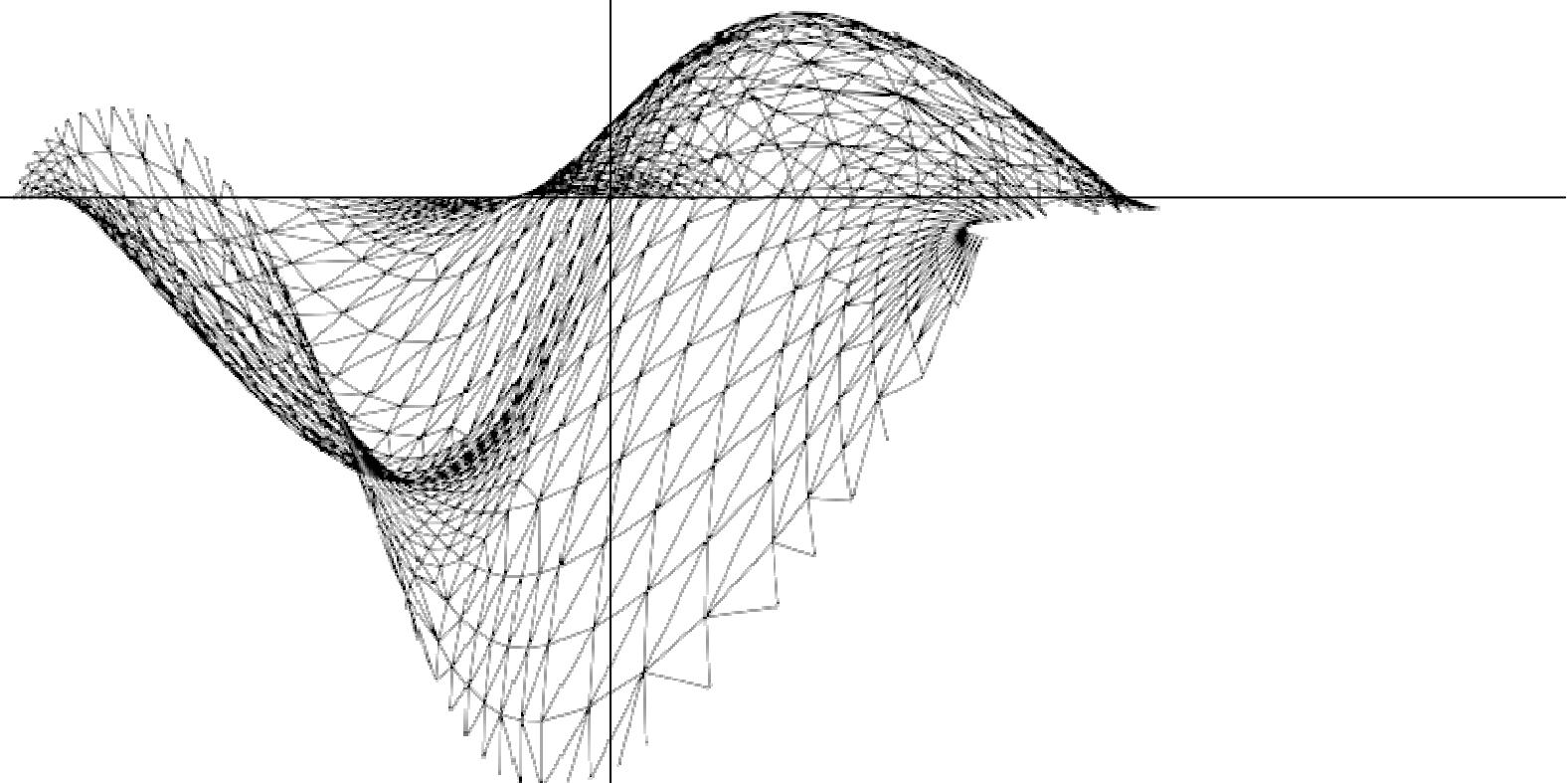


INDEX MESH

Hacking public spaces into common places

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A ***mesh***, made tangible by its located nodes and weaved by their multiple, possible interconnections, is superimposed to a ***city*** map. This technological ***platform*** operates as the real-time interactive medium between the existing ***reality*** of the city and the ephemeral local ***narrations*** by transforming observed information into recorded knowledge and this knowledge into new information.



The intention of our proposal is the creation of a constantly evolving ***space indexer***, for an alternative study of the city: a study that utilizes the potentials of information technology and especially the networked interaction among physical locations. This study of the city leads to the creation of ***nodes***, each one of them ***digital and physical*** at the same time, located and dispersed in the urban tissue, that encourage dynamic interactions in order to reconfigure the existing.

space indexer



now, here and **we**, that is the **time**, the **place**, and the **people** involved.

index
mesh

ad-hoc network of which “all components can all connect to each other via multiple hops and they generally are not mobile”

index mesh

Index mesh works like “**a social indexicality** that points to, and help create social identity” , but only through social action that takes place in the city among different populations for a common purpose.

Index mesh operates, one may say, like a density indicator, or even better like a **temporal localization of activities**.

