



NATIONAL TECHNICAL
UNIVERSITY OF ATHENS



«SUSTAINABILITY vs ARCHITECTURAL DESIGN»

The places of urban transformation: towards sustainable construction site

environmental and social impact
of urban construction site

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Construction site

place of transformation and perceptive and social involvement

new emotional geography of urban places

transforming things or how to use it?

INTEGRATION

PARTICIPATION

COMMUNICATION

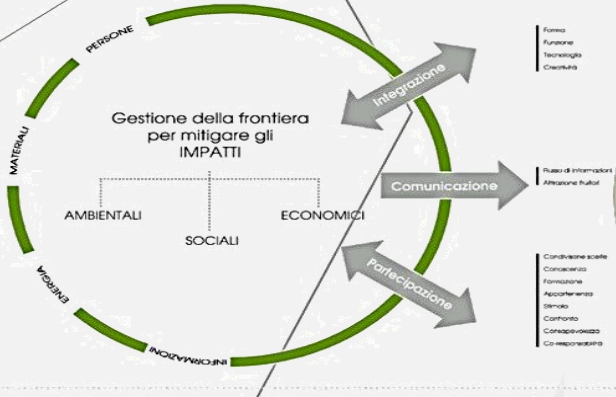


Growth and development express the dynamics of an **Economic System** as an **accumulation**.

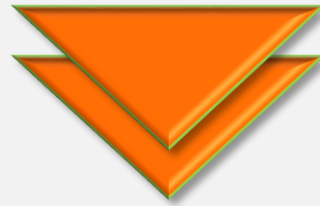
VS

Growth and development express the dynamics of a **Biologic System** as a **transformation**.

*Gilles Clement
Manifesto del Terzo paesaggio*



Research project of national interest PRIN



Landscape Protection between Preservation and Change. Economy and Beauty for a Sustainable Development.



Coordinator :
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Urban Sustainable Building site
area
fence

1. Waters R. Franchino
2. Energy A. Violano
3. Waste C. Frettoloso
4. Green F. Muzzillo
5. Historic heritage G. Amirante
6. Communication A. Violano
7. Design L. Capobianco

Social and Environmental
IMPACTS

Benefits inside social contest





Cittadinarietà

integration, identity-relationship

a renewed urban paradigm



HOSPITALITY

time

The city we need is ...
... Socially inclusive.
UNHABITAT – THINKERS CAMPUS 2014

VISITABILITY

able to access to the spaces of relationship, even by people with reduced or impaired motor or sensory capacity
Ministry Decree n. 236/1986

ACCESSIBILITY

Accessibility expresses the highest level of quality of the built space as it allows full fruition
Ministry Decree n. 236/1986

HABITABILITY

VISIBILITY

LIVEABILITY

WELL-NESS

Wellness ≠ Comfort
Io , gli altri e l'ambiente
Fabrizio Carola

COMMUNICABILITY

I can to share my knowledge with others without impoverishing myself ...
... Creating a virtuous miraculous process that is enhanced those who give and those who receive
Nuccio Ordine

MOBILITY

Interconnection's network
Alternative fuels
Prevalence of public service

REGENERABILITY

Resilience
Energy Efficiency
Low environmental impact

GREEN FENCE(GREEN)

Green screens: where the lives intersects in the city
Green Green Screen by Klein Dytham Architect_ Tokyo



INTERACTIVE FENCE

Digital screens: the interest of the city for the interaction
WeCantiere_ Piazza Mentana Firenze



TRANSPARENT – PERMEABLE FENCE

Transparent screens: take a look at what's to come
"DIARY" Making The Process Of Construction Transparent by SOUP DESIGN and constructors TAISEI DESIGN_ Ginza TOKYO



ARTISTIC FENCE

Recinzioni della comunicazione: arte e pubblicità
The restoration construction site of Palazzo Paone_ L'Aquila



LIGHTNESS FENCE

Recinzioni con sistemi di illuminazione integrata
"Shinjuku Southern Beat Project 2005"_ Recinzione temporanea per l'uscita della Stazione Shinjuku_ Tokyo

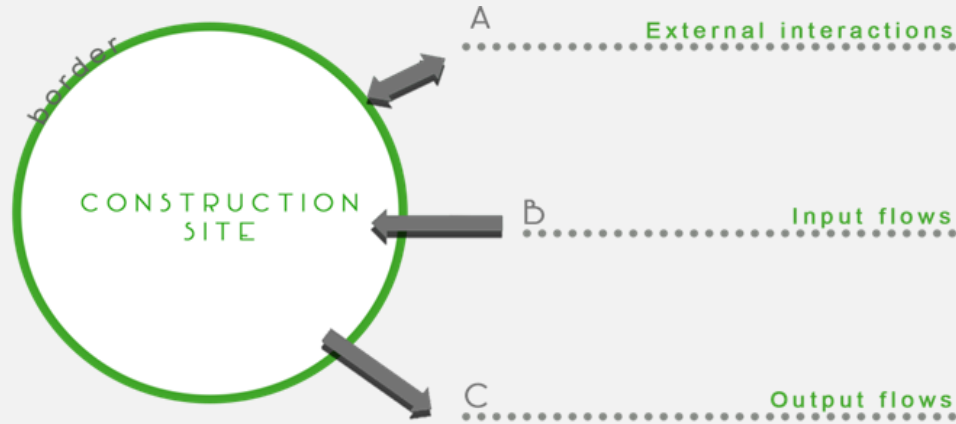


The flows

According to the different categories of flows (matter, people, Resources, Information and languages), and their interaction, we have been identified three typologies of flow-construction site interaction.

These interactions can be identified according to the passage through the fence:

- Full flow
- Partial flow
- Zero flow



Sub-categories of flows	Flows-frontier Interactions			
	Flows	A	B	C
Matter	Material			
	Transport means			
People	Direct users			
	Indirect users			
	Potential users			
Resources	Renewable energy			
	No renewable energy			
	Water			
	Vegetation			
Information	On the work to realize			
	On the site			
	Environmental info			
	Advertising			
	Tourism info			
Languages	Verbal			
	Non verbal (acoustic, visual, tactile, olfactory)			



INTEGRAZIONE

Berlin 2011
Kaiser-Wilhelm
Gedächtniskirche



London 2012 King's Cross Station

INSTALLAZIONI TEMPORANEE

spazi pubblici

PARTECIPAZIONE



Ifly Virgin Wonderwall
Harajuku,
TOKYO - GIAPPONE



COMUNICAZIONE

pubblicità
sistemi interattivi



INTEGRAZIONI ARTISTICHE



Piano di Comunicazione
Piano di Gestione Ambientale
Piano di Identità e Coordinamento visivo

