cities, according to a report from the European Environment Agency (EEA). The report also warns that delaying adaptation will be much more costly in the long-term.



Confronti tra approcci | qualche conclusione

	Resilience and sustainability	Resilience and adaptation	Resilience and risks
Disciplinary backgrounds	Natural sciences, biology, ecology, economy and social and political sciences	Planning, architecture, natural science, sociology	Engineering, Building architecture, planning, social science
Resilience definition	R. as the capacity to lead to a continued existence by incorporating change'	No definition of R.	R. as the capacity and ability, after a disaster, to emerge from stalemate in a condition that is not necessarily the same as the initial pre-existing condition
Research and experiences Focus (scales and places)	- Theoretical / theoretical modelling - Development of local communities and regional development - Management of natural resources (linked to development of local community / regional development)	- Models / strategies applied to city / urban and metropolitan - Development of neighbourhoods and local communities	- I - I - I pl
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Confronti tra approcci | qualche conclusione

Principi/aspetti condivisi (e innovativi)

- Rafforzamento delle intercennessioni tra aspetti sociali, ecosistemiche/ambientali e di governance (o organizzativi);
- Rilevanza della comunità locale e degli aspetti sociali
- Servizi ecosistemici e flussi dei metabolismi urbani
- Forti innovazione nei PROCESSI
- Rilevanza delle dinamiche di processo (flessibilità...)

(diversità creativa) e ridondanza

Riconoscimento delle variabili lente

Adattamento, flessibilità e innovazione

Conoscenza e comunità (eco-sociali)

Interconnessioni tra variabili spaziali e temporali

Solide catene di feedback



Confronti tra approcci | qualche conclusione

Capacità di resilienza di
costruire VISIONI positive
strategiche

Aspetti complessi

Innovazione di strumenti e processi di
governance

Processi VS strumenti/metodi

Scale spaziali e temporali

Differenti temporalità
(Recovery/adaptation/transition/evolution)

Equità
Relazioni tra sostenibilità ambientale e equità
sociale

Confronti tra pratiche | prime note

“iniezioni di resielinza”

Complessità e trasversalità
[ecosistemi/sociali]

modularità
[sistemi/sub-sistemi]
[scale spaziali]
[temporalità]

Dinamici/flessibilità
[incorporare i cambiamenti]
[feedback]
[riconoscimento delle
variabili lente]

**Coinvolgimento/responsabi
lizzazione delle comunità
locali**

**Diversità creativa e
ridondanza**

CC

AdD

TT

RR



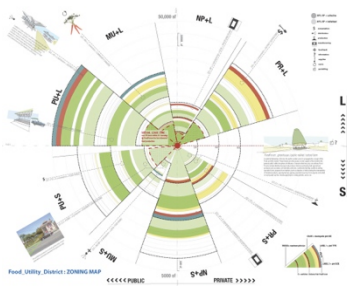
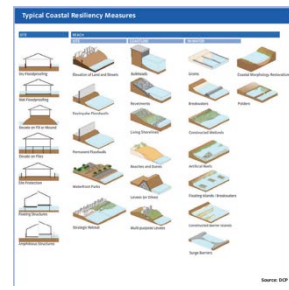
Confronti tra pratiche | prime note

CC



“punti di opportunità e di rischio”

AdD



Visione strategica
[&diffusione]

TT

Food growing groups
Most Transition groups start with growing food, whether on an allotment, community garden or garden share scheme, as well as by setting up new food-related enterprises.

Community-owned bakeries
Every community needs (or needs?) one, a vital piece of the local infrastructure. Sadly no longer common on our high streets, often replaced by out-of-town supermarkets.

Transition Street projects
Transition Street shows how change can happen on a street by street basis, reducing household costs and energy use while also rebuilding a sense of community.

Community-owned enterprises
Community-owned enterprises: one of the ways we can keep money local while renovating and creating employment. Oh, and really good beer.

Building community relationships
Transition groups pay attention to how they work together as groups, to supporting each other and avoiding the burnout which can often happen with volunteer activities.

Community-owned energy
Renewable energy offers huge potential for communities to create cleaner electricity for homes, schools and businesses - generating income and providing a safer place for investments.



Continuità / innovazione
[nuovo termine]

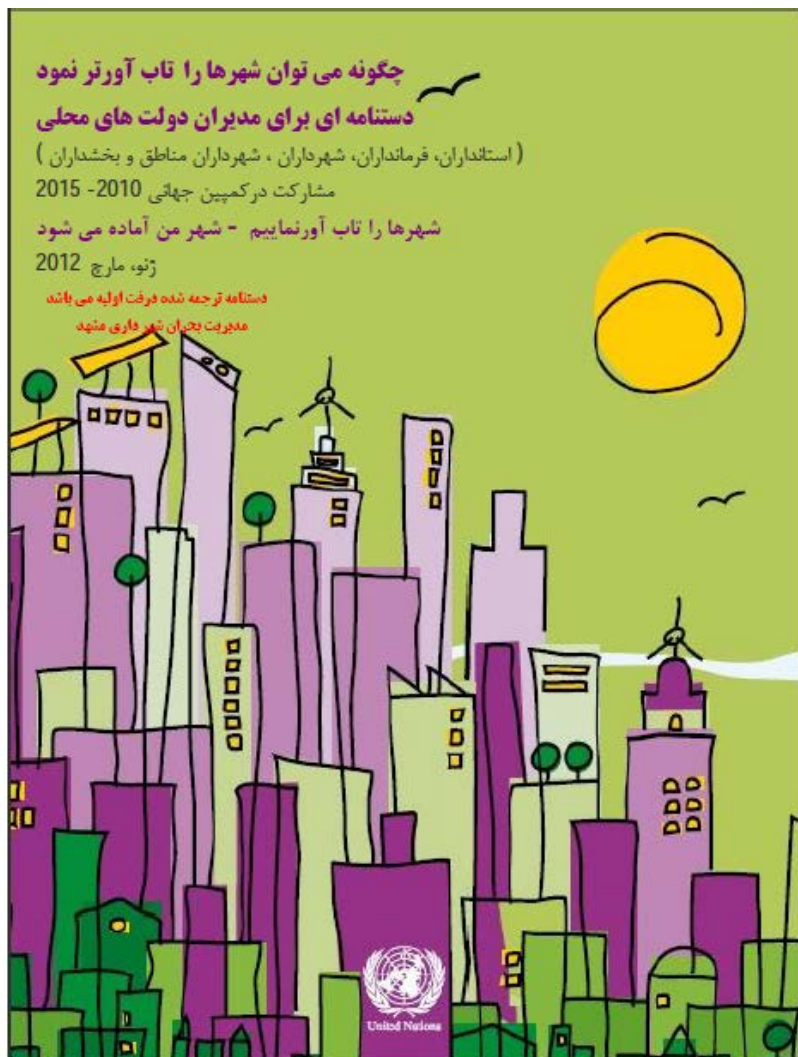
RR

Pratiche bottom up e locali
[fragilità di esperienze]

Dagli Approcci alle Pratiche | Resilienza e Rischi



Dagli Approcci alla Pratiche | Resilienza e Rischi



TDDMO Plan for Tehran Areas – Sasakawa Report

2013

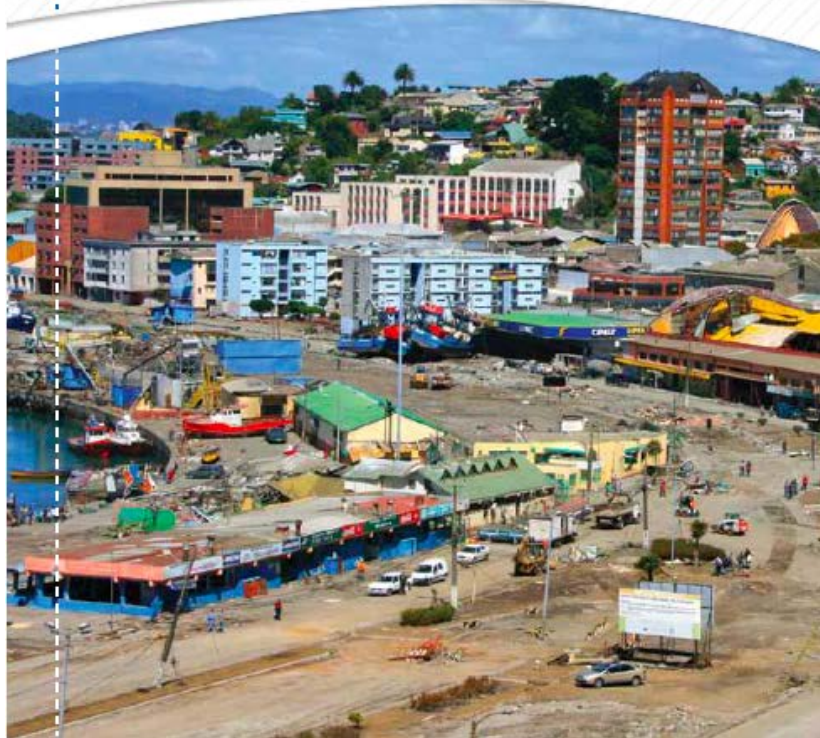


* Amaken is a Farsi plural word with a general concept for city buildings inclusive of all types of premises, living residentials, working offices and other public facilities.

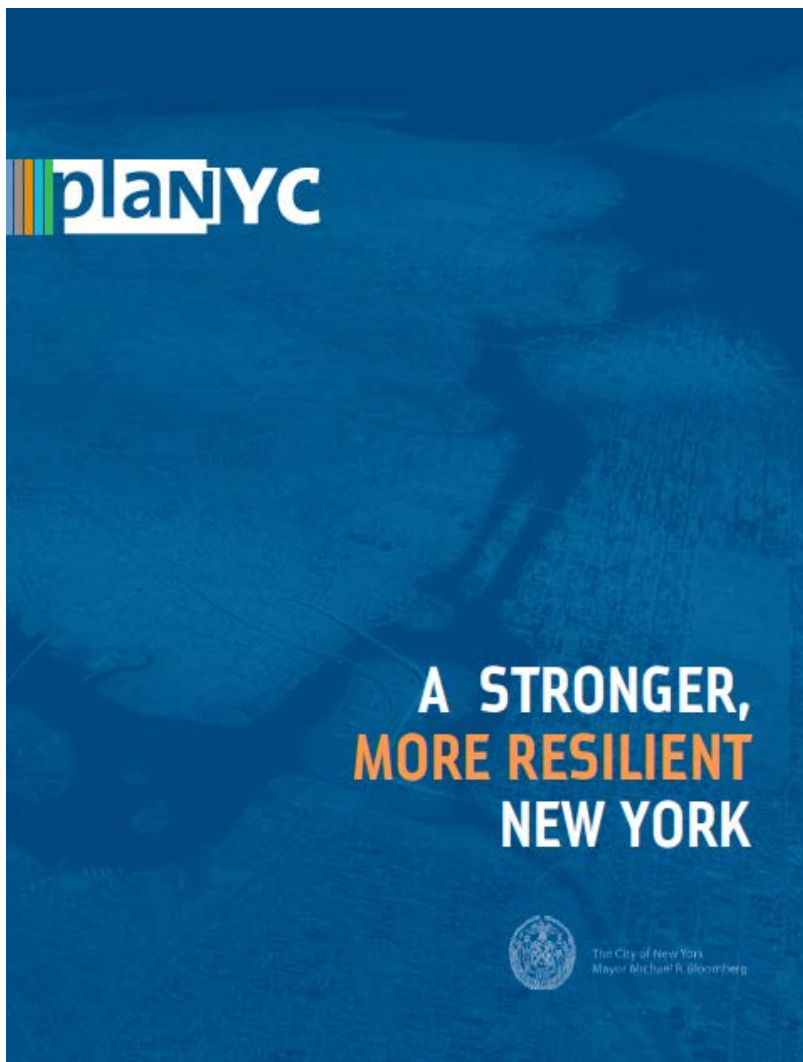
Dagli Approcci alla Pratiche | Resilienza e Rischi



GUÍA PARTICIPATIVA DE
**ORIENTACIONES DE RESPUESTA FRENTE
A EMERGENCIAS DE TERREMOTO-TSUNAMI**
A PARTIR DE LA EXPERIENCIA DE TALCAHUANO, CHILE



Dagli Approcci alla Pratiche | Resilienza e Rischi



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Dagli Approcci alla Pratiche | Resilienza e Rischi