Index mesh with its interactive constructions – nodes forces co-presence in an emergent network, and finally forms «***the material construction of time simultaneity***» ***within a city***. The nodes are “entities with a definite identity and yet not defined by an essence but by a process of emergence”.

index mesh

“cities and nation-states must be viewed as physical locales in which a variety of differently scaled social actors carry on their day-to-day activities. A city, for example, possesses not only a physical infrastructure and a given geographical setting, but it also houses a diverse population of persons; a population of interpersonal networks, some dense and well localized, others dispersed and even shared with other cities” M. DeLanda

index_mesh_server DClient DServer Leksei



```
class Leksei {
    public int x;
    public int y;
    public String str;

    Leksei( int x, int y, String str )
    {
        this.x = x;
        this.y = y;
        this.str = str;
    }
}
```

```
void draw( )
{
    text( str, x, y )
}
```

The software and hardware entity-interface is constructed in open source logic. In spite of accepting the given form and software interface as a completed entity, protected from fitted systems that need periodical regulation, the open logic calls for a constant vigilance of the users.

**open
source**

from a central remote authority to dispersed-collective actions of temporarily **common intention.**

index_mesh_server | Processing 0135 Beta

```
DClient c1 = (DClient)vector.get( 1 );
line( c1.x + c1.dx / 2, c1.y1 + c1.dy / 2, c2.x1 + c2.dx / 2, c2.y1 + c2.dy / 2 );
}

for ( Enumeration e = vector.elements(); e.hasMoreElements(); )
{
    DClient client = (DClient)e.nextElement();
    if ( client.getDone() ) active.remove( client );
}

prism( 255, 0, 0 );
for ( i = 0; i < active.size(); i++ )
{
    for ( j = i + 1; j < active.size(); j++ )
    {
        DClient c1 = (DClient)active.get( i );
        DClient c2 = (DClient)active.get( j );
        line( c1.x + c1.dx / 2, c1.y1 + c1.dy / 2, c2.x1 + c2.dx / 2, c2.y1 + c2.dy / 2 );
    }
}
active.clear();

for ( Enumeration e = vector.elements(); e.hasMoreElements(); )
{
    DClient client = (DClient)e.nextElement();
    client.clear();
}
```

index_mesh_server | Processing 0135 Beta

```
import java.util.*;
import java.io.*;

class DServer implements Runnable
{
    protected ServerSocket server = null;
    public DServer( int port )
    {
        try {
            server = new ServerSocket( port );
        } catch ( Exception e ) {
            throw new RuntimeException( e.getMessage() );
        }
    }

    public void run()
    {
        boolean found;
        do {
            try {
                Socket sock = server.accept();
                found = false;
                for ( Enumeration e = vector.elements(); e.hasMoreElements(); )
                {
                    DClient client = (DClient)e.nextElement();
                    if ( client.acceptedAddress == null || client.acceptedAddress.equals( sock.getInetAddress() ) )

```

index_mesh_server | Processing 0135 Beta

```
class Leksei
{
    public int x;
    public int y;
    public String str;

    Leksei( int x, int y, String str )
    {
        this.x = x;
        this.y = y;
        this.str = str;
    }

    void draw()
    {
        text( str, x, y );
    }
}
```

We have chosen the programming language **Processing** in order to create the initial version of the software of the index mesh.

"Processing is a programming language, development environment, and online community that since 2001 has promoted software literacy within the visual arts. Initially created to serve as a software sketchbook and to teach fundamentals of computer programming within a visual context."