prof. arch. Antonella Violano

AFFISSIONI PUBBLICITARIE

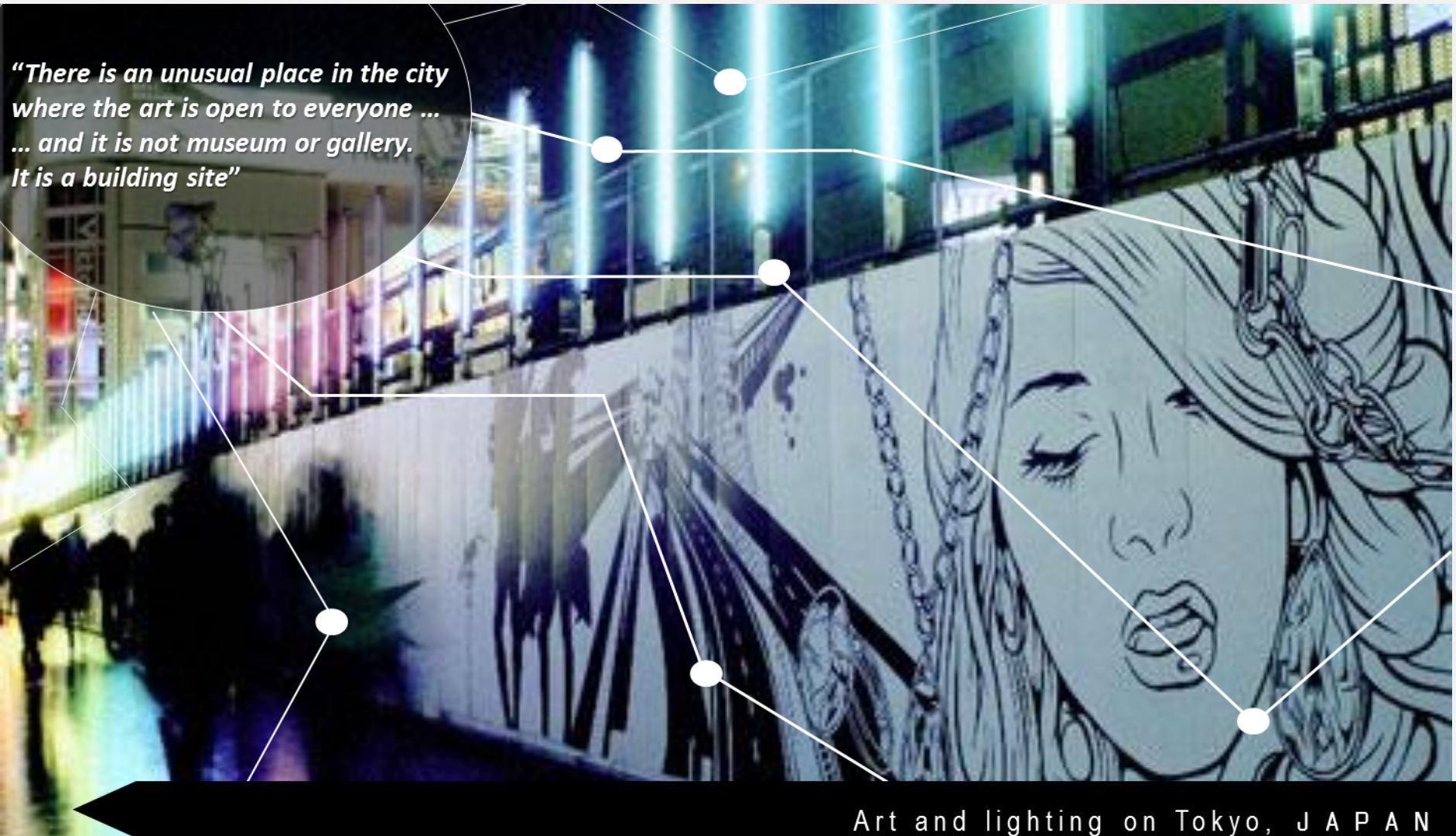


PROCESSO TRASPARENTE



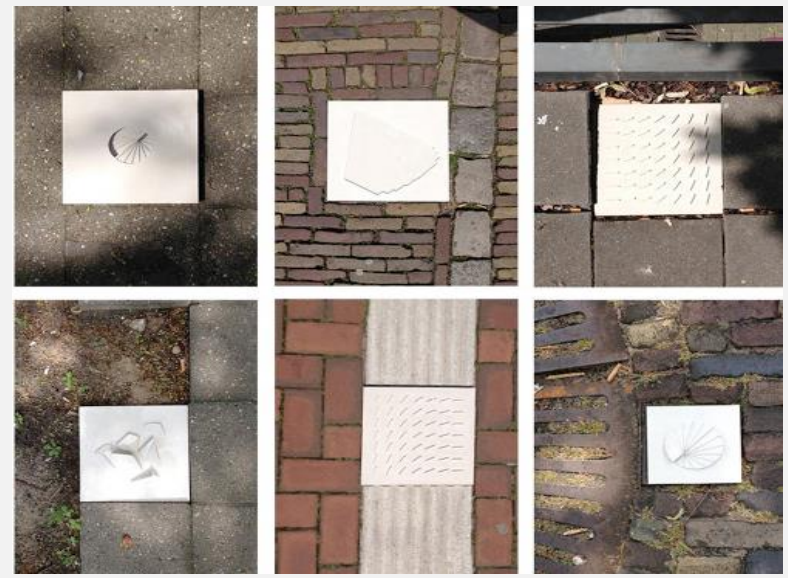
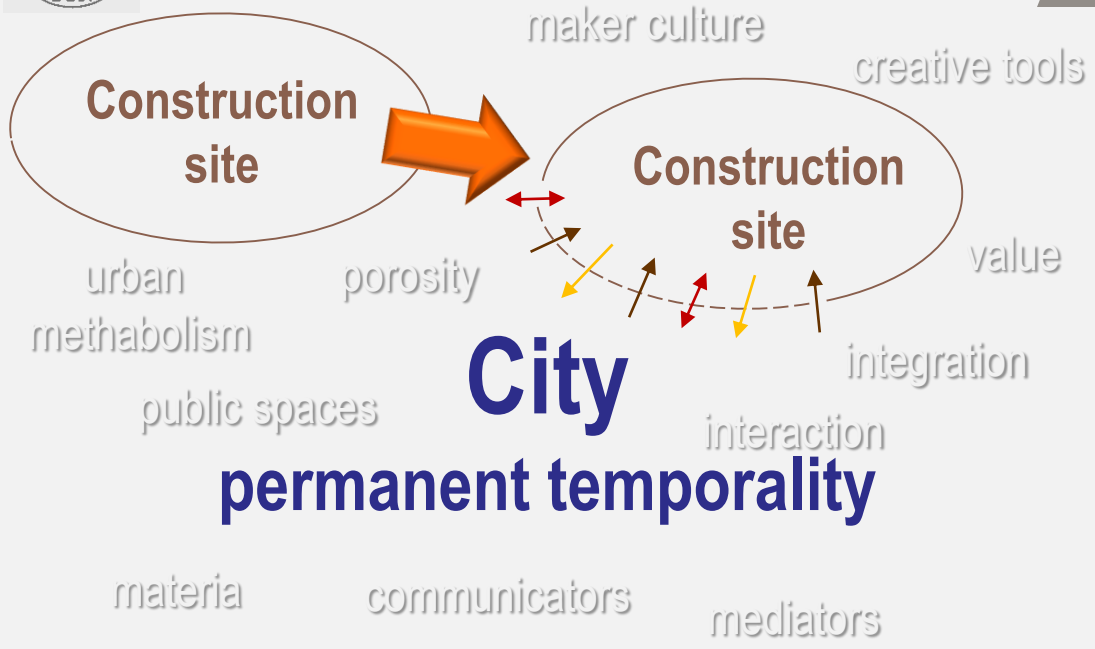
INTEGRAZIONI VERDE