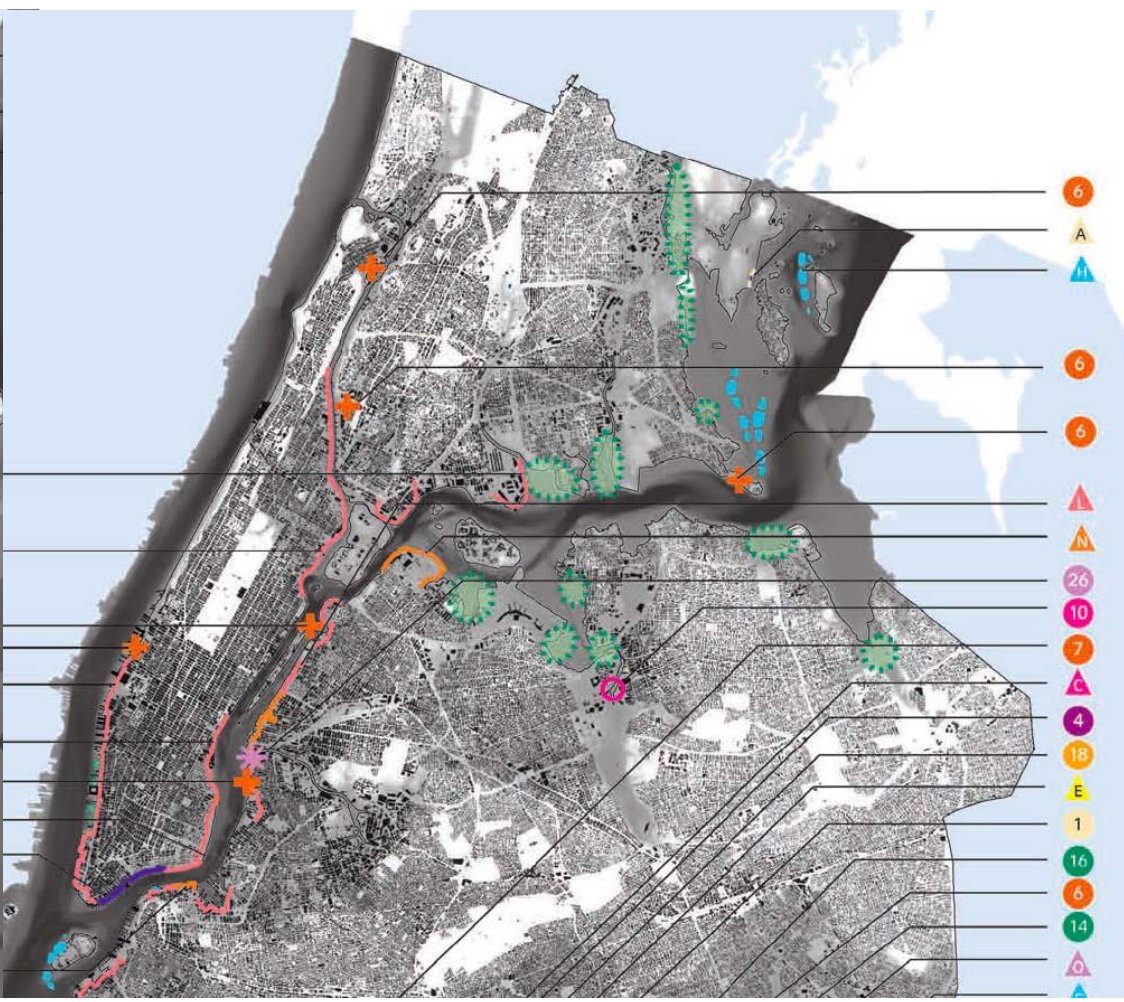
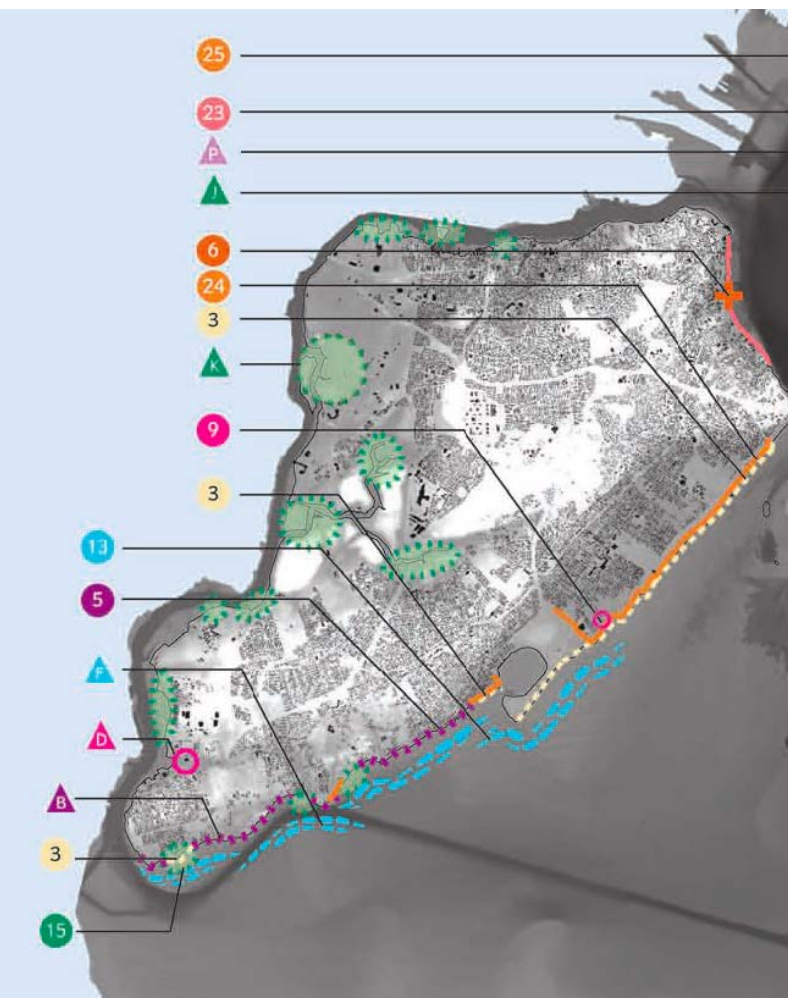
Protect Against Storm Surge

- Integrated Flood Protection System**
 - 19 Hunts Point, Bronx
 - 20 East Harlem, Manhattan
 - 21 Lower Manhattan / Lower East Side
 - 22 Hospital Row, Manhattan
 - 23 Red Hook, Brooklyn
 - L Brooklyn-Queens Waterfront
 - M West Midtown, Manhattan
- Floodwalls / Levees**
 - 24 East Shore, Staten Island
 - 25 Farragut Substation, Brooklyn
 - N Astoria Generating Station, Queens
- Local Storm Surge Barrier**
 - 26 Newtown Creek
 - O Rockaway Inlet
 - P Gowanus Canal, Brooklyn
- Multi-purpose Levee**
 - Q Lower Manhattan

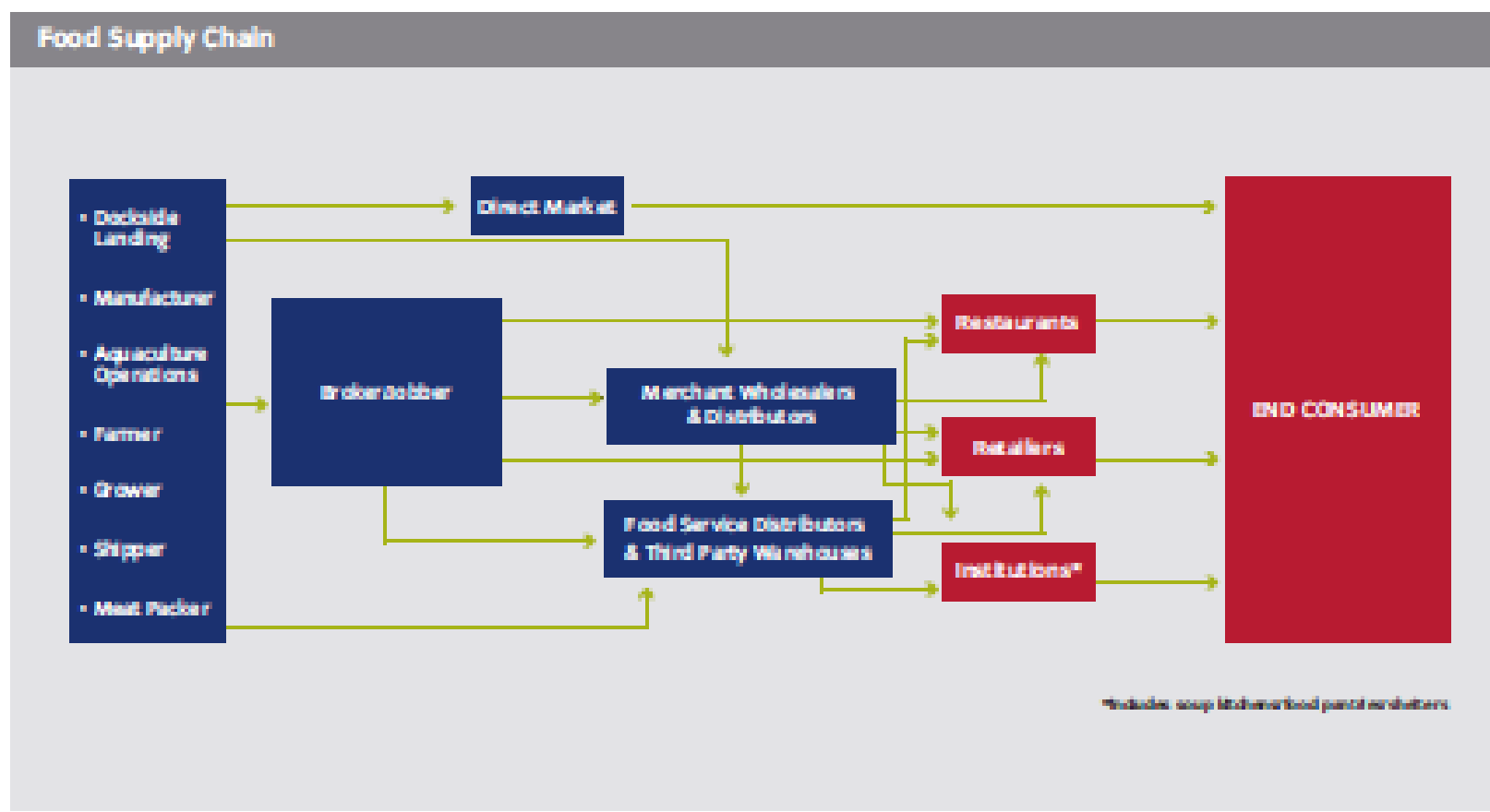
Increase Coastal Edge Elevations

- Beach Nourishment**
 - 1 Coney Island, Brooklyn
 - 2 Rockaway Peninsula, Queens
 - 3 East and South Shores, Staten Island
 - A Orchard Beach, Bronx
- Armor Stone (Revetments)**
 - 4 Coney Island Creek, Brooklyn
 - 5 Annadale, Staten Island
 - B South Shore, Staten Island
- Bulkheads**
 - 6 Citywide Program
 - 7 Belt Parkway, Brooklyn
 - 8 Beach Channel Drive, Queens
- Tide Gates / Drainage Devices**
 - 9 Oakwood Beach, Staten Island
 - 10 Flushing Meadows, Queens
 - C Coney Island Creek, Brooklyn
 - D Mill Creek, Staten Island
- Minimize Upland Wave Zones**
 - Dunes**
 - 11 Rockaway Peninsula, Queens
 - 12 Breezy Point, Queens
 - A Coney Island, Brooklyn
 - Offshore Breakwaters**
 - 13 Great Kills Harbor, Staten Island
 - B South Shore, Staten Island
 - 6 Rockaway Extension
 - A City Island, Bronx
 - Wetlands, Living Shorelines and Reefs**
 - 14 Howard Beach, Queens
 - 15 Tottenville, Staten Island
 - 16 Plumb Beach, Brooklyn
 - 17 Brant Point, Queens
 - J Jamaica Bay
 - J Bay Ridge Flats
 - K Saw Mill Creek, Staten Island
 - Groins**
 - 18 Sea Gate, Brooklyn