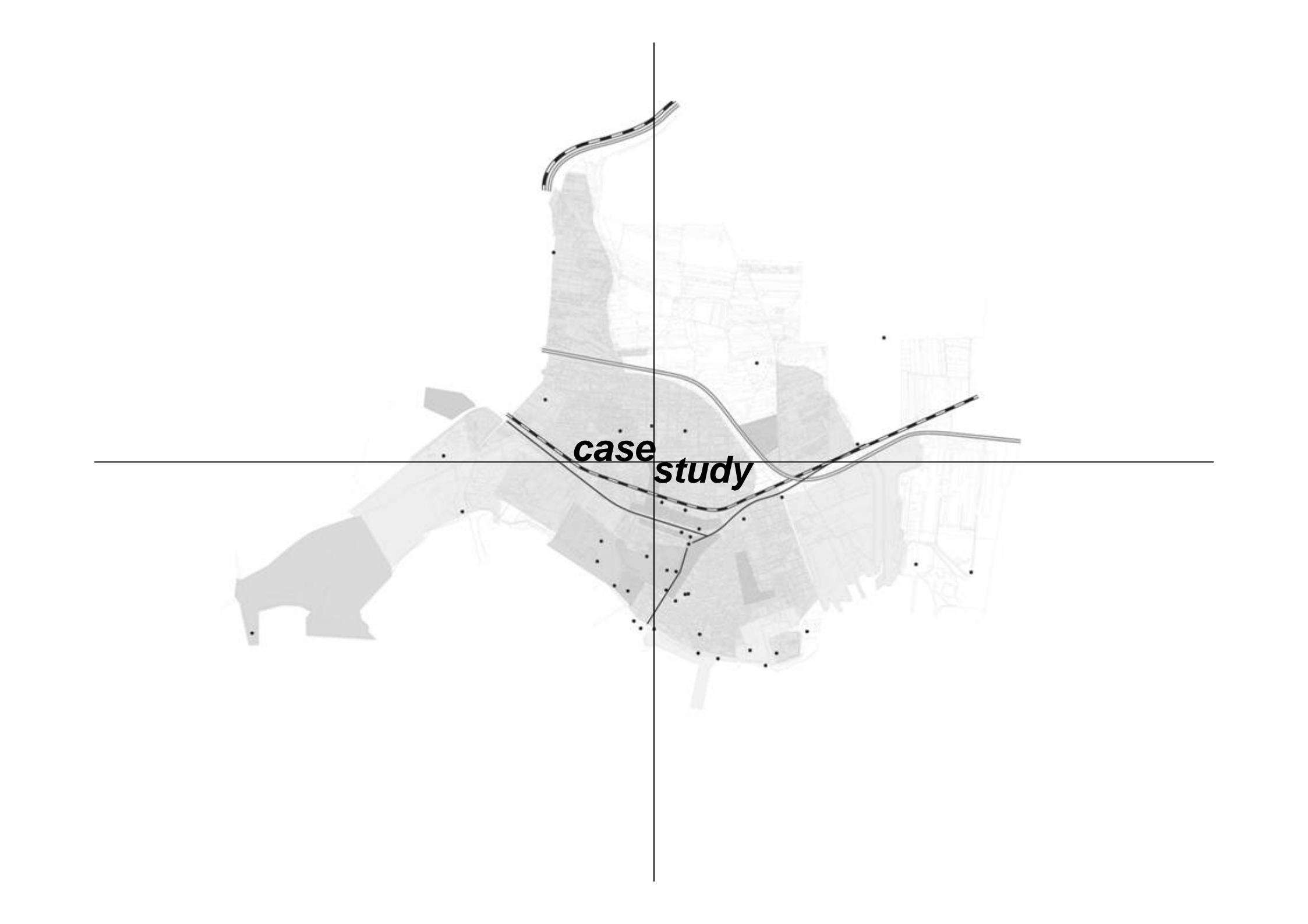
**open
source**

```
import java.io.*;
import java.net.*;
import java.util.*;

class DClient implements Runnable {
    protected Vector vector = null;
    protected Vector words = null;
    protected Socket sock = null;
    protected InputStreamReader reader = null;
    protected int state = 0;
    protected InetAddress addr = null;

    protected color mycol;
    public int xl, yl, dx, dy;
    protected String ip_address;

    public DClient( Vector v, String ip_address, int xl, int yl, int dx, int dy, color mycol )
    {
```



case
study

The background of the image is a grayscale map of a city, showing buildings and roads. A vertical black line runs down the center of the map. A horizontal black line intersects the vertical line at its midpoint. The word "case" is written in a bold, sans-serif font above the intersection, and the word "study" is written in a italicized, sans-serif font below it.

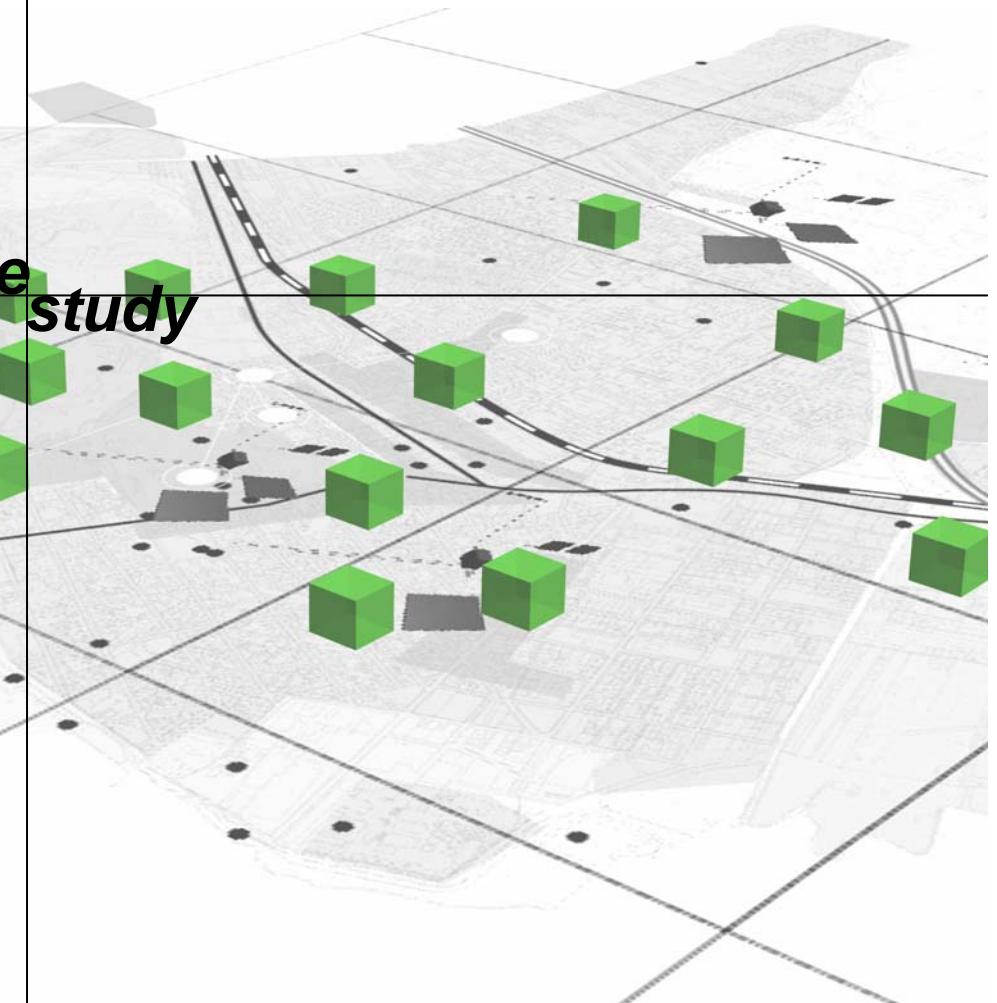
All the above notions applied in a case study for a workshop that took place in Easa 2007 meeting in the city of Elefsina in Greece.