INFOBOX



“There is an unusual place in the city where the art is open to everyone ... and it is not museum or gallery. It is a building site”

Art and lighting on Tokyo, J A P A N

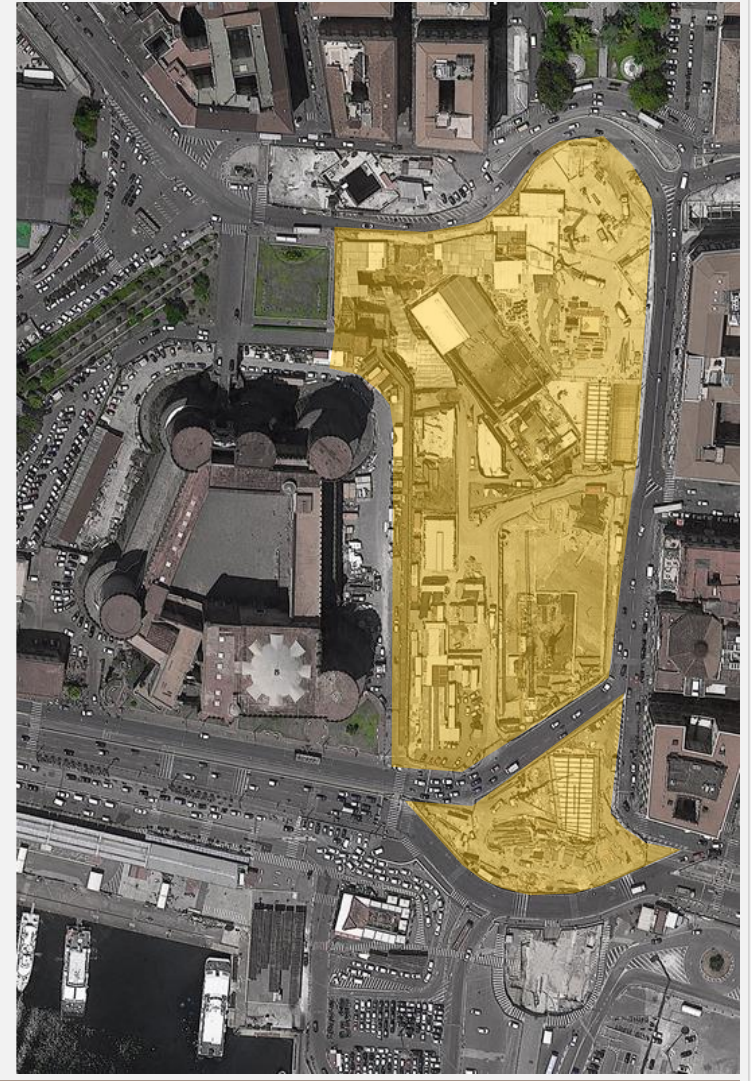
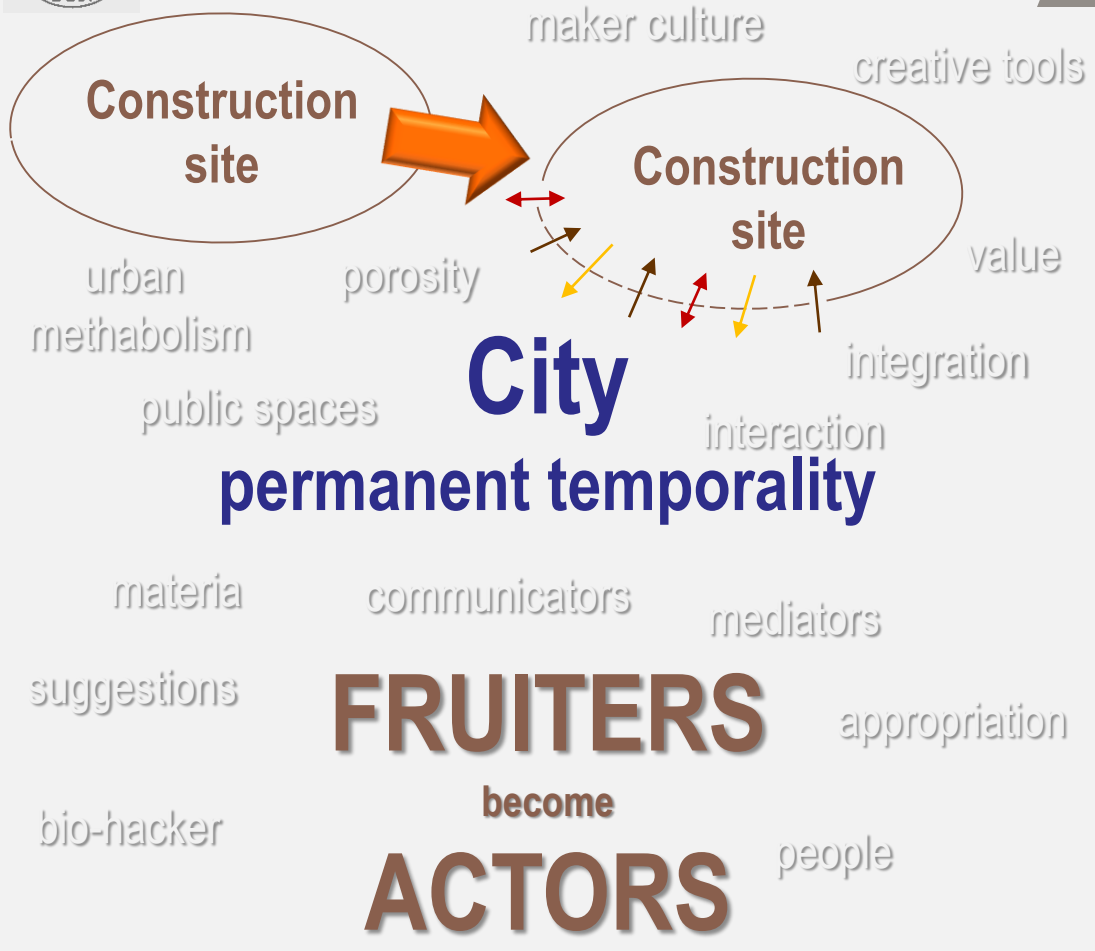


Eva Verberne



Interfere in the daily lives of people ... surprise ... intrigue.
 The construction site, as an unusual element, will appear in the city in different places and in different ways, and will attract attention, over and over again.