Dagli Approcci alla Pratiche | Resilienza e Rischi

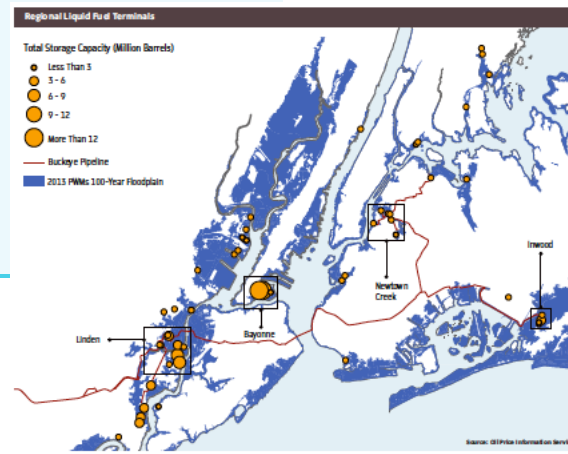
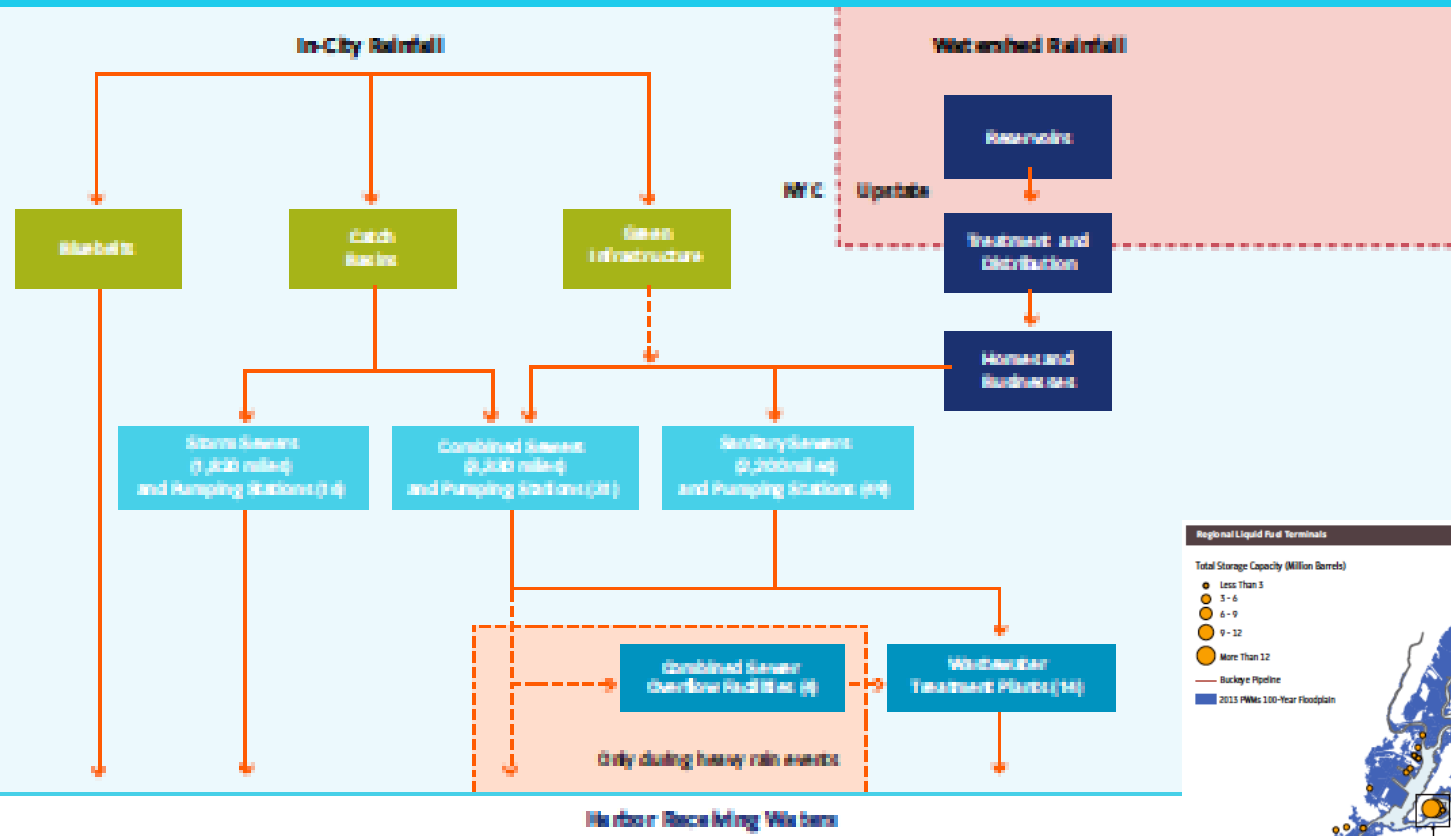


Dagli Approcci alla Pratiche | Resilienza e Rischi



Dagli Approcci alla Pratiche | Resilienza e Rischi

The Water and Wastewater System In New York City



Dagli Approcci alla Pratiche | Resilienza e Rischi

Typical Coastal Resiliency Measures



Designing for Flood Risk: Urban Design Principles

FEMA and Building Code standards for flood-resistant construction require new or substantially improved buildings in flood zones to be flood proofed or elevated above projected flood levels. However, elevating buildings more than a few feet above the sidewalk can have negative effects on streetscape, building access, public safety, ground floor activity, architectural quality, and neighborhood character. DCP has worked with representatives of the local design community to develop a set of urban design principles to guide the design of flood-resilient buildings.



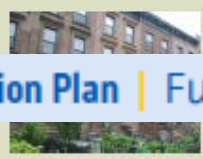
VISUAL CONNECTIVITY
Having the windows and front door of a building face the public street can create a sense of security and comfort for pedestrians. These architectural elements also provide visual interest, which in turn promotes a walkable neighborhood. Elevating the first floor of a building can limit this visual connectivity. In residential neighborhoods, porches, stoops, and generous access elements can be designed in order to help to mitigate this disconnection. On commercial streets, this visual connectivity is important to the viability of local retail. A common best practice would be to dry flood-proof the commercial space so that it can be closer to sidewalk level and therefore maximize visual and physical connectivity.



FACADE ARTICULATION
Buildings often contribute to the character of a place by offering human-scale architectural elements, particularly on first floors. Elevated buildings with crawl spaces, parking, or storage can create blank walls at grade. Setting a building back from the property line slightly and using landscaping and/or other creative design solutions could help to buffer these voids in an active streetscape. If ground-level parking is the only feasible option, then garage doors and curb cuts should be designed to minimize their impact on the pedestrian realm.



INVITING ACCESS
Elevated buildings pose challenges for a accessibility. Ramps can be difficult to accommodate, particularly on smaller lots. Even smaller buildings that are not required to meet Americans with Disabilities Act (ADA) standards have the challenge of integrating longer runs of stairs into building or landscape design. Introducing a 90-degree turn or landing, and paying careful attention to overall stair design could make a long run of stairs easier to climb and appear more inviting for pedestrians.



NEIGHBORHOOD CHARACTER
Some neighborhoods exhibit a relative uniformity of building form. Elevating buildings will necessarily involve us to create buildings that do not fit in, in some cases.

Comprehensive Coastal Protection Plan | Full-Build Recommendations

Adapting to higher standards of flood resistance is both a challenge and an opportunity for architects to achieve higher standards of design. The opportunity exists to innovate and produce buildings that contribute to the public realm and have a positive long-term effect on those neighborhoods recovering from Sandy.

Source: DCP

Dagli Approcci alla Pratiche | Resilienza e Rischi



THINKALEX RESILIENCY PLAN

A COMPREHENSIVE MASTER PLAN FOR THE CITY OF ALEXANDRIA, LOUISIANA

Final Draft, October, 2013
An initiative of the City of Alexandria

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Methodology & Research
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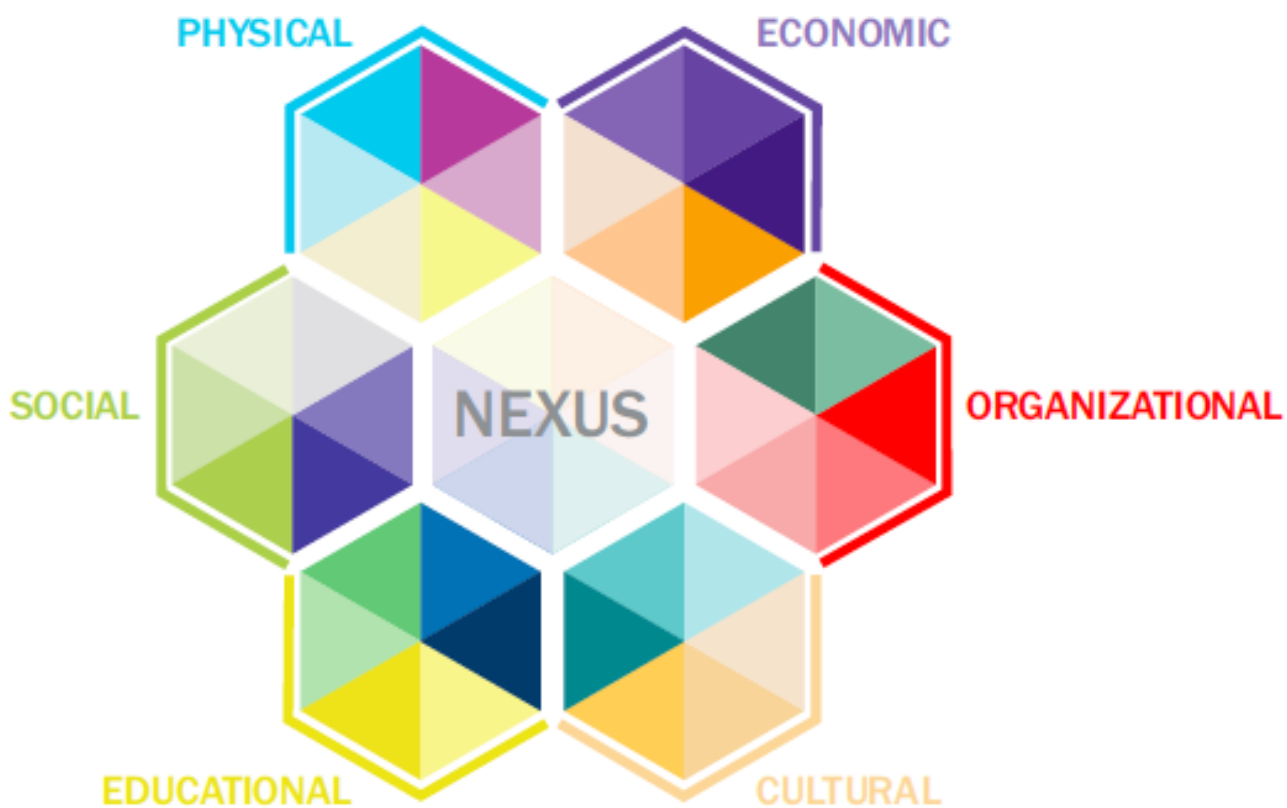
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APPENDIX

Dagli Approcci alla Pratiche | Resilienza e Rischi



The THINKAlex process was organized by the Nexus framework

Dagli Approcci alla Pratiche | Resilienza e Rischi

THINKAlex Resiliency Plan: Housing
Horseshow Drive at Sterk Road

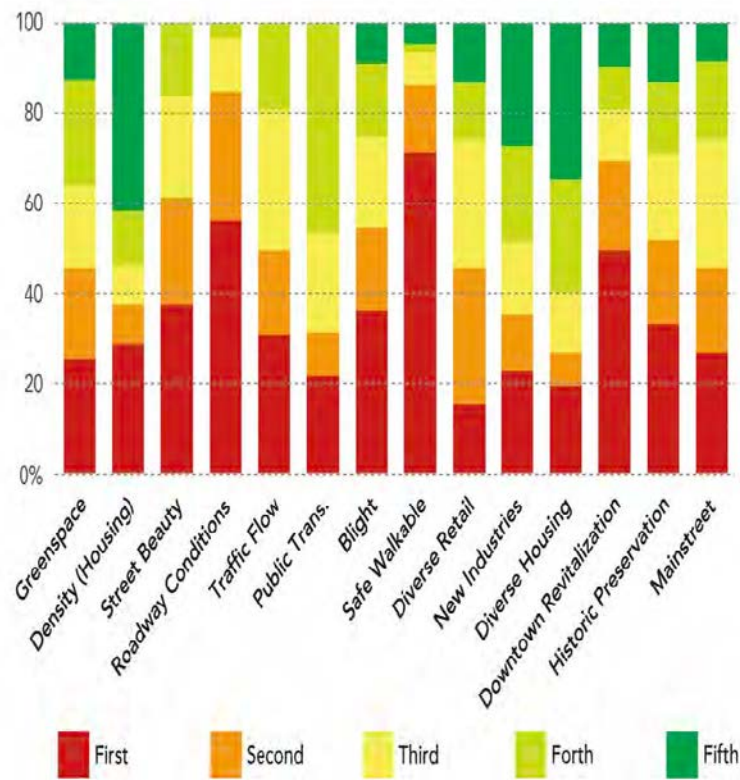


Meeting | Draft Housing Principles Typology Exercise



THINKAlex Resiliency Planning Online Survey Results Ranked Priorities

Walkable communities, roadway conditions, downtown revitalization, eliminating blight, are listed as first priorities among respondents. Density and diversity in housing ranked fifth (last) priority among respondents.



THINKAlex non | Priort Maheta



Meeting | Transportation Investment Exercise

Dagli Approcci alla Pratiche | Resilienza e Adattamento [TT]



Transition Network supports community-led responses to climate change and shrinking supplies of cheap energy, building resilience and happiness.