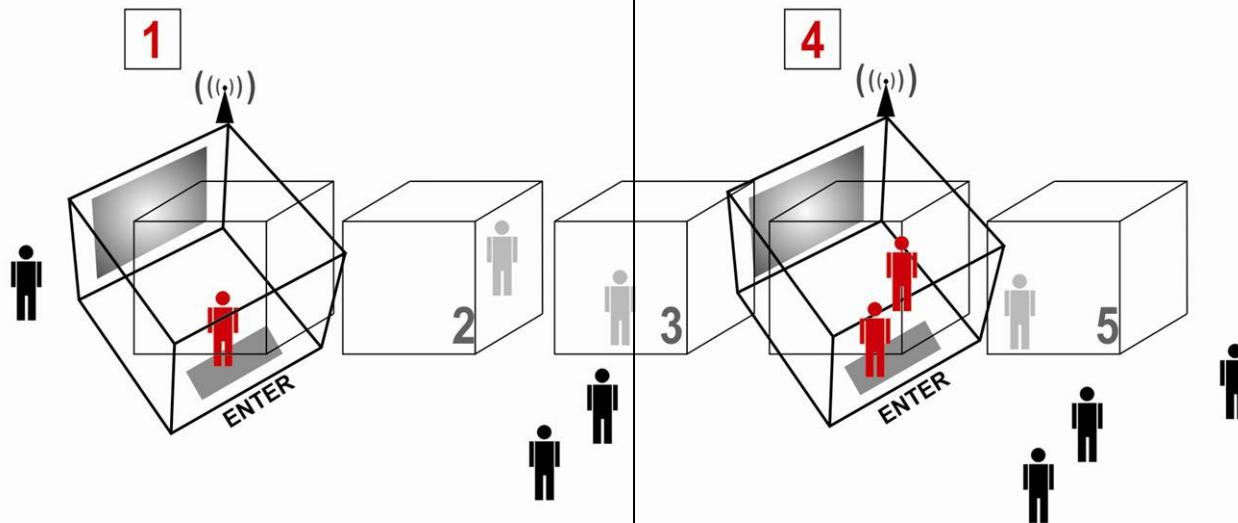
Elefsina has a population of 25950 inhabitants and an area of 18.5 square kilometers.

The city is composed by multiple layers of information (historical, political, social, etc.).

To work in a urban tissue means to deal with non predetermined and ***dynamic behavior*** of individuals in space.