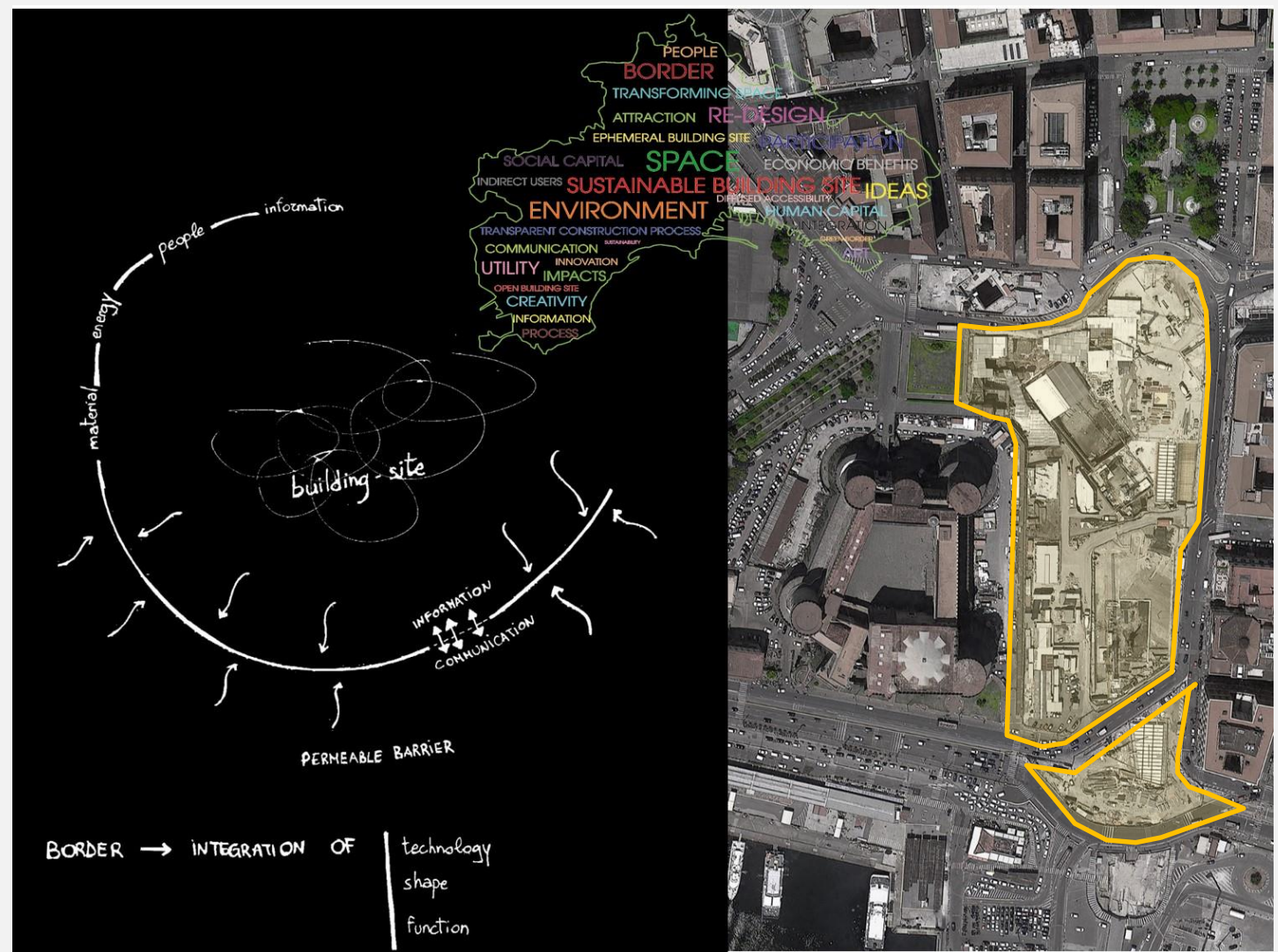
To give people a space for interpretation, to know, to think, to act, to interact. It 'an invitation to think about your city and its future scenario



evaluation of the communicative and participatory potentiality of the construction site

Managing the frontier of urban construction site

The case study of Municipio square in Naples is significant for the creative potentialities and the different typologies of impacts on the urban system of this complex city.