Transition Projects Map



Dagli Approcci alla Pratiche | Resilienza e Adattamento [TT]

Belgium	BE001	Ath	2010 may	
Denmark	DK001	Skanderborg	2010 mar	
France	FR001	Aix-en-Provence		
	FR002	Ardèche		
	FR003	Angion	2009 dec	
	FR004	Châteaufort-sur-Loire	2012 feb	
	FR005	Chaville		
	FR006	Déodat	2013 giu	
	FR007	Dijon		
	FR008	Evreux		
	FR009	Lyon		
	FR010	Oléron	2012 dec	
	FR011	Saintes-de-Béarn	2009 dec	urban
	FR012	Salon de Provence	2011 sep	

Germany	DE001	Berlin		
	DE002	Bielefeld		
	DE003	Eberswalde		
	DE004	Göttingen		
	DE005	Regensburg		
	DE006	Witzshausen		

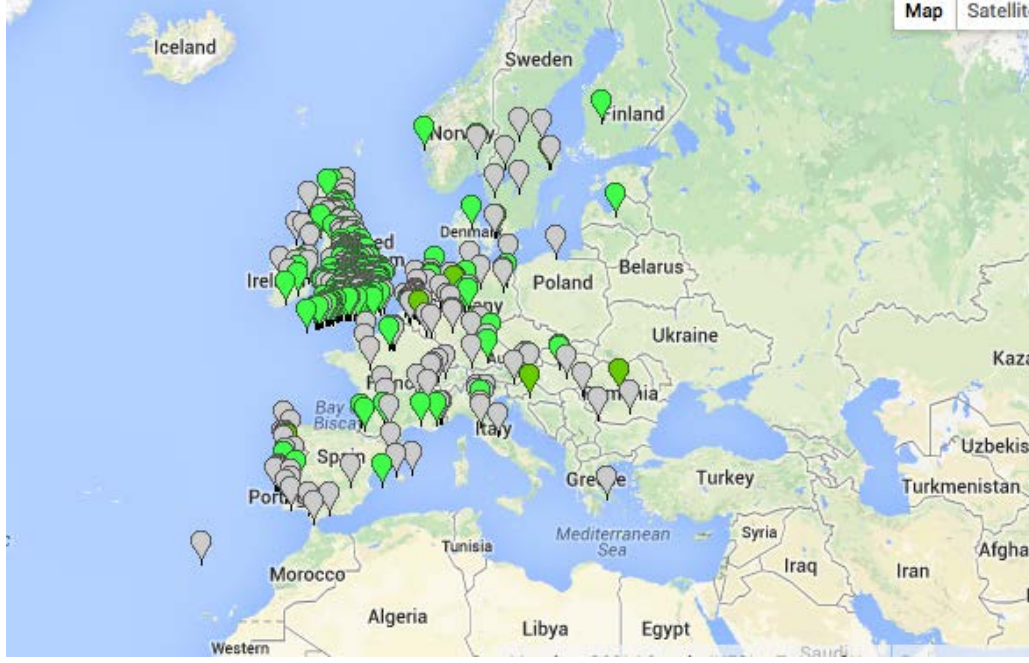
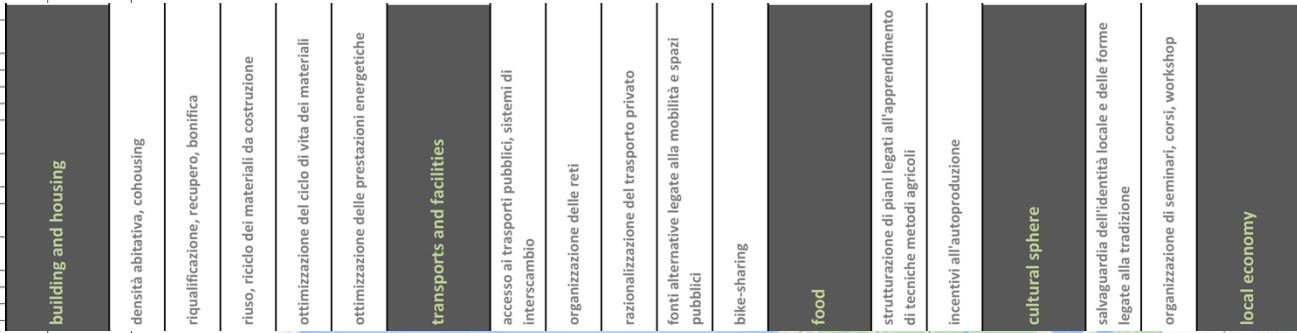
Ireland	IE001	Kinsale		
	IE002	Kildare Town		
	IE003	Tramore		

Italy	IT001	Bologna		
	IT002	Budrio		
	IT003	Campagnola		
	IT004	Carimate		
	IT005	Carp		
	IT006	Ferrara		
	IT007	Granarolo		
	IT008	L'Aggola		
	IT009	Lomazzo		
	IT010	Macerata		
	IT011	Portogruaro		
	IT012	San Lazzaro		
	IT013	Scandiano		
	IT014	Sevico		
	IT015	Urbania		
	IT016	Valbisio		
	IT017	Valmaggia	2008 giu	hamlet

Latvia	LV001	Ruķe		
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Netherlands	NL001	Groeningen	2011 jan	
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United Kingdom	UK001	Berkhamstead		
	UK002	Bolton		
	UK003	Brinsford		
	UK004	Cheltenham		
	UK005	Emmott		
	UK006	Farnmouth		
	UK007	Glastonbury		
	UK008	Holmfirth		
	UK009	Leamington		
	UK010	Lewes		
	UK011	Llandello		
	UK012	London		
	UK013	Pease		
	UK014	Shrewsbury		
	UK015	Tooting		
	UK016	Totnes	2006 sep	urban, district
	UK017	West Kirby		
	UK018	Whitehead		
	UK019	Wivenhoe		



Dagli Approcci alla Pratiche | Resilienza e Adattamento [TT]



Food-growing groups

Most Transition groups start with growing food, whether on an allotment, community garden or garden share scheme, as well as by setting up new food-related enterprises.



Community-owned breweries

Community-owned breweries: one of the ways we can keep money local while innovating and creating employment. Oh, and really good beer.



Building community relationships

Transition groups pay attention to how they work together as groups, to supporting each other and avoiding the burnout which can often happen with volunteer activities.



Community-owned bakeries

Every community needs (or kneads?) one, a vital piece of the local infrastructure, sadly no longer common on our high streets, often replaced by out-of-town supermarkets.



Transition Streets projects

Transition Streets shows how change can happen on a street-by-street basis, reducing household costs and energy use while also rebuilding a sense of community.



Community-owned energy

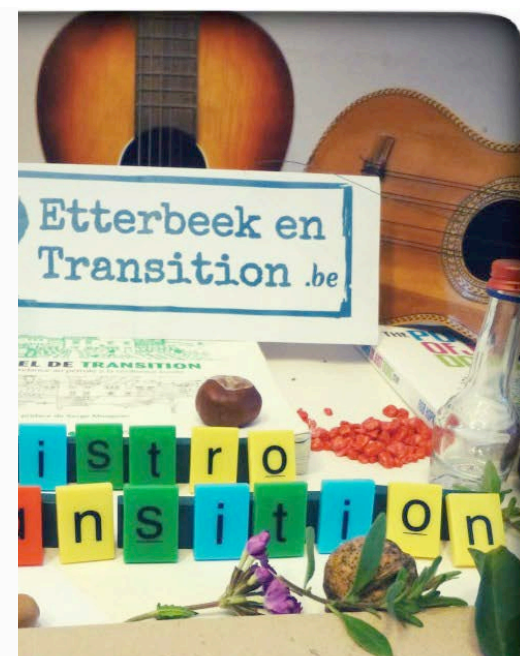
Renewable energy offers huge potential for communities to create cleaner electricity for homes, schools and businesses – generating income and providing a safer place for investments.



REconomy projects

All these projects are making a real difference in their communities. Increasingly, Transition groups are creating new jobs and livelihoods and vibrant, viable new enterprises that keep money local and boost resilience. These groups are also mapping their local economies to measure the potential benefits of this process. Transition Network's REconomy project offers the tools, networking and support to enable this.

Dagli Approcci alla Pratiche | Resilienza e Adattamento [TT]



*Prochain bistro transition
ce jeudi 2 janvier à 18h30
au Café Saint-Antoine
à la Place... Saint-Antoine !*



Dagli Approcci alle Pratiche | Resilienza e Adattamento [CC]

Newman propone delle strategie ed azioni per la resilient city:

- **renewable energy city,**
- **carbon neutral city, distributed city,**
- **photosintetic city,**
- **eco-efficient city,**
- **pace-based city,**
- **sustainable transport city**

In queste strategie chiave vi sono alcuni principi derivanti dal dibattito disciplinare sulle “città sostenibili” (come la densificazione, mobilità sostenibile) ed alcune strategie derivanti da matrici più ingegneristiche (come l’utilizzo di sistemi di gestione sostenibile delle acque – LCD e/o soluzioni per incrementare l’efficienza energetica).

Dagli Approcci alle Pratiche | Resilienza e Adattamento [CC]

1. diversità:
2. Ridondanza:
3. Modularità e indipendenza:
4. Feedback:
5. Capacità di adattamento
6. integrazione di aspetti ambientali (responsabilità):

ResilientCity.org

Dagli Approcci alla Pratiche | Resilienza e Adattamento [CC]

1. Density, Diversity and Mix

Resilient Cities and neighbourhoods will need to embrace density, diversity and mix of uses, users, building types, and public spaces.

2. Pedestrians First

Resilient cities and neighbourhoods will prioritize walking as the preferred mode of travel, and as a defining component of a healthy quality of life. Reducing car-dependency is a key objective and imperative

3. Transit Supportive

Resilient cities and neighbourhoods will develop in a way that is transit supportive. After walking and cycling, transit is the most sustainable mode of transportation. Resilient cities will need to re-orient their way of thinking, by shifting from car oriented urban patterns to transit oriented urban patterns and developments (mobility hubs, intensified corridors, and TODs).

4. Place-Making

Resilient cities and neighbourhoods will focus energy and resources on conserving, enhancing, and creating strong, vibrant places, which are a significant component of the neighbourhood's structure and of the community's identity (public realm, pedestrian scale (a 500 m radius), Heritage resources)

5. Complete Communities

Resilient neighbourhoods will provide the needs of daily living, within walking distance (a 500 m radius) (destinations must be accessible within a pleasant walking distance , enjoyable to walk)

6. Integrated Natural Systems

Resilient cities and neighbourhoods will conserve and enhance the health of natural systems (including climate) and areas of environmental significance, and manage the impacts of climate change. The health and integrity of wildlife and vegetation are also a priority. Protecting existing biodiversity, indigenous or endangered species, wetlands, the tree canopy, connectivity, are all a necessary aspect of securing healthy natural systems.

Dagli Approcci alla Pratiche | Resilienza e Adattamento [CC]

7. Integrated Technical and Industrial Systems

Resilient Cities and neighbourhoods will enhance the effectiveness, efficiency and safety of their technical and industrial systems and processes, including their manufacturing, transportation, communications and construction infrastructure and systems to increase their energy efficiency, and reduce their environmental footprint.

8. Local Sources

Resilient regions, cities, and neighbourhoods will grow and produce the resources they need, in close proximity (200 kilometre radius)

9. Engaged Communities

The development of resilient cities and neighbourhoods will require the active participation of community members, at all scales.

10. Redundant and Durable Life Safety and Critical Infrastructure Systems

Resilient Cities and neighbourhoods will plan and design for redundancy and durability of their life safety and critical infrastructure systems. Planning and design of these systems will aim for levels of redundancy and durability that are commensurate with the increasing environmental, social, and economic stresses associated with the impacts of climate change and peak oil.