case
study

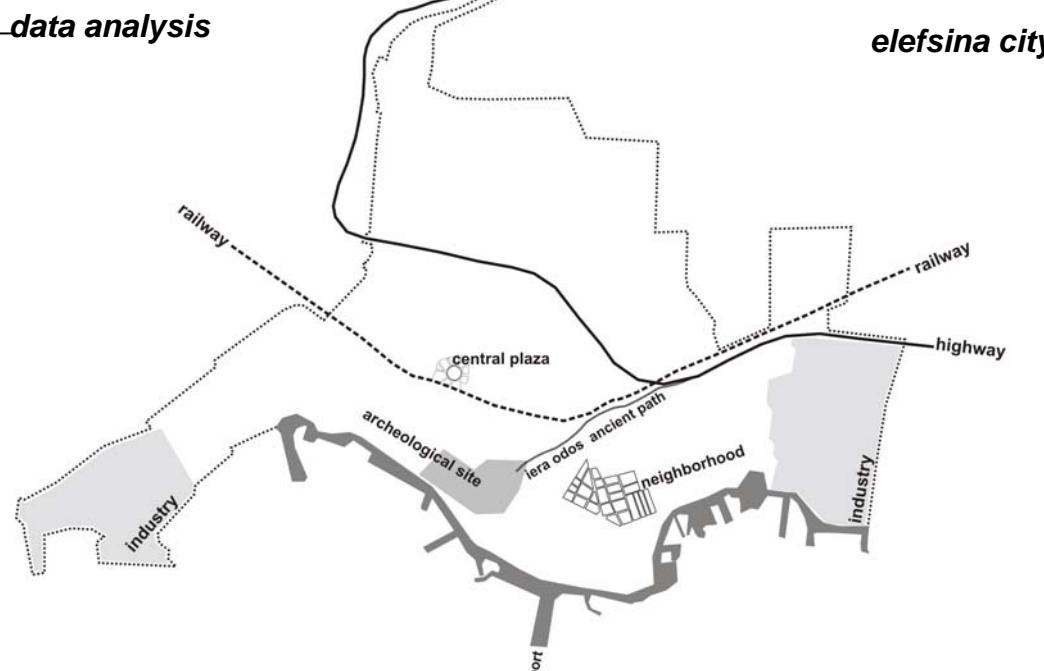




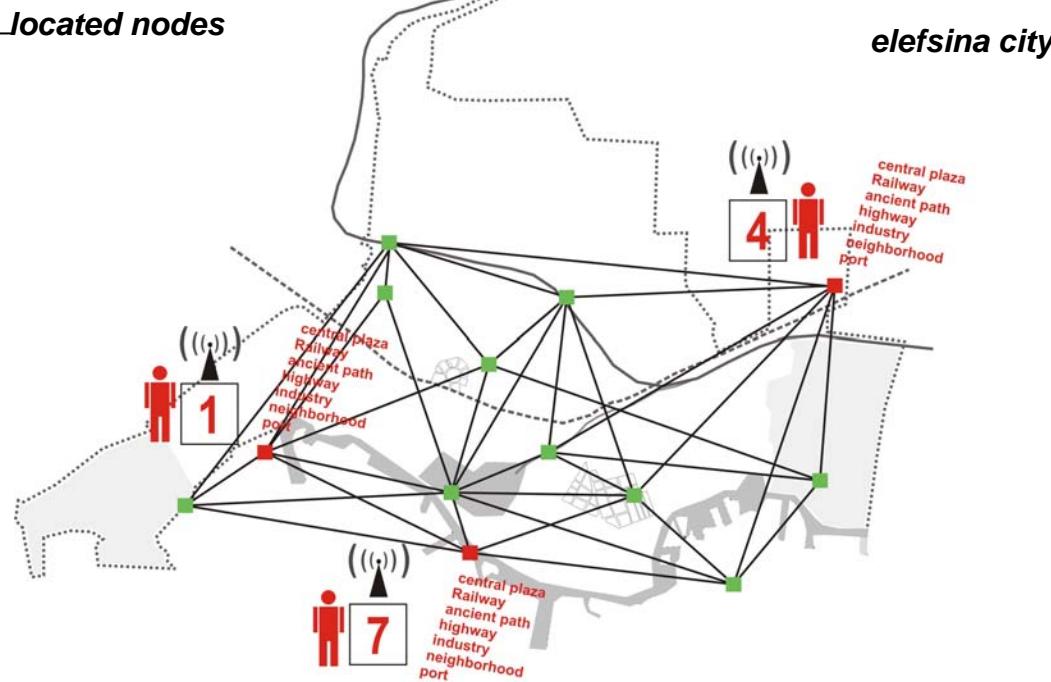
The physical constructions, each time ***intensively located***, of common use where a human activity is developed, host five people at minimum and is perceived as a sign in the urban environment.

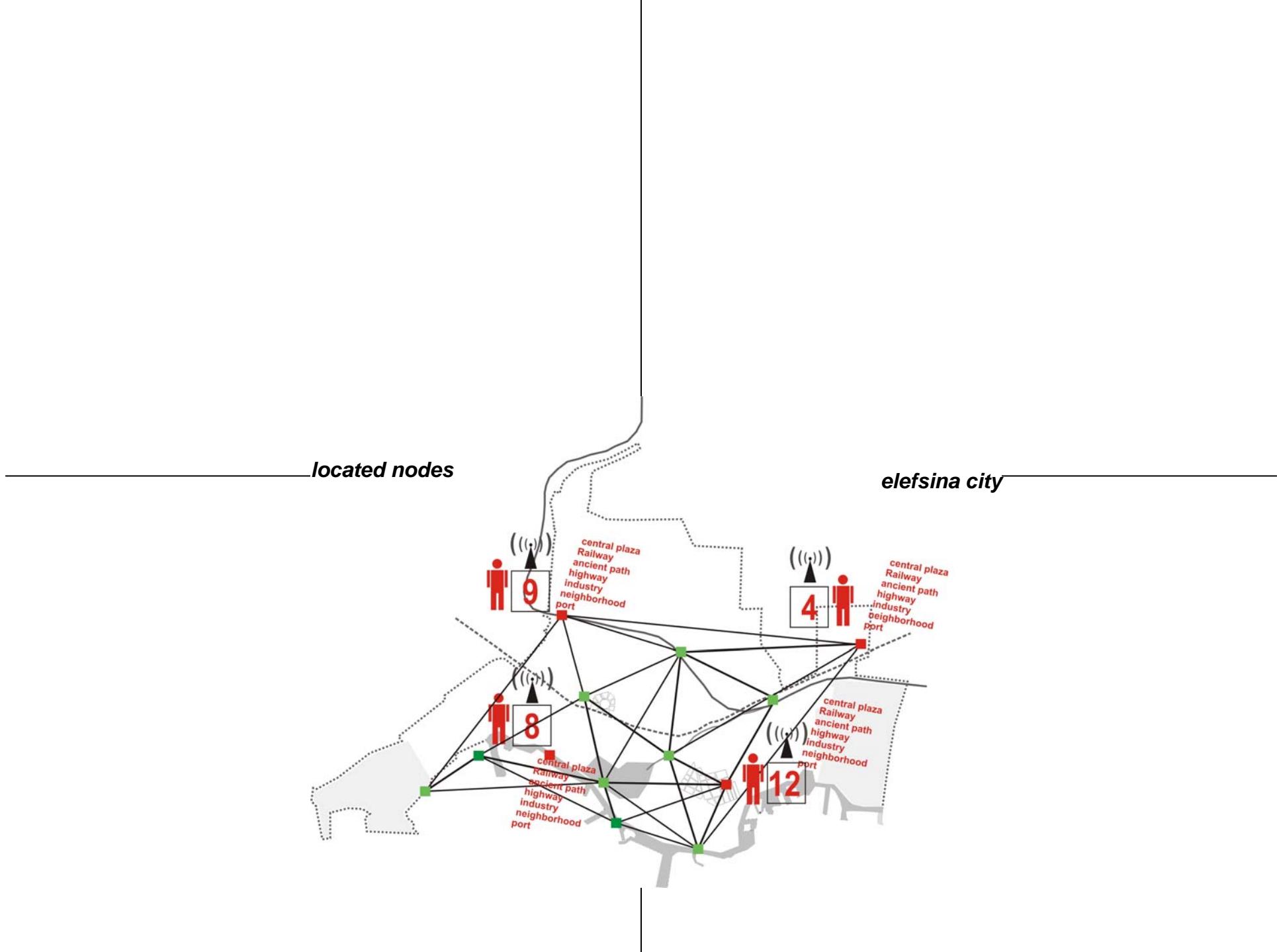
Workshop participants are called to design the constructions-nodes.
Each team needs to present the analysis of the selected city spots and the located interactions along with possible proposed ones.
Each final structure will include an interactive technological platform.