Naples, construction site of Municipio Square







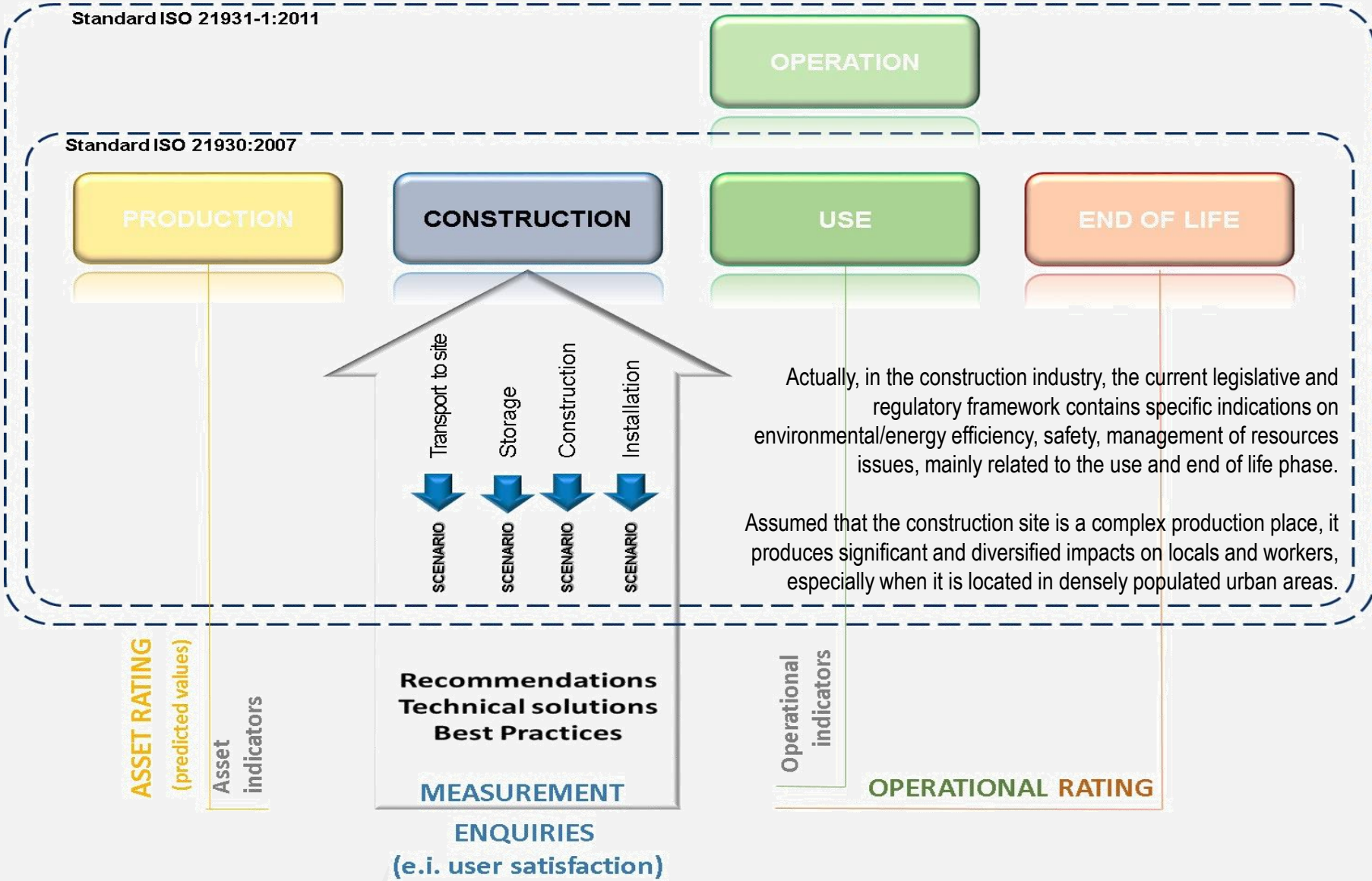












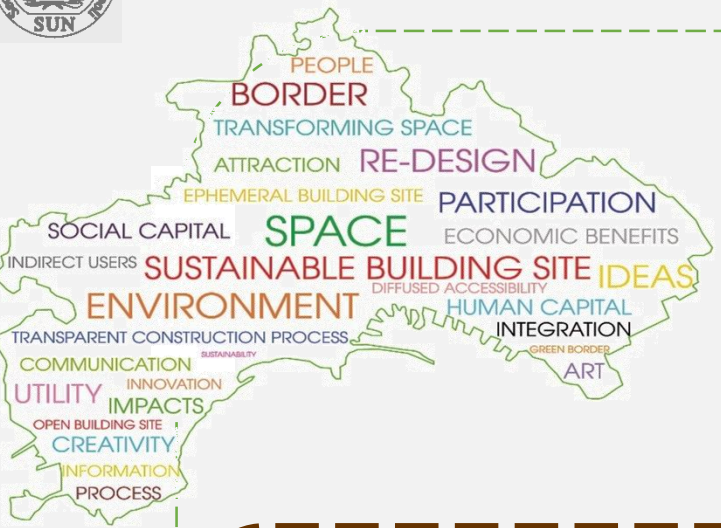
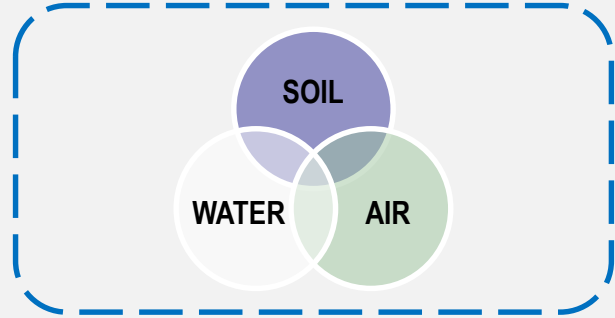
Significant environmental aspects

UNI EN ISO 14001:2004

Environmental aspect: element of the activities or products or an organization (3.16) services that can interact with the environment (3.5).

A significant environmental aspect is an environmental aspect that has or can have a significant environmental impact (3.7).

Environmental receptors



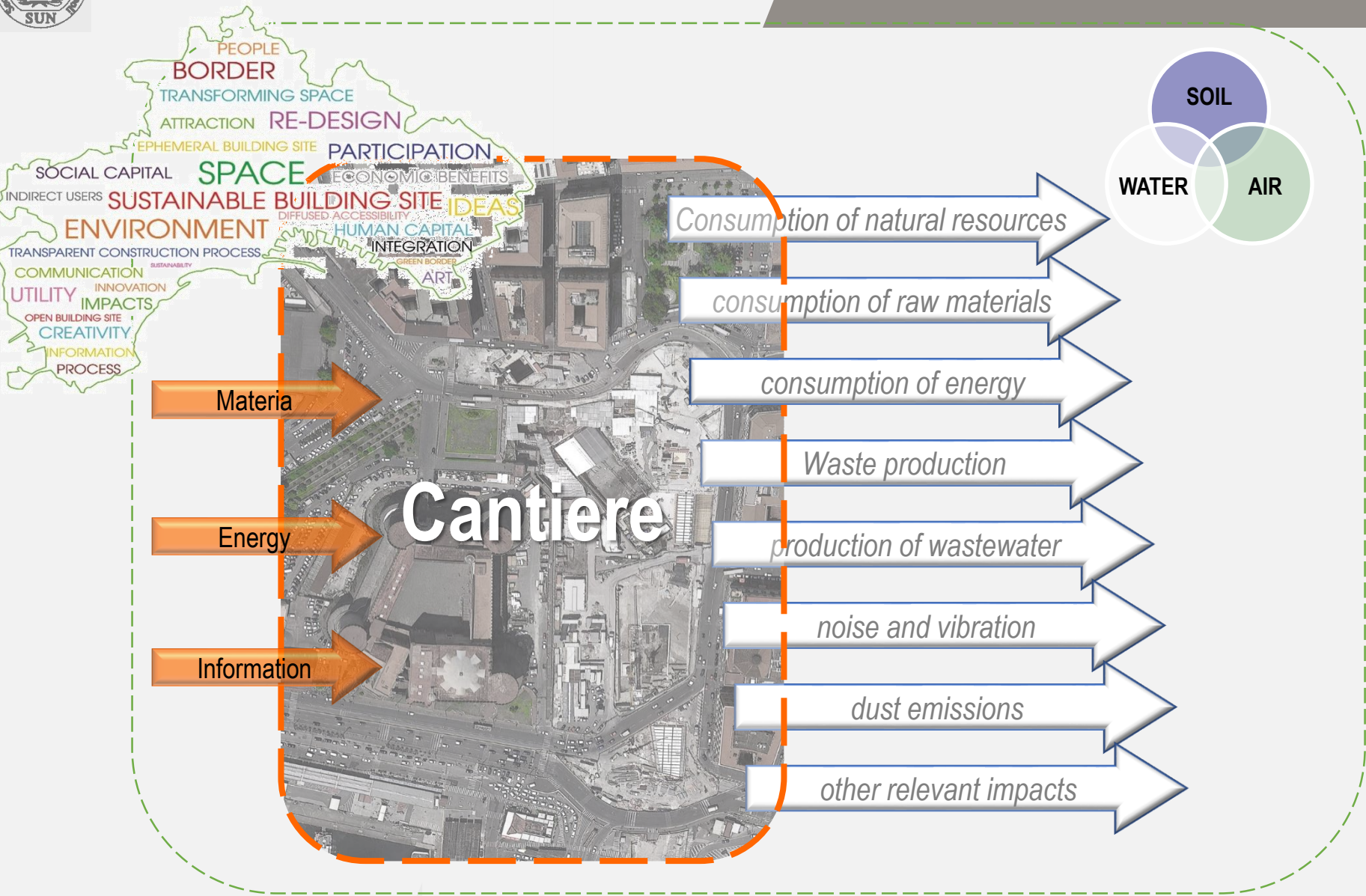
Impact categories

- A Water
- B Energy
- C Waste
- D Society
- E Green

INDICATORS GRID

Anthropic System	Workers (workers and technicians of the construction site) Citizens living in the neighboring areas Citizens with place of work next to the construction site Tourists
Urban System	Pedestrian Mobility Vehicular Mobility Services Other ...