11. Resilient Operations

Resilient cities and neighbourhoods will develop building types and urban forms with reduced servicing costs, and reduced environmental footprints



Dagli Approcci alla Pratiche | Resilienza e Adattamento [CC]

6 CHALLENGES TO RESILIENCE

- Population growth + migration
- Climate change
- Energy scarcity
- Income disparity
- Socio-political
- Environmental degradation

+

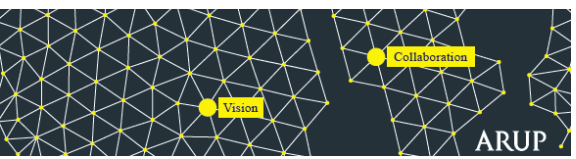
6 ATTRIBUTES OF RESILIENCE

- Flexibility
- Redundancy
- Diversity
- Decoupling
- Decentralization
- Environmental integration

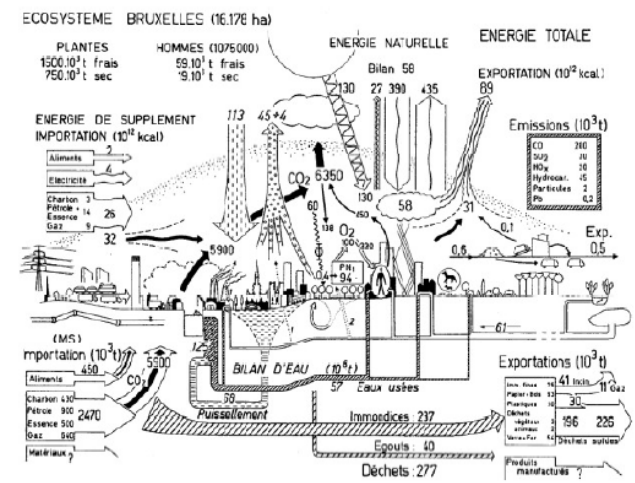
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6 APPROACHES FOR RESILIENCE

- Growth + Density
- Energy Performance
- Local Food Production
- Modularization Key Infrastructure
- Integrated Metabolism
- Infrastructure 'Hardening'

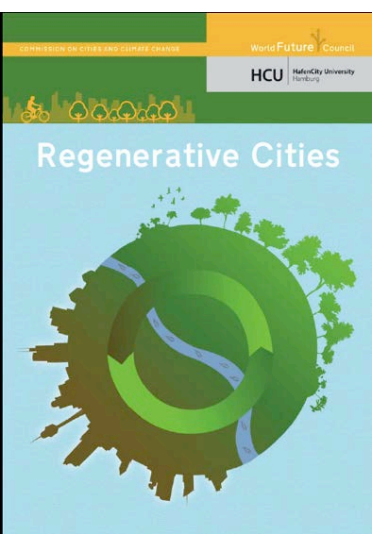


Integrated Systems City Scale

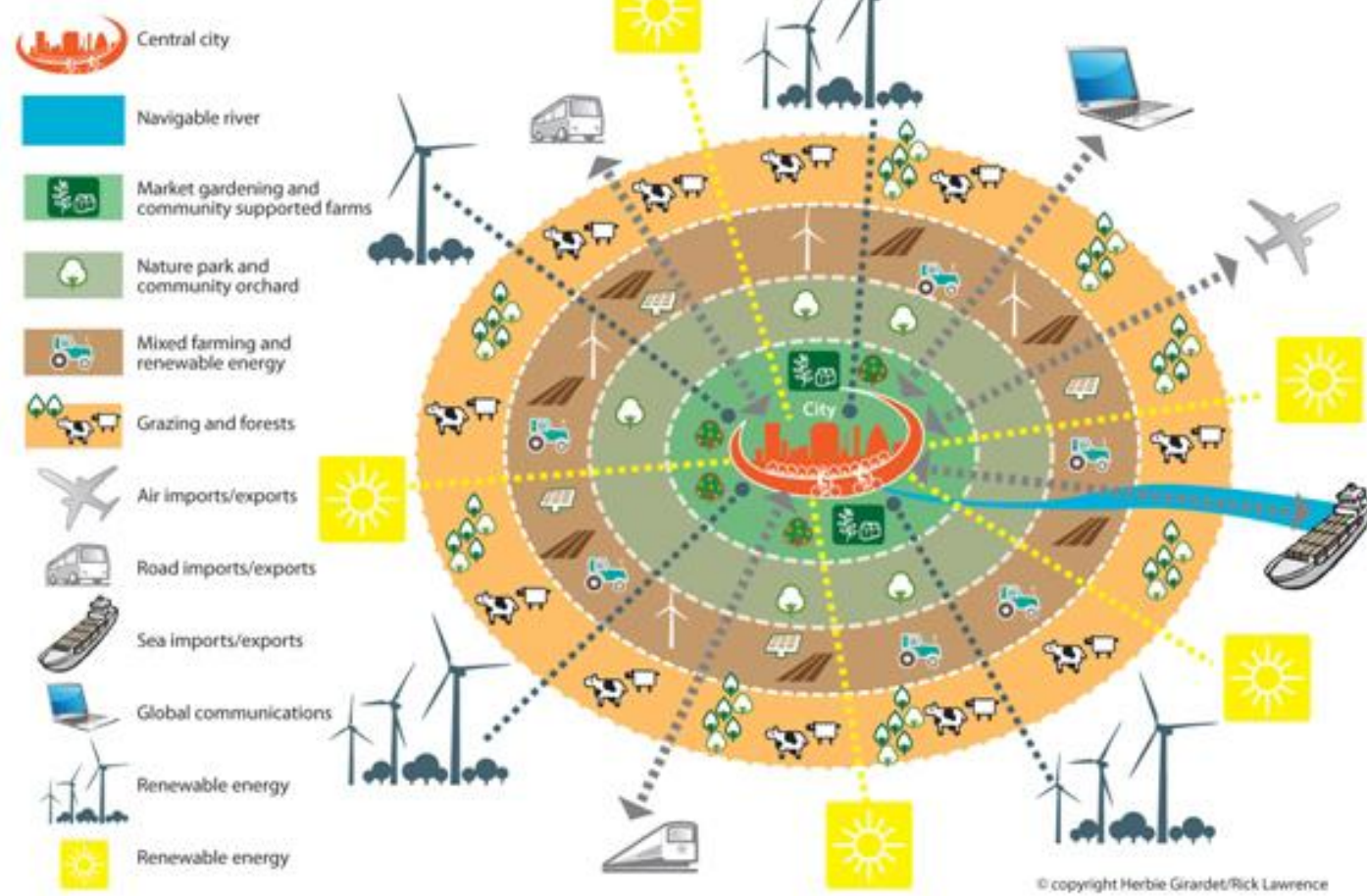


Duvigneaud, P. et Denayer-de Smet, S. (eds.) (1975) L' Ecosystème Urbain.

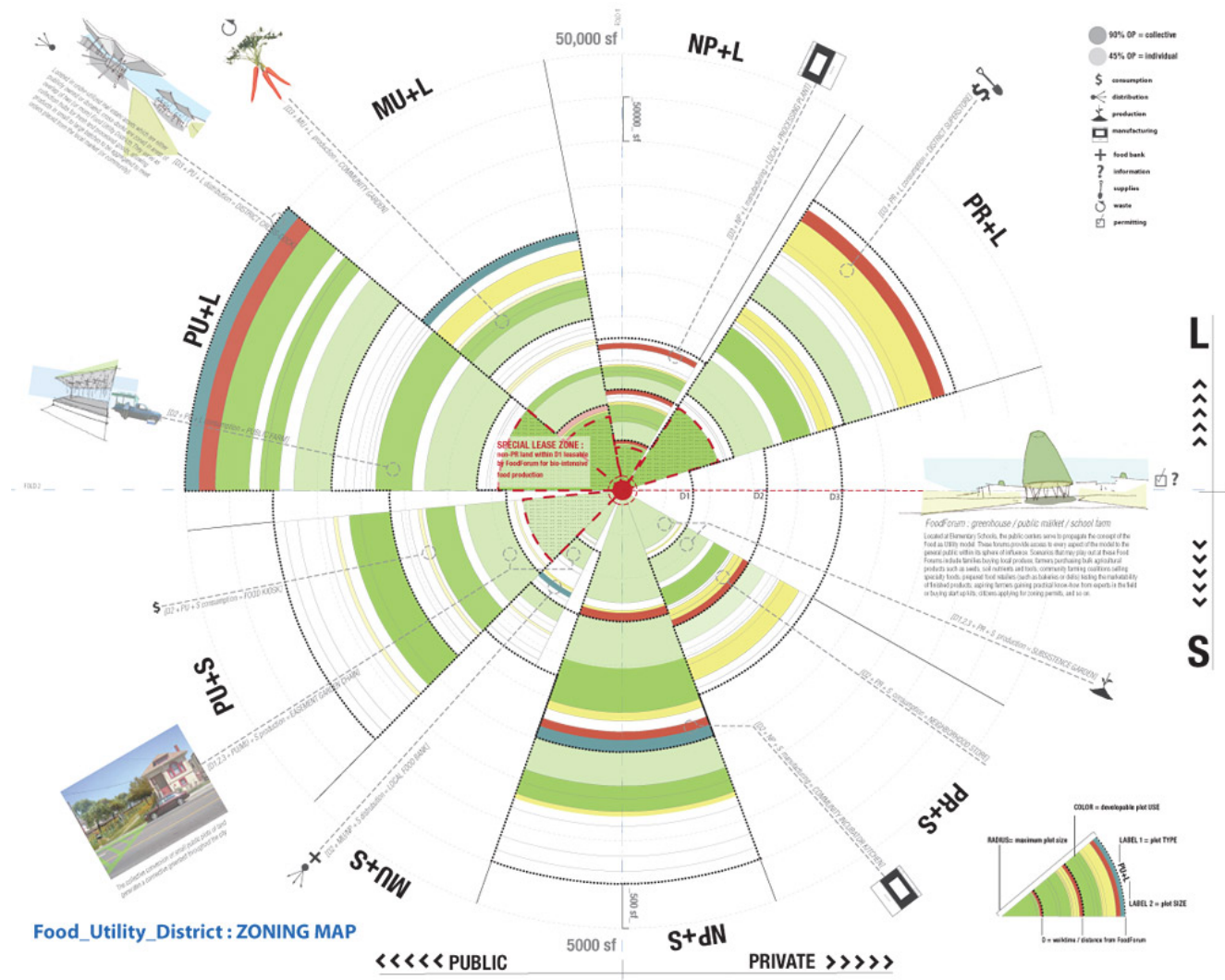
Dagli Approcci alla Pratiche | Resilienza e Adattamento [CC]



"Ecopolis"



Città resilienti (cambiamenti climatici e peak oil)



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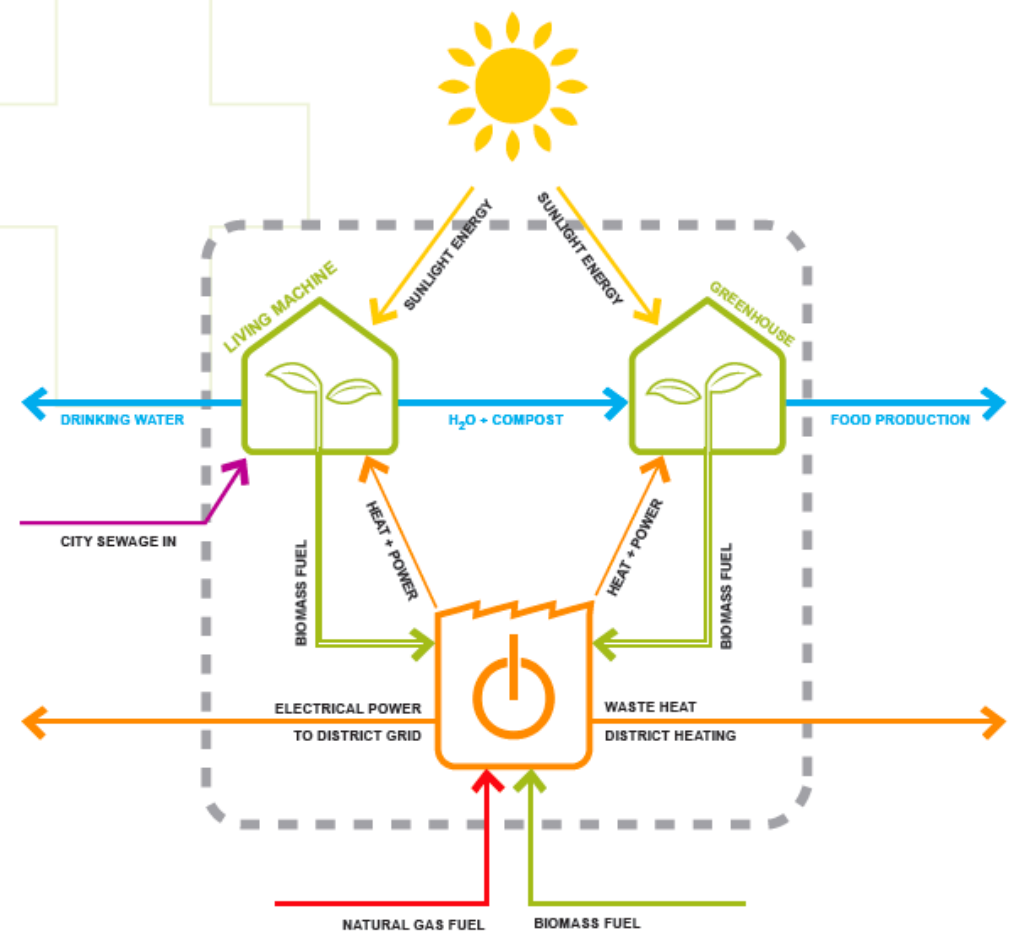
MODULARIZATION
**KEY INFRA
STRUCTURE
SYSTEMS**