Based on the data analysis each team creates a remote structure, an object of reference that ***extrudes the perceived reality towards one or multiple enriched possibilities***. The overlapping of these structures with the pre-existing, along with the actions from their interconnection deforms the mesh and indexes the city of Elefsina in an unexpected way.

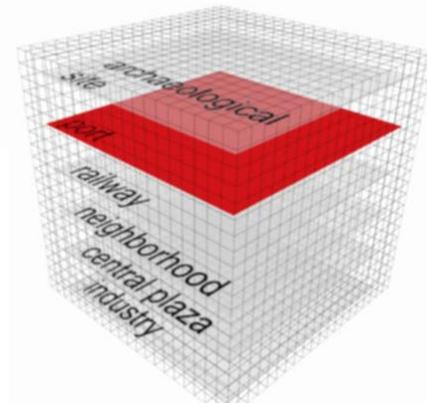
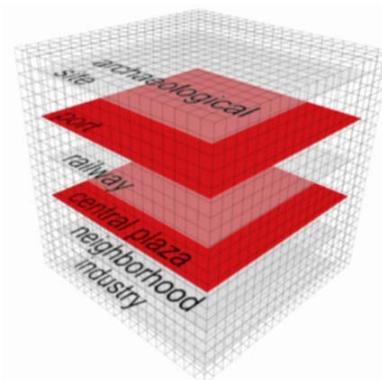
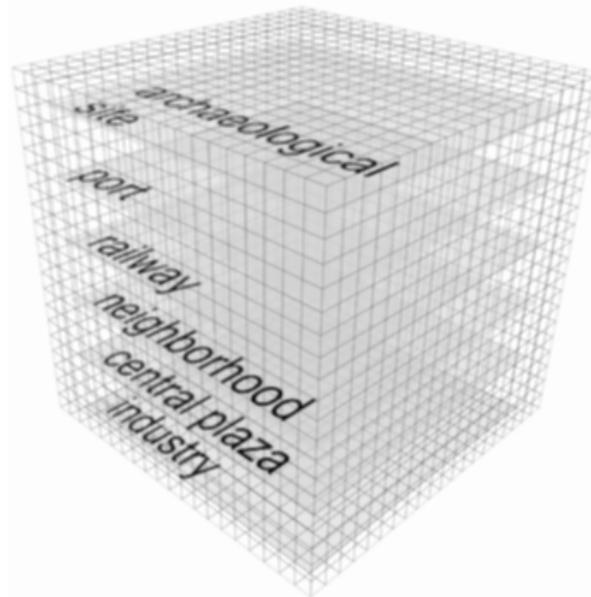