Social Receptors



ENVIRONMENTAL, SOCIAL and ECONOMICAL IMPACTS

IMPACT CATEGORIES	RELEVANT ASPECTS	AREAS/WORKS OF CONSTRUCTION SITE																
		Soil temporary occupation	Evacuation and demollion	cutting of vegetation	Earthworks	sounding	Land treatment	area fence	service tracks and transit of vehicles and machinery	Buildings and temporary facilities for the workers	Cargo handling materials	Scaffolding and temporary works	Service plants	Construction site Machinery	Processing areas	Storage areas of inert and building materials	Storage areas for waste materials	Dismantlement of the c.s.
A.1	WATER FOR PRODUCTIVE USE																	
A.1.1	processing												X					
A.1.2	working												X					
A.1.3	washing	X	X	X	X	X	X								X			X
A.2	CIVIL WASTEWATER									X		X						
A.3	CONTAMINATED DRAIN WATER	X	X	X	X		X				X				X	X	X	X
B1	NO-RENEWABLE PRIMARY ENERGY (factor to minimize)																	
B1.1	Illumination								X	X	X		X		X	X	X	
B1.2	Heating									X								
B1.3	Cooling									X								
B1.4	Hot water production									X								
B1.5	specific machines		X	X	X						X			X				
B2	RENEWABLE PRIMARY ENERGY (factor to maximize)																	
B2.1	Illumination								X	X	X		X		X	X		
B2.2	Heating									X								
B2.3	Cooling									X								
B2.4	Hot water production									X								
B2.5	specific machines		X	X	X						X			X				
C1	WASTE PRODUCTION		X	X	X	X				X		X			X			X
C2	WASTE STORAGE		X	X											X		X	
C3	WASTE TRANSPORT TO DISPOSAL		X	X											X		X	
C4	RIUSE/RECYCLE		X	X											X		X	
D1	GREEN			X					X									
D1.1	pre-existent																	
D1.2	transitory	X					X	X										
D1.3	design						X											X

The management plan of the Great Project Pompeii



1. WORKS PLAN
2. KNOWLEDGEPLAN
3. FRUITION AND COMMUNICATION PLAN
4. SAFETY PLAN
5. CAPACITY BUILDING PLAN

5 levels of Plan

The construction sites of the archaeological area of Pompeii



LEGENDA:

-  DIVIETO DI ACCESSO PER MESSA IN SICUREZZA
-  CANTIERE PUNTUALE/FISSO
-  CANTIERE LINEARE
-  CANTIERE SOSPESO

access ban fences for safety measures







The construction sites of the archaeological area of Pompeii



0 100 200 m

LEGENDA:

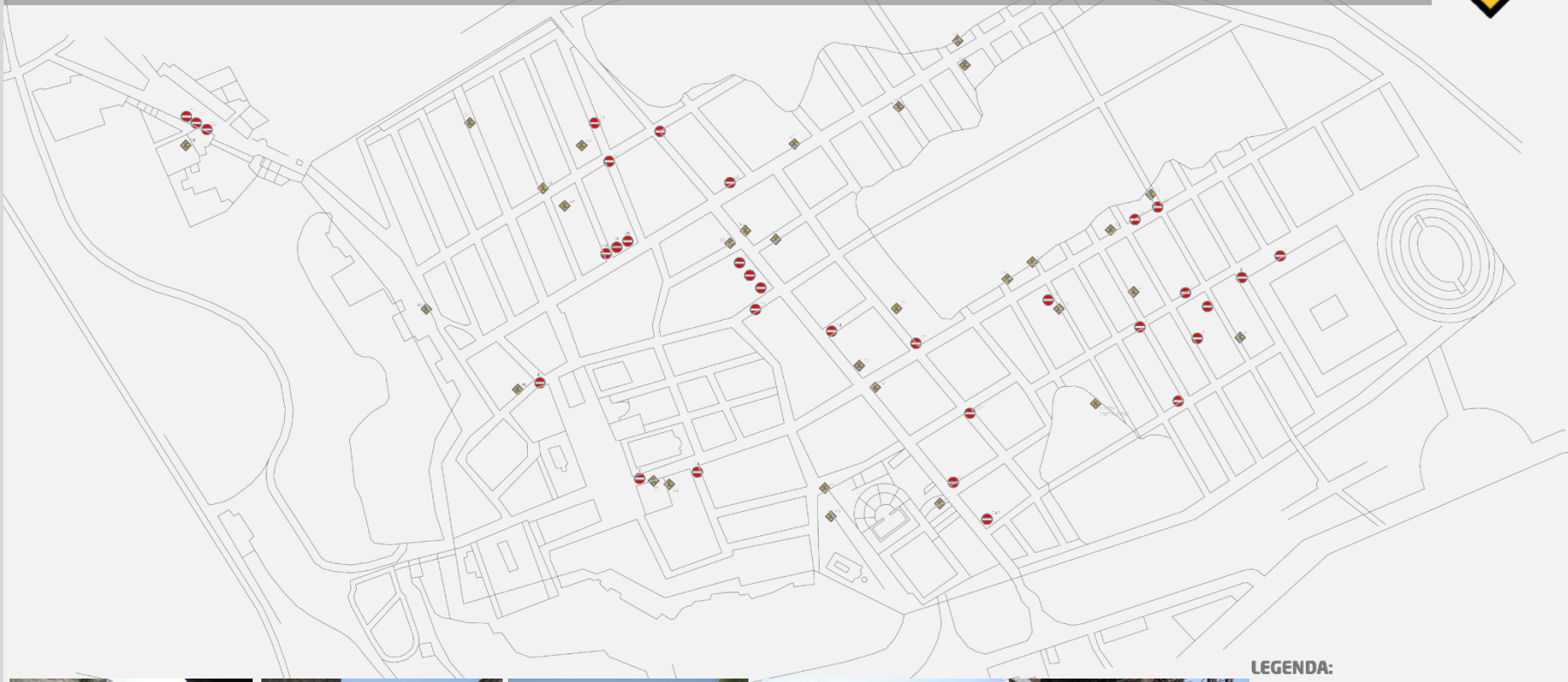
-  DIVIETO DI ACCESSO PER MESSA IN SICUREZZA
-  CANTIERE PUNTUALE/FISSO
-  CANTIERE LINEARE
-  CANTIERE SOSPESO

access ban fences for safety measures





Fences for fixed punctual construction sites



The construction sites of the archaeological area of Pompeii



LEGENDA:

-  DIVIETO DI ACCESSO PER MESSA IN SICUREZZA
-  CANTIERE PUNTUALE/FISSO
-  CANTIERE LINEARE
-  CANTIERE SOSPESO

0 100 200 m

access ban fences for safety measures

Fences for fixed punctual construction sites





Fences for linear construction sites



The construction sites of the archaeological area of Pompeii



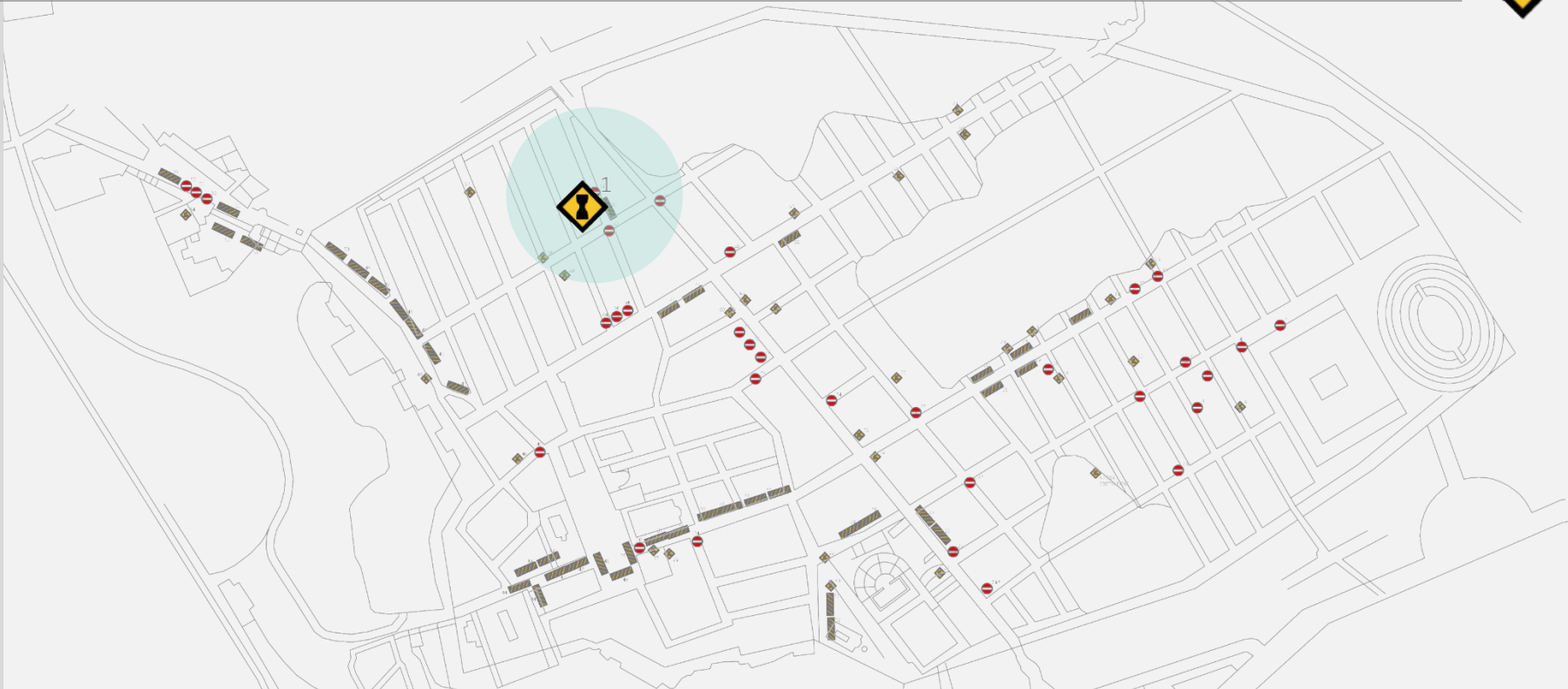
LEGENDA:

-  ¹ DIVIETICO DI ACCESSO PER MISURE DI SICUREZZA
-  ¹ CANTE TERE (PUNTO UALE) FISSO
-  ¹ CANTE TERE LINEARE
-  ¹ CANTE TERE SOSPESO


0 100 200 m

The restoration site of the House of Vettii: a "Paused" construction site

The construction sites of the archaeological area of Pompeii



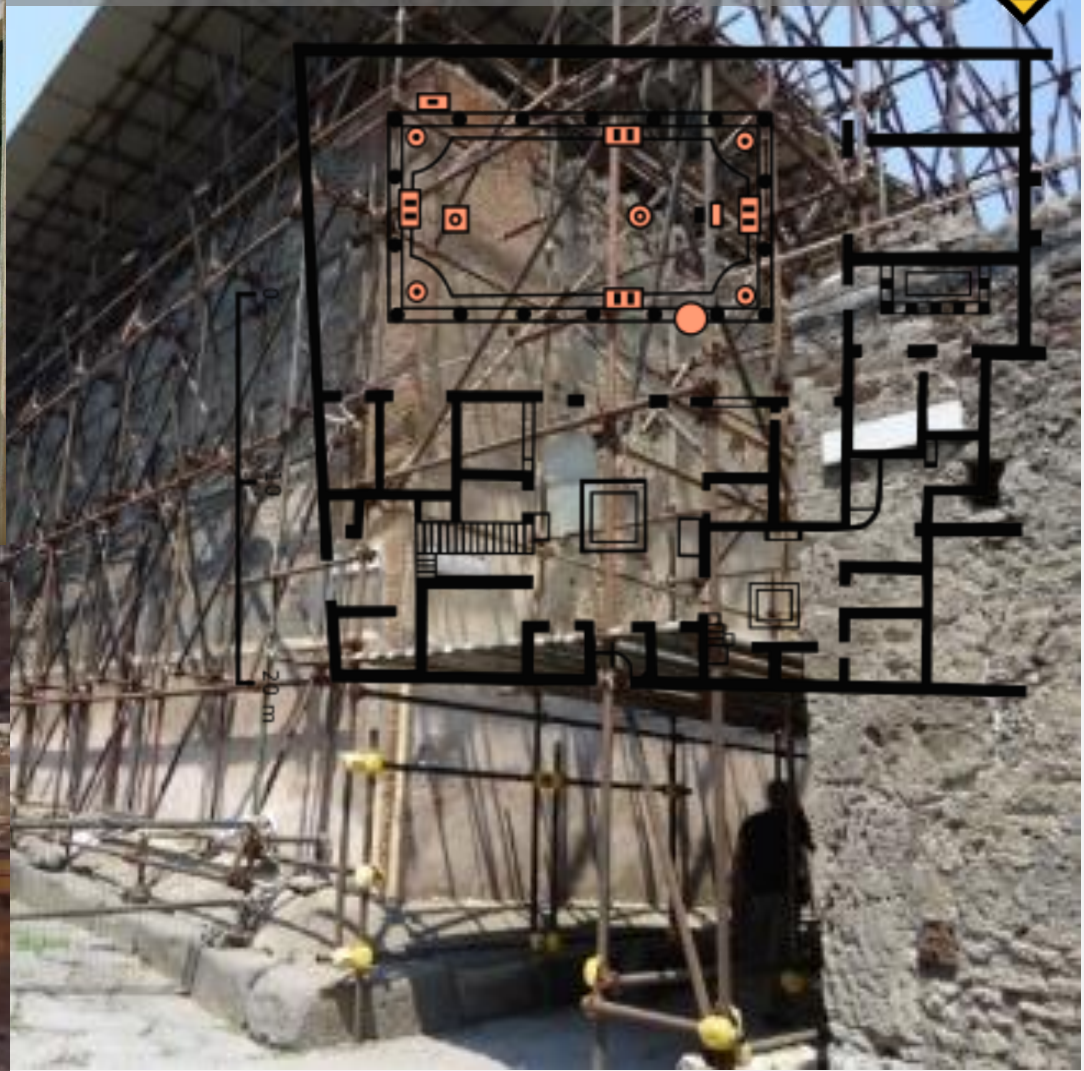
0 100 200 m

- LEGENDA:**
-  DIVIETO DI ACCESSO PER MESSA IN SICUREZZA
 -  CANTIERE PUNTUALE/FISSO
 -  CANTIERE LINEARE
 -  CANTIERE SOSPESO