BY CRAIG APPLGATH
BASED ON IDEAS OF JOHN
TODD AND GORDON GRAFF



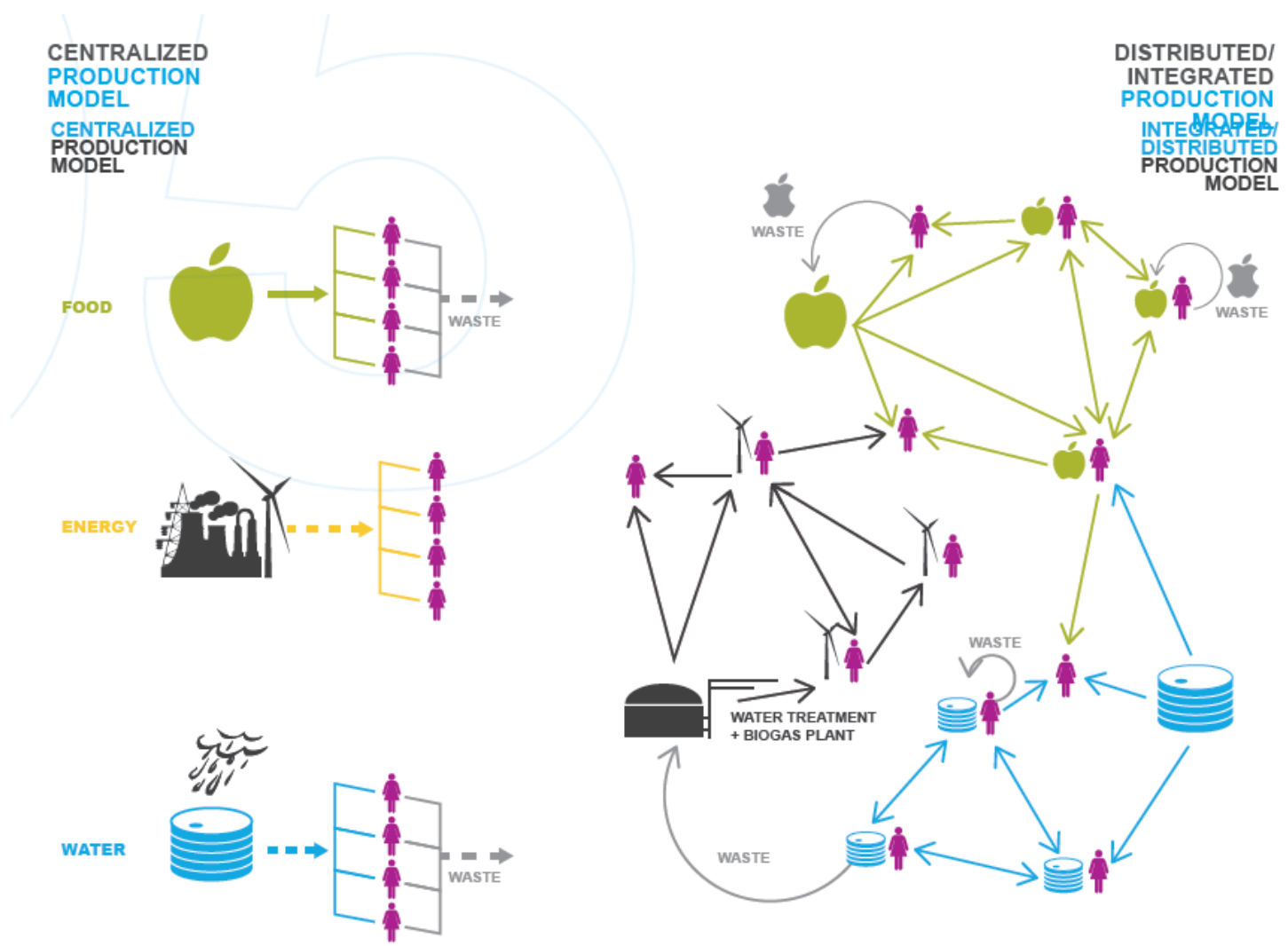
THE RESILIENCE CENTRE

COMBINED DISTRICT
POWER, HEAT, WASTE,
WATER RECOVERY, FOOD
PRODUCTION CENTRE.
THIS PLAN WOULD BE
SCALABLE - FROM
NEIGHBOURHOOD
CENTRES TO
DISTRICT CENTRES.



Modularity

Dagli Approcci alla Pratiche | Resilienza e Adattamento [CC]

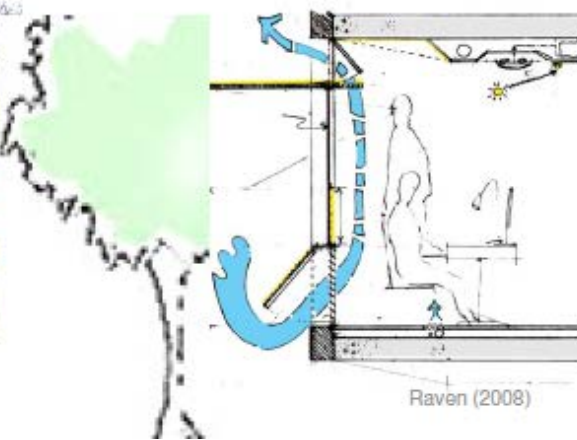
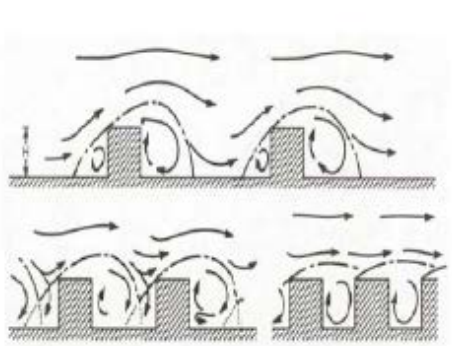
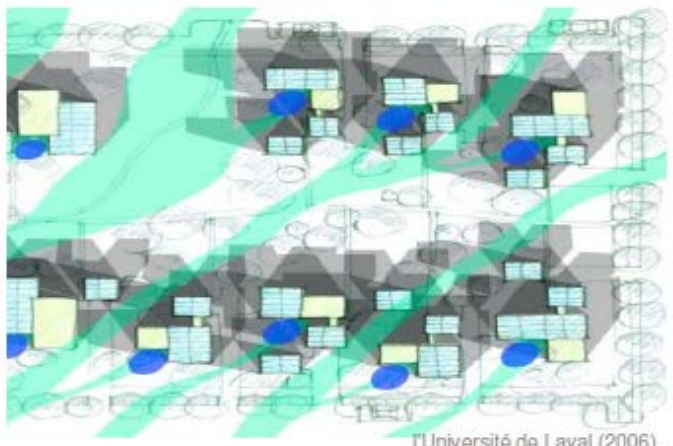


3. Modularity

Dagli Approcci alla Pratiche | Resilienza e Adattamento [CC]

Climate-Resilient Urban Design Urban Ventilation + Green Infrastructure

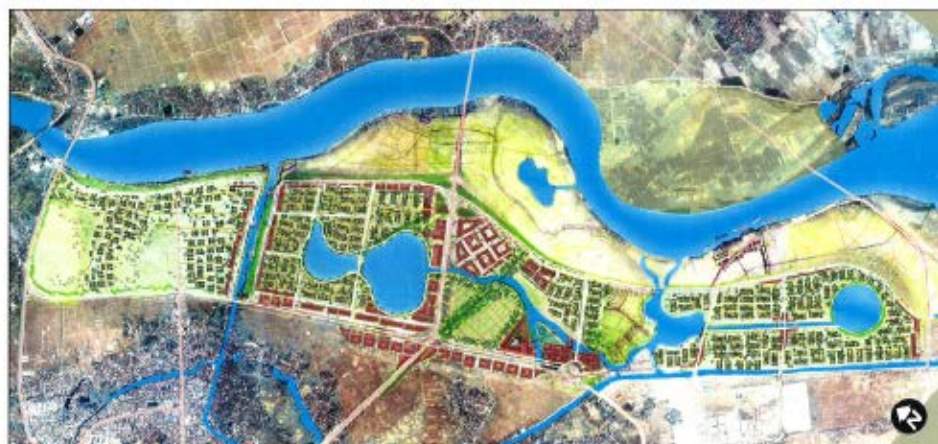
Climate-Resilient Urban Design
Resilient Cities Congress
Bonn, May 2010



Dagli Approcci alla Pratiche | Resilienza e Adattamento [CC]

Climate-Resilient Urban Design Urban Ventilation + Green Infrastructure

Climate-Resilient Urban Design
Resilient Cities Congress
Bonn, May 2010



Green and blue “fingers”:
Passive strategies:
Natural Cooling,
Stormwater Retention,
Canals and Connected
Green Corridors aligned
with prevailing summer
breezes



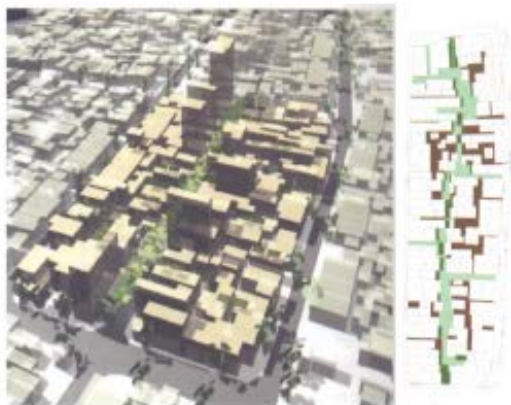
Thanh Hoa Capital Plan, Vietnam, Raven-LBG, 2008

Jeffrey Raven AIA LEED AP

Dagli Approcci alla Pratiche | Resilienza e Adattamento [CC]

Climate-Resilient Urban Design Urban Ventilation + Green Infrastructure

Climate-Resilient Urban Design
Resilient Cities Congress
Bonn, May 2010



l'Université de Laval (2006).



Masdar City Model Detail , Fosters + Partners

“Green fingers”
through dense,
energy-efficient,
pedestrian-
friendly
neighborhoods of
cool streets,
urban squares
lower building
cooling loads



Rendering Detail, Thanh Hoa Capital Plan, Vietnam, Raven-LBG, 2008

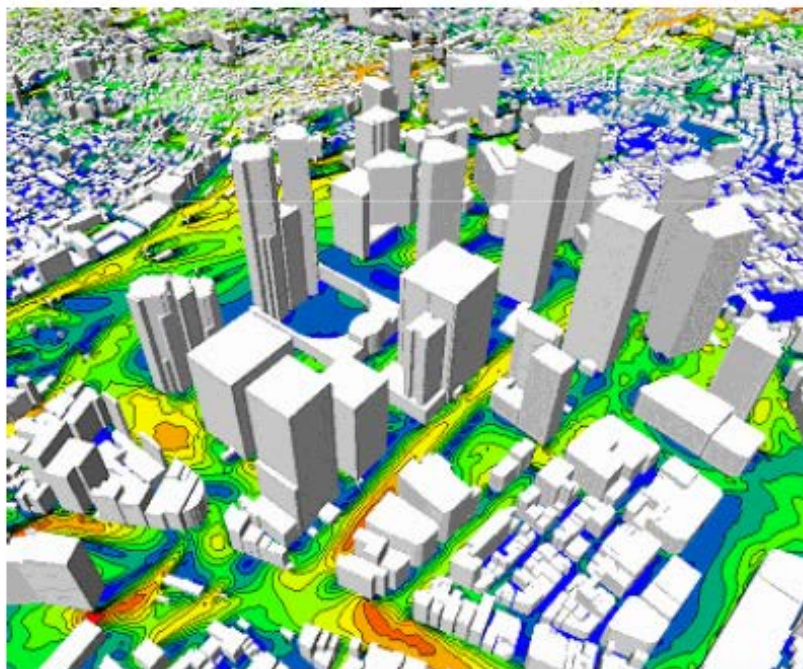
Dagli Approcci alla Pratiche | Resilienza e Adattamento [CC]

Climate-Resilient Urban Design Morphological Indicators

Climate-Resilient Urban Design
Resilient Cities Congress
Bonn, May 2010

Computational fluid dynamics
(CFD) in Urban Design

Suite of tools, determining
comfort or “desirability” factor in
the public realm



Dagli Approcci alla Pratiche | Resilienza e Adattamento [CC]

CHICAGO CLIMATE ACTION PLAN

1. Manage Heat

Update the heat response plan, focusing on vulnerable populations, complete further research into urban heat island effect and pursue ways to cool hot spots

2. Pursue Innovative Cooling

Launch an effort to seek out innovative ideas for cooling the city and encourage property owners to make green landscape and energy efficiency improvements.

Dagli Approcci alla Pratiche | Resilienza e Adattamento [CC]

CHICAGO CLIMATE ACTION PLAN

3. Protect Air Quality

Intensity efforts to reduce ozone-precursors through mitigation programs that reduce driving and emissions from power plants.

4. Manage Stormwater

Collaborate with the Metropolitan Water Reclamation District on a Chicago Watershed Plan that factors in climate changes and uses vacant land to manage stormwater.