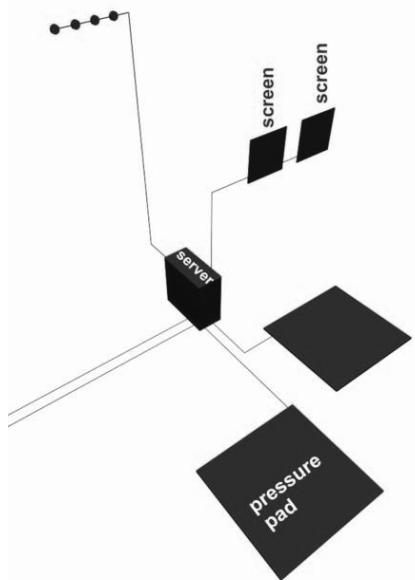
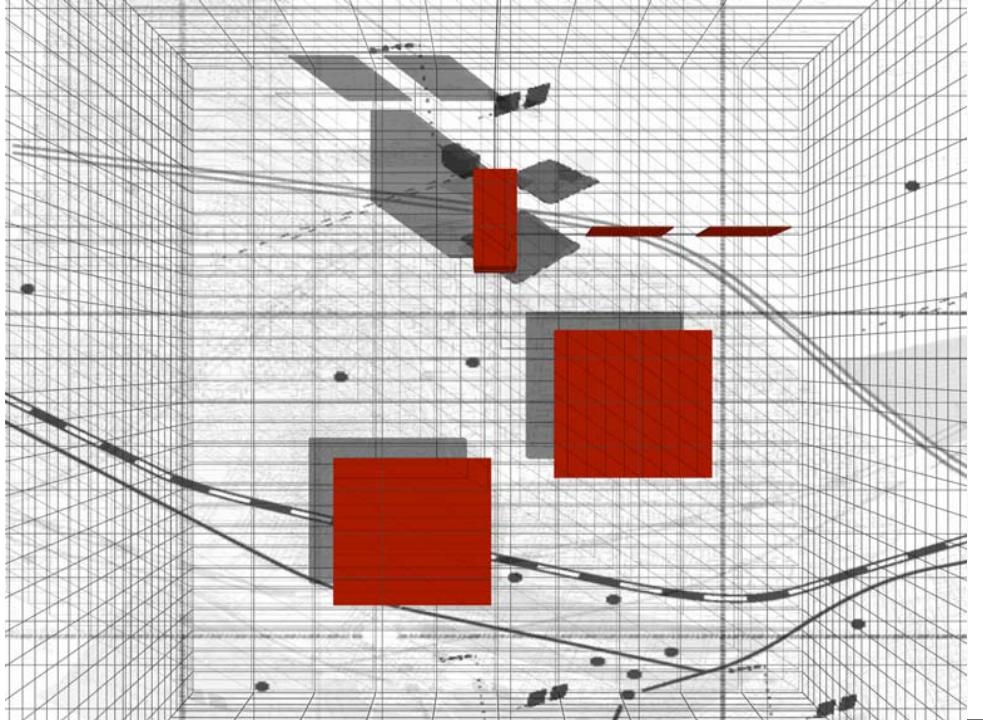
The analysis of the selected areas includes any form of data selection that raises participants interest. From public actions, everyday activities or local customs to embedded functional networks, historical objects, visual or subjective perception. An important component of the project is the presentation of the interaction of events in the local area each node occupies and the possible connections among the nodes themselves.





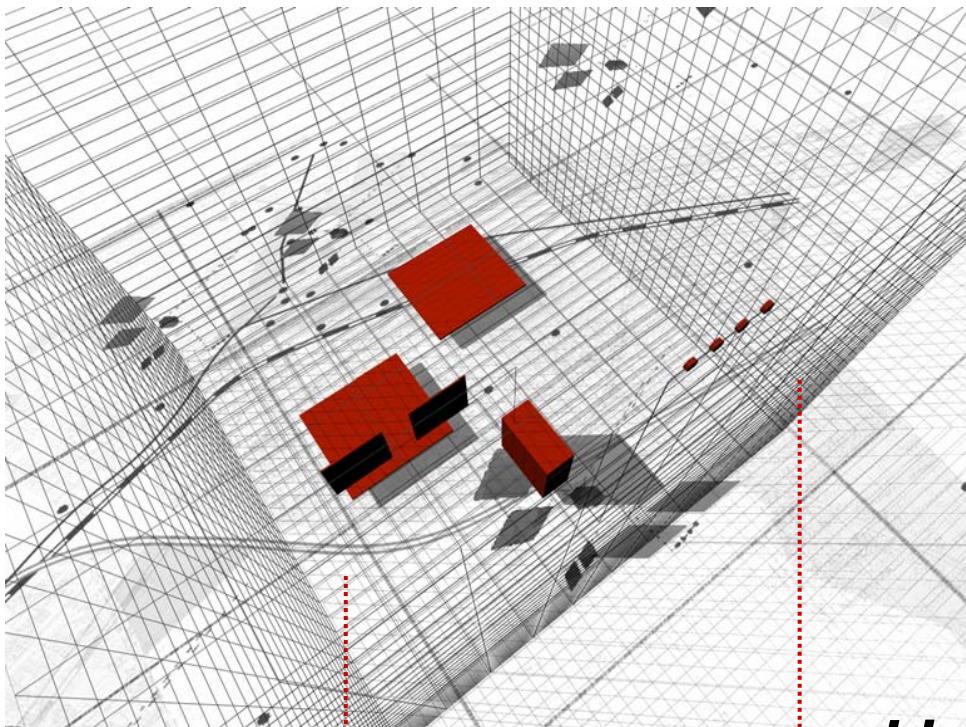
An important component of the project is the presentation of the interaction of events in the local area each node occupies and the possible connections among the nodes themselves