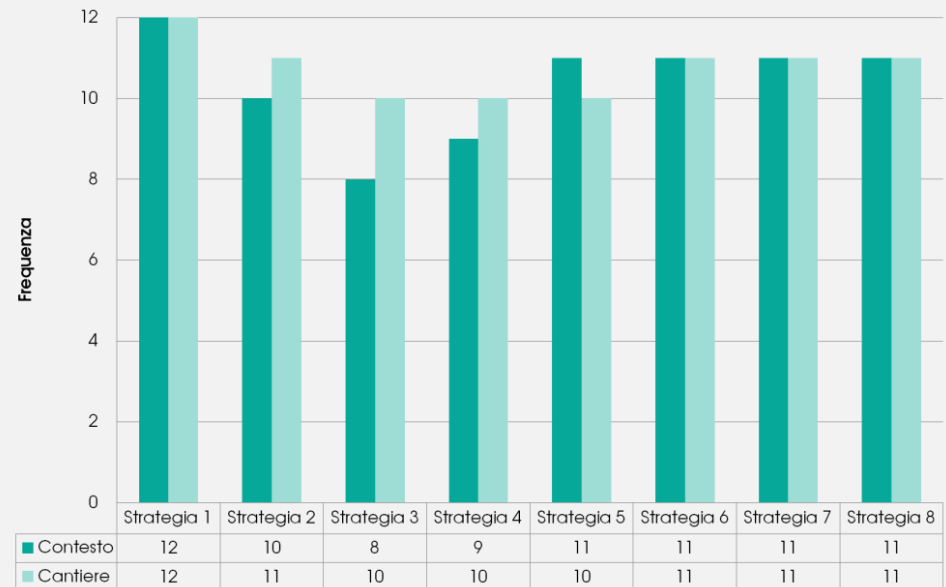
The restoration site of the House of Vettii: a "Paused" construction site

The construction sites of the archaeological area of Pompeii



1. Design fence;
2. Permeable/Transparent fence;
3. Fence as participation tool;
4. Ecological fence;
5. Luminous fence;
6. Multimedia & not interactive fence;
7. Multimedia & interactive fence;
8. Interactive fence integrated with Augmented Reality (AR) systems.

Strategie attuabili per il cantiere della Casa dei Vetti



STRATEGY N. 1 Design fence

The strategy for fence
In the restoration site of the House of Vettii

SPERIMENTAZIONE PROGETTUALE: Il Cantiere di Restauro della Casa dei Vettii
Applicazione Strategia 1_ Installazione Recinzione di design



Prospetto laterale_ Vicolo di Mercurio



Prospetto frontale secondario_ Vicolo dei Vettii



Prospetto frontale principale_ Vicolo dei Vettii

INFORMAZIONI SUI BENI CULTURALI E SUL PROGETTO
Surgeono pannelli (uno o più, secondo l'importanza del cantiere e materiali disponibili) saranno descritte, attraverso disegni di progetto e piccoli blocchi di testo, le caratteristiche principali dell'intervento oggetto del cantiere.
In tutti quei casi in cui l'intervento modifica in modo sostanziale l'ambiente circostante, in termini di paesaggio o di qualificazione dell'ambito circostante, è previsto apposito fondello.
Le caratteristiche di questo aspetto progettuale con illustrazioni e simulazioni fotografiche che mostrano l'opera come si presenterà ai lavori conclusi.
Infine, nel caso di edifici storici monumentali, sono archeologiche, ecc., fornire informazioni di interesse storico, culturale o turistico, relative ai luoghi in prossimità delle aree di cantiere.

Contenuti:
Caratteristiche tecniche del progetto
Modalità esecutive
Altre informazioni inerenti il progetto
Immagini del progetto: disegni, ricostruzioni virtuali, simulazioni fotografiche



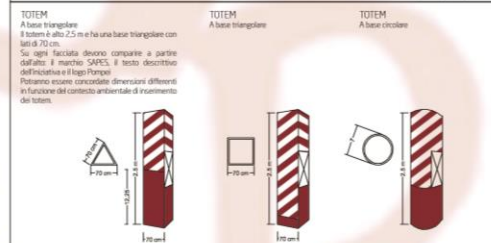
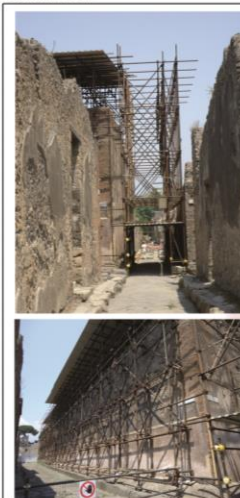
INFORMAZIONE DI LEGGE
Questo pannello riporta tutte le informazioni previste ai sensi di legge.

INFORMAZIONE ISTITUZIONALE
Questo pannello caratterizzerà, sempre, tutte le strutture di recinzione dei cantieri, anche in assenza di altri pannelli informativi.
Spiegherà ai cittadini, attraverso un breve testo, senso e finalità dell'intervista "Grande Progetto Pompei".

Contenuti:
Oggetto del cantiere
Progettisti
Direzione lavori
Società appaltatrici
Importo lavori
Durata del cantiere



RILIEVO FOTOGRAFICO
Stato di fatto



STRATEGY N. 7 Multimedia & interactive fence

- 1st Level: educational information, suitable users to minors;
- 2nd Level : other information on the subject of the intervention;
- 3rd Level : information on the construction site, also suitable for specialist users.



Strumenti di interazione

SENSI



CELLULARI



PALMARI



COMPUTER



SENSORI



Livelli di informazione

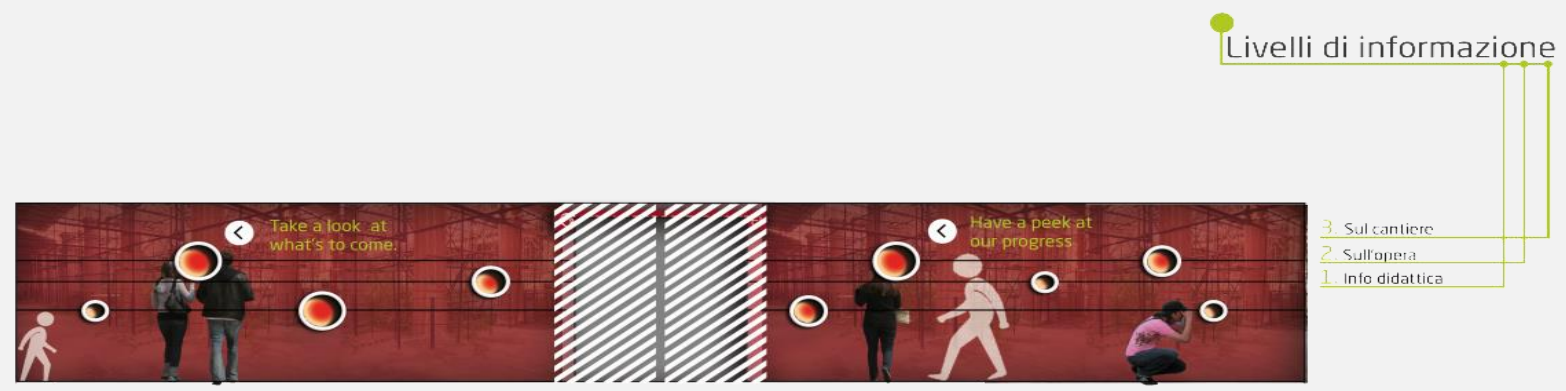


3. Sul cantiere
2. Sull'opera
1. Info didattica

The strategy for fence
In the restoration site of the House of Vettii

ATTUAZIONE STRATEGIA N. 8

Interactive fence integrated with Augmented Reality (AR) systems



- Livelli di informazione
1. Info didattica
 2. Sull'opera
 3. Sul cantiere

Strumenti di interazione



The construction site configures spaces through complex design pathways that occupy a space and a time interpretable as a "transition gap"

Encouraging new forms of management of this public space and inserting it in a system of values is imperative to make sustainable for the community the construction site.

To use the site as an "accelerator" for triggering "urban movement relations" within the city is an

occasion not to be missed.