5. Implement Green Urban Design

Implement key steps in Chicago's Green Urban Design plan to manage heat and flooding. These steps will enable Chicago to capture rain where it falls and reflect away some of the intensity of the sun on hot days.

Dagli Approcci alla Pratiche | Resilienza e Adattamento [CC]

CHICAGO CLIMATE ACTION PLAN

6. Preserve Our Plants and Trees

Publish a new plant-growing list that focuses on plants that can thrive in altered climates. Also draft a new landscape ordinance to accommodate plants that can tolerate the altered climate. View the list of recommended trees for Chicago's changing climate.

7. Engage the Public

Share climate research findings with groups most affected – social service agencies, garden clubs, etc. Help individual households to take their own steps to reduce flooding and manage heat waves, such as installing rain barrels and back-up power for sump pumps and planting shade trees.

Dagli Approcci alla Pratiche | Resilienza e Adattamento [CC]

CHICAGO CLIMATE ACTION PLAN

8. Engage Businesses

Work with businesses to analyze their vulnerability to climate change and take action.

9. Plan for the Future

Use the Green Steering Committee of City Commissioners to oversee City implementation efforts and the Green Ribbon Committee of business and community leaders to assess how the plan is being implemented, recommend revisions, and report to the Mayor and all Chicagoans on our progress.

Dagli Approcci alla Pratiche | Resilienza e Adattamento [CC]

Climate Adaptation Strategy Ho Chi Minh City

moving towards the sea with climate change adaptation

Climate adaptation strategy for Ho Chi Minh City officially handed over by Rotterdam City

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Dagli Approcci alla Pratiche | Resilienza e Adattamento [CC]

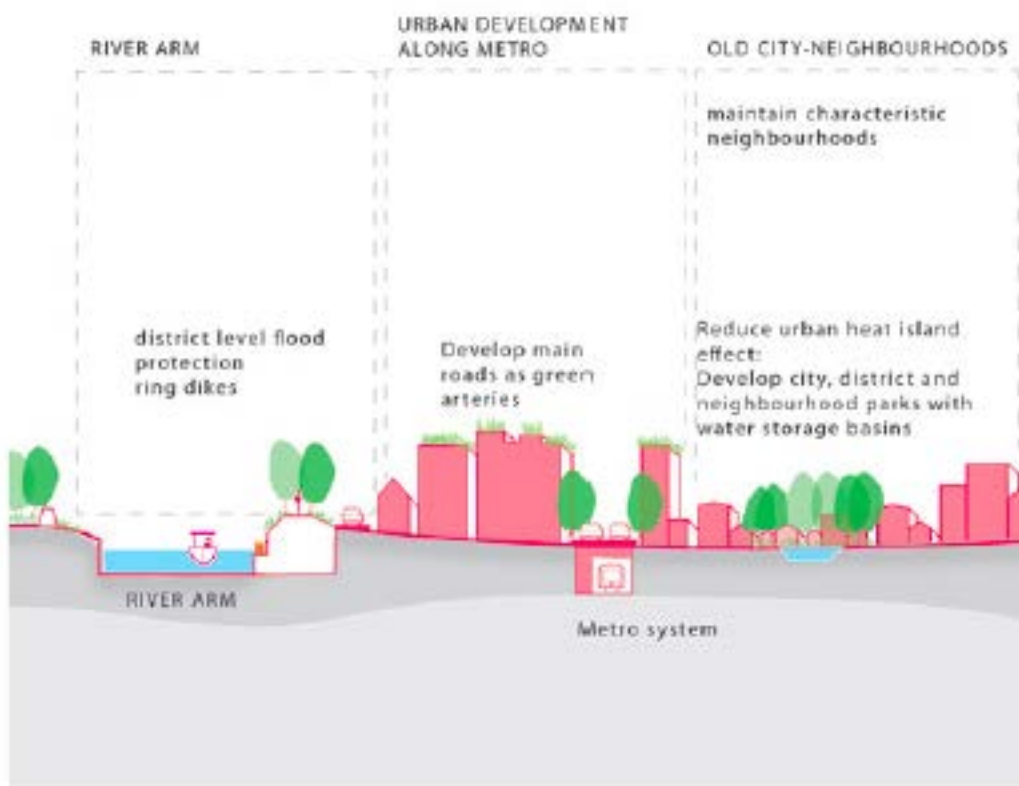
Climate Adaptation Strategy Ho Chi Minh City

moving towards the sea with climate change adaptation

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Climate Adaptation Strategy Ho Chi Minh City

moving towards the sea with climate change adaptation

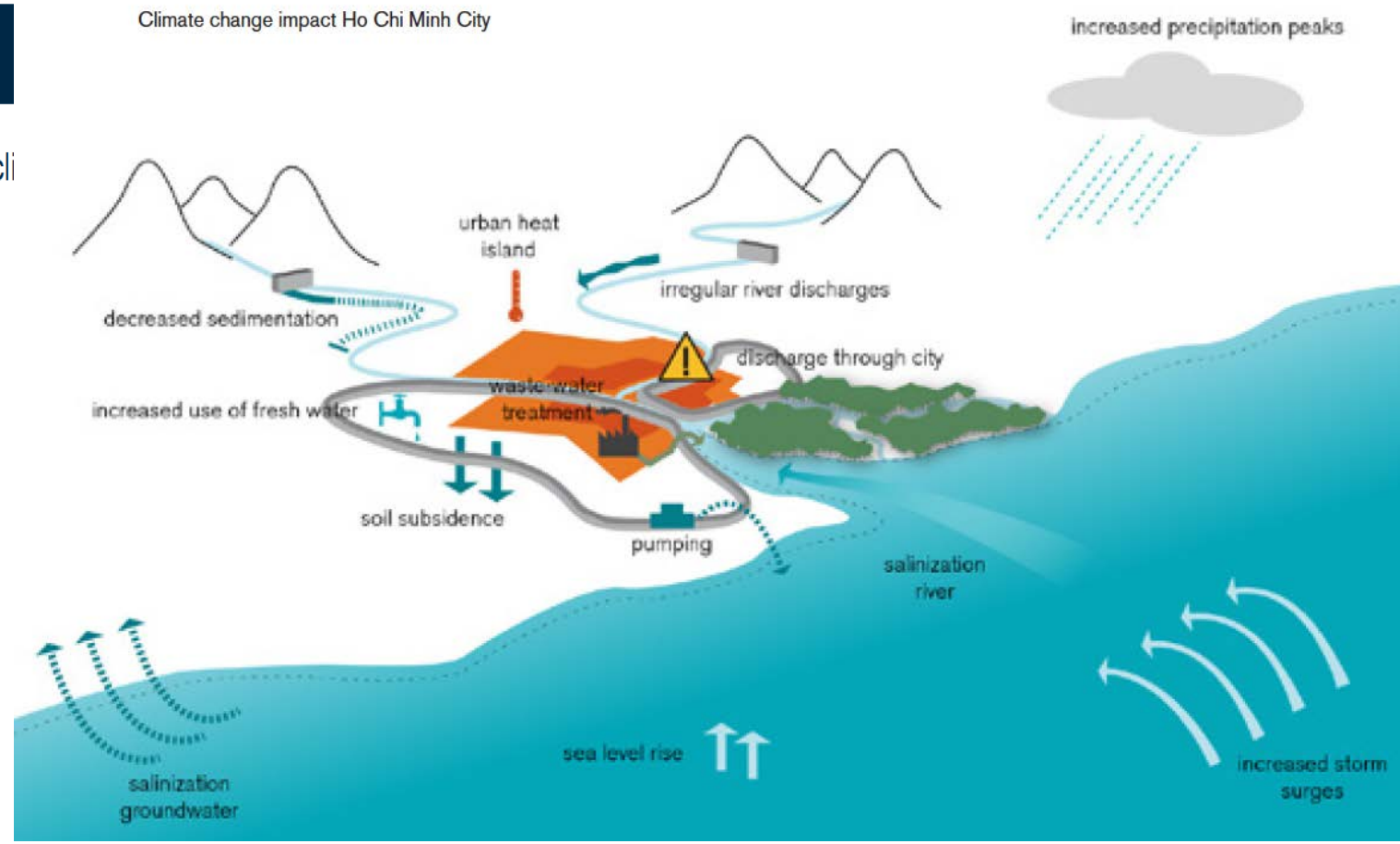


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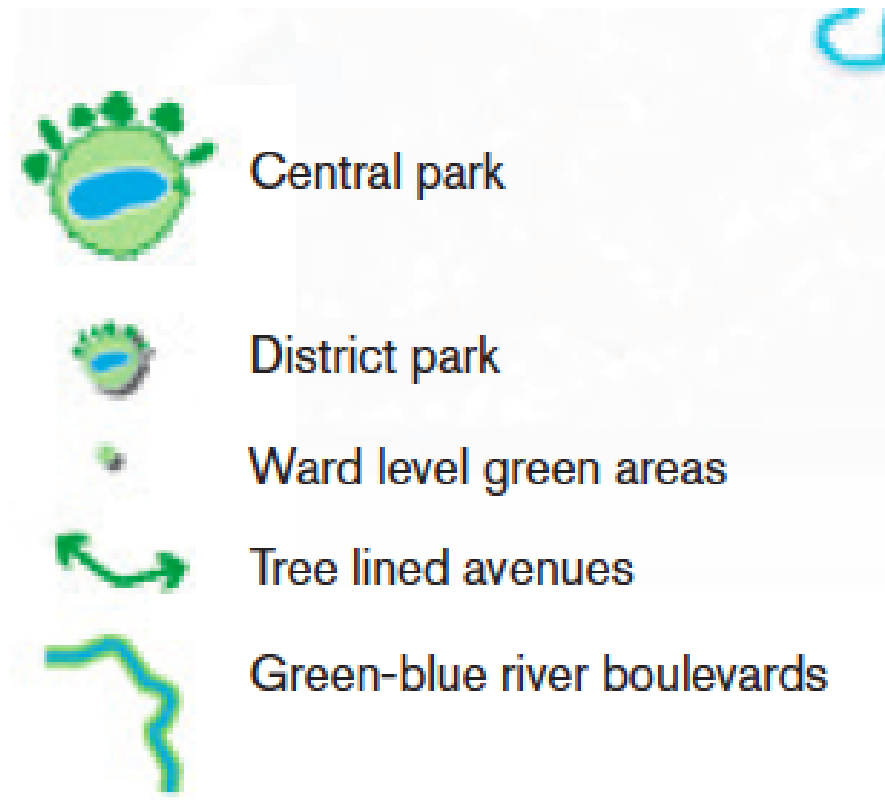
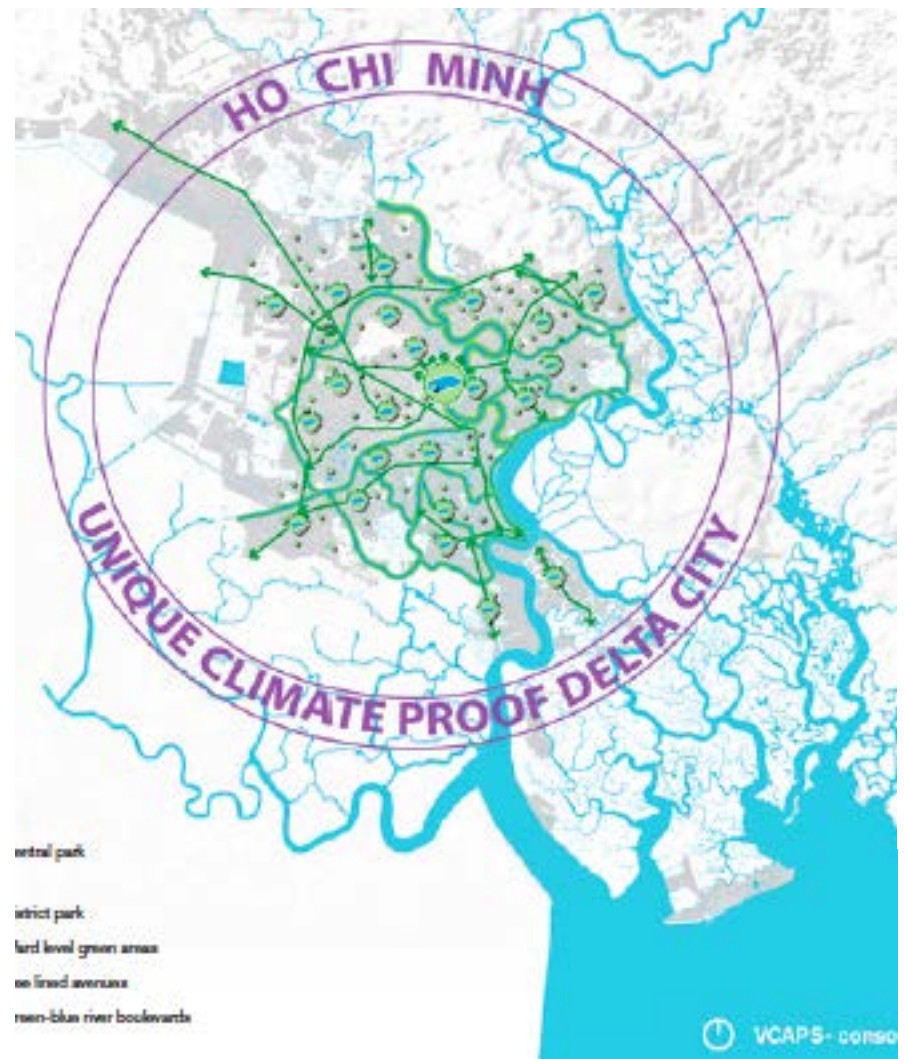
Climate Adaptation Strategy