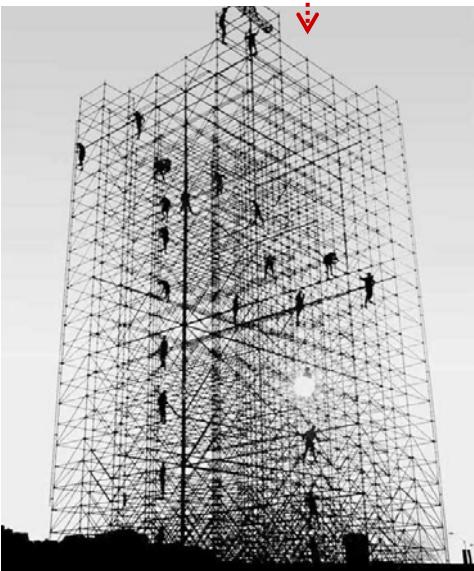
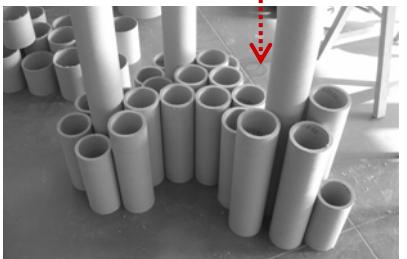


Each construction will include a series of sensors, actuators, software and materials for example :

pressure pad (sensor) that triggers a projection of linear or non-linear frames which completes the hard copy presentation.

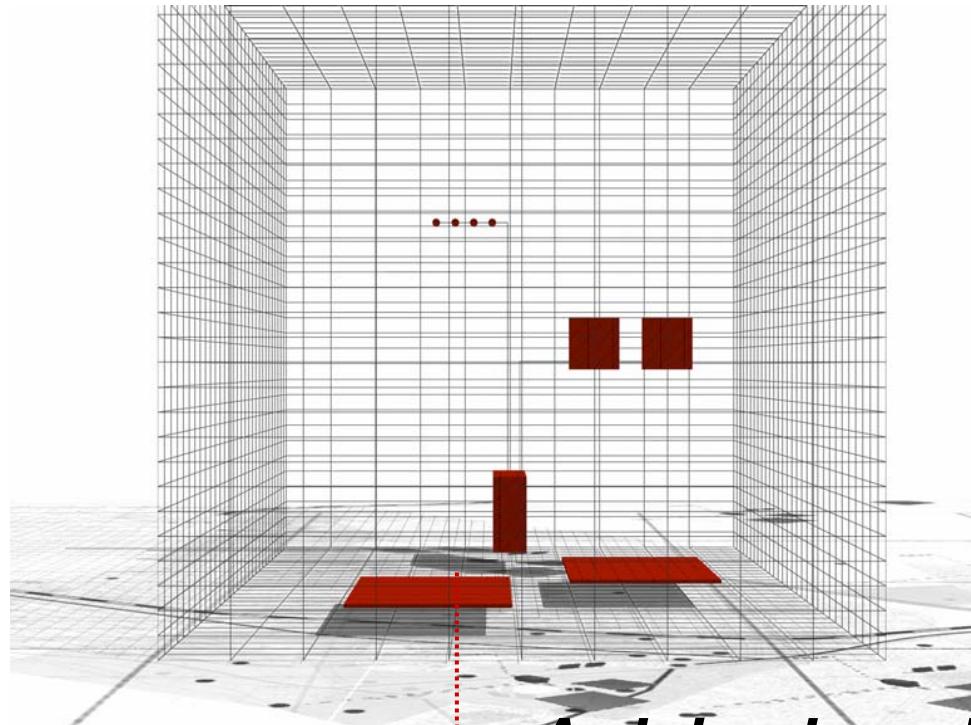


skin

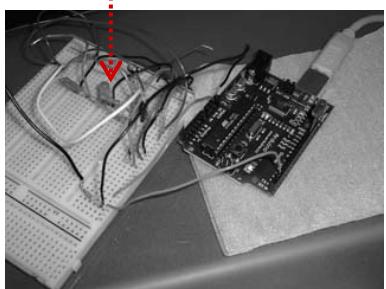


Each construction will include a series of sensors, actuators, software and materials for example :

The material to create the "skin" of the construction. This could vary from plain paper, vinyl, plywood, fabric, or any material



Arduino board



Each construction will include a series of sensors, actuators, software and materials for example :

A computer program written in Processing and an electronic Arduino Board that function as the interaction medium.

How to design an interface that is capable to be transformed according to the desires and the needs of people and communities that each time use it?

open questions ?

How to manage possible conflicts among different networks?

open questions ?

How to manage the possibility of confronting a new unexpected situation other than the initial one?

c open questions ?

c open questions ?

Finally the main question is how to think of an object, of a space, of a construction, of an activity, and at the same time design them while accepting the redefinition of their limits and constraints.

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- MVRDV: http://www.mvrdv.nl/_v2/
- ONL: <http://www.oosterhuis.nl/quickstart/index.php>
- Processing: <http://www.processing.org/>
- Transstudio: <http://www.transstudio.com/>