Ho Chi Minh

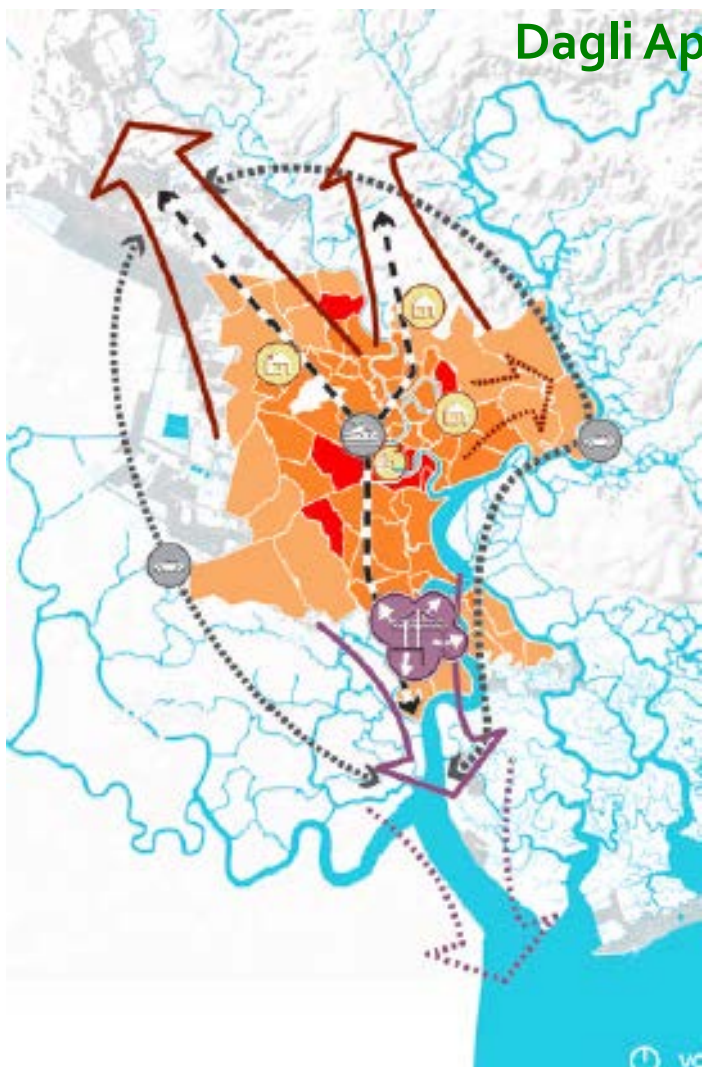
moving towards the sea with cli



Dagli Approcci alla Pratiche | Resilienza e Adattamento [CC]



Dagli Approcci alla Pratiche | Resilienza e Adattamento [CC]



	Strategic Intervention	Term	Type	
1A	Develop new residential areas towards the northwest and east	Short term	No-regret	In all scenarios space is needed for urban expansion. From a climate adaptation point of view the northwest and east are the best locations. Developing towards the south will require large investments in water safety in the future.
1B	Develop harbours towards the south using adaptive measures	Short term, outplacement has already started.	Safety margin, include flexibility	Develop capital intensive harbour areas with a surplus height anticipating future sea level rise. Where possible, leave room for future adjustment. In case of lower economic growth, not all of the proposed locations may be necessary so don't develop too much land at once.
1C	Redevelop old harbours, combining flood protection with attractive water fronts	Short term, outplacement has already started.	Win-win	Developing a delta dike is in some inner-city locations a win-win situation as more space for development becomes available.
1D	Increase urban density in the inner-city	Short term	No-regret	In all scenarios the population of the city grows at least until 2025. Increasing density as a solution means that less new ground will be urbanized, a process that normally is irreversible.
1E	Develop north-south infrastructure	Short term	Robust	Build infrastructure robust, taking into account sea level rise. Measures are necessary for the success of the harbour and industrial areas in the south. The connections are clearly more profitable in high growth scenarios.
1F	Avoid encroachment on waterways	Short term	No-regret	In all scenarios there will be a need to avoid encroachment.

Direction 1: Base development direction on soil and water conditions

Dagli Approcci alla Pratiche | Resilienza e Adattamento [CC]

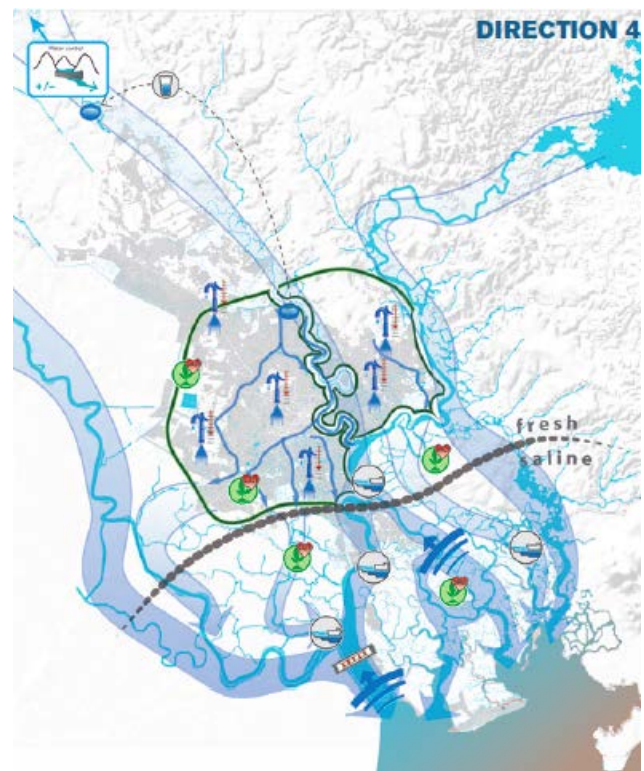


	Strategic Intervention	Term	Type	
2A	Develop flood risk maps and flood risk standards	Short term		Flood risk maps form the basis for standards
2B	Protect the inner city with ring dike	Short term	Win-win	Combination with the development of ring road 3 saves costs.
2C	Optimize reservoir management for flood protection	Short term	No-regret	Optimizing reservoir operation from a floods perspective will reduce the risks of inundation north of HCMC.
2D	Tidal barrier	Long term		Measure only necessary in case of extreme sea level rise.
2E	Develop district adaptation pathways	Short term	No-regret	A bottom-up approach is expected to contribute to resilience at the district level.
2F	Adaptive building towards the south	Short term	Flexible	Building in smaller quantities and on mounds leaving space for future adaptation makes it possible to grow with sea level rise.
2G	Identify and protect the vital and the vulnerable areas in HCMC	Short term	No-regret, robust	Create extra robust solutions for vital and vulnerable functions.
2H	Protect the riparian zones along the rivers	Short term	No-regret	In all scenarios, safeguarding riparian zones leads to the reduction of flood risks.
2I	Strengthen emergency management	Short term	No-regret	Helps to reduce victims and economic damage also in the existing situation.

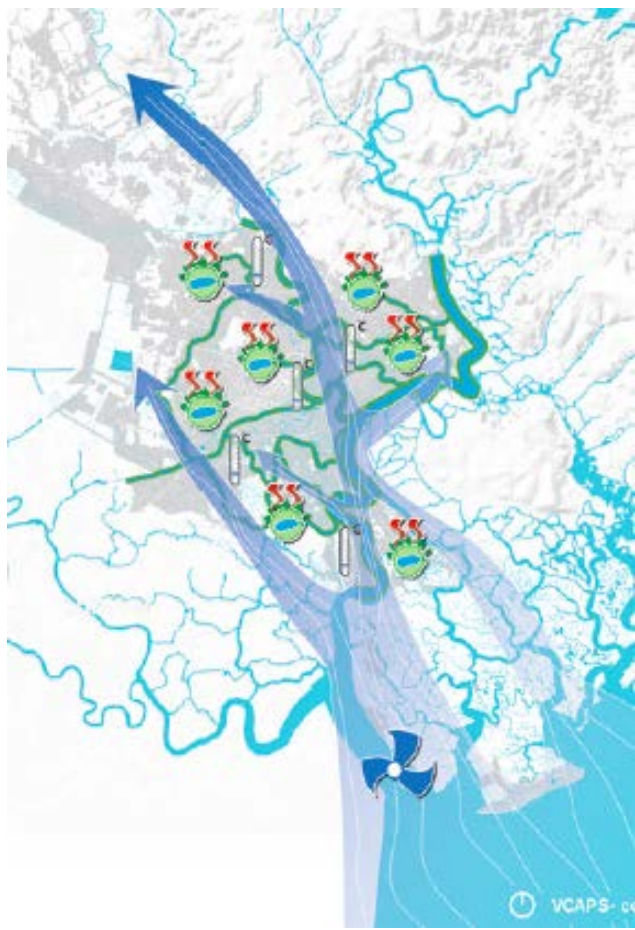
Direction 2: Use a stepwise approach for flood protection



Direction 4: Prevent salinisation where possible, adapt where necessary



Direction 5: Create alternatives for groundwater use



6.7 Direction 6: Strengthen the blue-green network and 'urban ventilation'

Riferimenti

<http://www.resalliance.org/>

<http://www.transitionnetwork.org/>

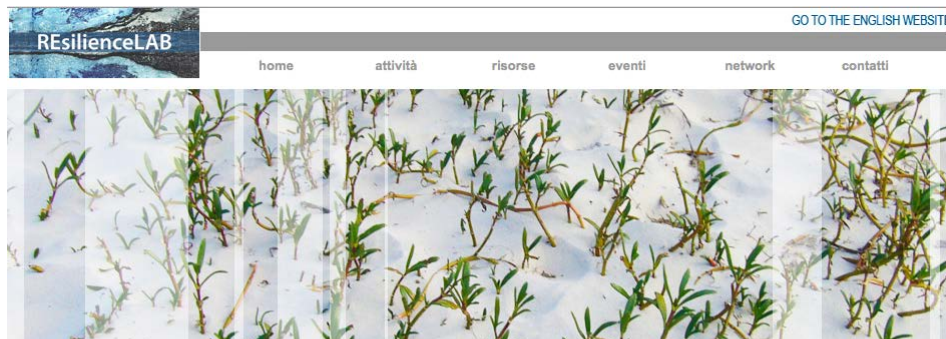
<http://resilient-cities.iclei.org/>

<http://www.resilientcity.org/>



<http://www.unisdr.org/campaign/resilientcities/>

Riferimenti



Appuntamenti

RESilienceLAB

28-29.03.2014 - NEXUS

Workshop internazionale sul tema PERI URBAN AREAS AND FOOD-ENERGY-WATER NEXUS. SUSTAINABILITY AND RESILIENT STRATEGIES IN THE AGE OF CLIMATE CHANGE organizzato dal Laboratorio di Cooperazione Internazionale del DASIU in collaborazione con RESilienceLAB e con il Laboratorio di Simulazione

RESilienceLAB si costituisce come una rete di persone che con approcci e sguardi differenti hanno lavorato e lavorano sui temi della sostenibilità, dell'adattamento e della resilienza urbana e territoriale.

La rete si propone come supporto della promozione di azioni e strategie di resilienza.

I motivi

Negli ultimi anni i concetti di RESILIENZA e di CITTA' RESILIENTE si sono largamente diffusi a livello politico, accademico e comunitario sia in Europa che nel mondo. Nel contesto italiano, questi concetti hanno avuto una diffusione

www.resiliencelab.eu

Angela Colucci
Le città resilienti: approcci e strategie e strategie

<http://www.jeanmonnet-pv.it>

ÉTUDES - STUDIES

Le città resilienti:
approcci e strategie

Angela Colucci



Angela Colucci _ M.Arch., Ph.D.

www.angelacolucci.eu

angela.colucci@polimi.it

MOB_ +393381057288

Co.O.PE.Ra.Te. Ltd

**Environmental and regional development
research**

via Sant'Ennodio 1/a, 27100 Pavia

**Department of Architecture and Urban
Studies**

Politecnico di Milano

viale Golgi 39, 20133 Milano

PHO +390223995450