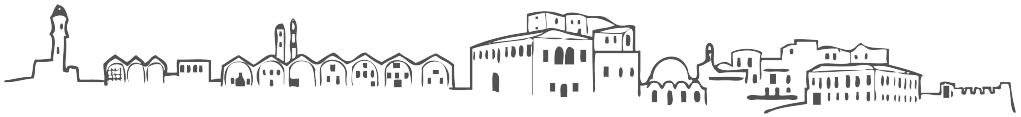
Πολυτεχνείο Κρήτης
Σχολή Αρχιτεκτόνων Μηχανικών
Χανιά 2017

Εκπόνηση : Τέλιου Μαρινέλα (Telo Marinela)
Επιβλέπων καθηγητής: Ουγγρίνης Κωνσταντίνος-Αλκέτας

Διπλωματική εργασία

"Ψηφιακές εφαρμογές, κοινωνικά μέσα και επαυξημένη πραγματικότητα με παράδειγμα την πόλη των Χανίων."



Η Διπλωματική εργασία πραγματεύεται την χρήση ψηφιακών μέσων και εργαλείων σε συνδυασμό με τα κοινωνικά Μέσα (Social Media) και την τεχνολογία της επαυξημένη πραγματικότητας (Augmented reality) στον δημόσιο χώρο. Λαμβάνοντας υπόψη τα πορίσματα της ερευνητικής εργασίας που προηγήθηκε προτείνονται εφαρμογές για την συνύπαρξη του φυσικού και ψηφιακού επιπέδου στο δημόσιο χώρο της πόλης. Οι ψηφιακές εφαρμογές αναπτύσσονται σε τρία επίπεδα και κλίμακες με παράδειγμα την πόλη των Χανίων.Μέσα από τα τρία αυτά επίπεδα η εργασία εξερευνά διάφορους τρόπους οι οποίοι φέρνουν τον ψηφιακό χώρο σε άμεση επαφή και συνδιαλλαγή με τον φυσικό χώρο της πόλης μέσα από τις ενέργειες και τα χαρακτηριστικά του χρήστη - πολίτη.

Στο πρώτο επίπεδο ο χρήστης-πολίτης γίνεται αντιληπτός ως μέλος του ευρύτερου πληθυσμού της πόλης. Ο ευρύτερος πληθυσμός που δραστηριοποιείται στην πόλη, σε συνδυασμό με το φυσικό του περιβάλλον, δημιουργεί μια χαρακτηριστική ατμόσφαιρα. Στόχος της επέμβασης είναι η ατμόσφαιρα που δημιουργείτε από τις δράσεις των πολιτών να εκφράζεται πίσω στην πόλη. Η έκφραση της ατμόσφαιρας πραγματοποιείται με την χρήση ψηφιακών τεχνολογιών οι οποίες εφαρμόζουν την χρωματική παλέτα στο δίκτυο φωτισμού της πόλης μέσα από ένα σύστημα συνεχούς ανατροφοδότησης.

Στο δεύτερο επίπεδο ο χρήστης- πολίτης γίνεται αντιληπτός ως μέλος μιας πολιτιστικής ομάδας. Στόχος της επέμβασης είναι η ενίσχυση του πολιτιστικού δικτύου της πόλης παρέχοντας στους κόμβους του δικτύου τις απαραίτητες υποδομές (τόσο ψηφιακές όσο και υλικές) για την υποστήριξη πολιτιστικών δρώμενων Έτσι σε επιλεγμένα σημεία του πολιτιστικού δικτύου προτείνονται επεμβάσεις χωρικής και ψηφιακής φύσεως οι οποίες χρησιμοποιούνται από τις πολιτιστικές ομάδες της πόλης.

Στο τρίτο και τελευταίο επίπεδο ο χρήστης- πολίτης γίνεται αντιληπτός ως ατομικότητα. Ο πολίτης ως ατομικότητα μέσα από τα προσωπικά του φίλτρα (εμπειρίες,ενδιαφέροντα, ιδιοσυγκρασία, ψυχολογία κ.α) αποκτά μια προσωπική αντίληψη του χώρου που τον περιβάλει. Στόχος της επέμβασης είναι η έκφραση της κάθε ατομικής αντίληψης στο δημόσιο χώρο. Η έκφραση αυτή επιτυγχάνεται με την χρήση εφαρμογής επαυξημένης πραγματικότητας λαμβάνοντας υπόψη παράλληλες πτυχές του χρήστη όπως η χρήση των κοινωνικών μέσων και των σύγχρονων κινητών τηλεφώνων καθώς και η τάση του για εξερεύνηση και οικειοποίηση της πόλης

1 **AMBIENCE OF THE CITY**



2 **EVENTS OF THE CITY**



3 **IMAGE OF THE CITY**



1



CITIZEN AS PART OF THE WHOLE

2



CITIZEN AS PART OF A GROUP

3



CITIZEN AS INDIVIDUAL

Αρχές

Διαδικτυακές Πλατφόρμες
α) φιλικές στο χρήστη του κινητού τηλεφώνου (mobile user friendly)
β) εξειδικευμένες ως προς τις πληροφορίες που παρέχουν

Πλατφόρμες με φυσικό και ψηφιακό περιεχόμενο (υβριδικό περιεχόμενο)

Πλατφόρμες ενίσχυσης της φυσική αντίληψης (δημιουργία επιπλέον επίπεδων ανάγνωσης)

Υποδομές που ικανοποιούν λειτουργικές και ποιοτικές ανάγκες του χρήστη του υβριδικού χώρου (Ιδιωτικότητα, ενέργεια, διαδίκτυο).

Υποδομές
α) κόμβοι στο φυσικό δίκτυο με
β)δυνατότητα σύνδεσης στο ψηφιακό δίκτυο και τους κόμβους του

Υποδομές κοινωνικής αλληλεπίδρασης σε φυσικο και ψηφιακό επίπεδο
α) Ενσωμάτωση χαρακτηριστικών κοινωνικών μέσων
β) Χωρικές συνθήκες για αλληλεπιδράσεις
γ)Χωρικές σχέσεις δημόσιας και ιδιωτικής σφαίρας

Υποδομές πρόσβασης σε δίκτυα και πληροφορίες
α) Απαραίτητη λειτουργία υποδομής του διαδικτύου (wifi-hotspot)
β) Όχι απαραίτητη χρήση προσωπικής συσκευής

Πλατφόρμες απορρόφησης και παραγωγής πληροφοριών
α) Εξατομίκευση προτιμήσεων
β) Οπτικοποίηση πληροφοριών

Εργαλεία

Ανάπτυξη εφαρμογών

Ανάπτυξη εφαρμογών Location Based

Ανάπτυξη εφαρμογών Επαυξημένης πραγματικότητας

Ανάπτυξη εφαρμογών κοινωνικών μέσων

Αρχιτεκτονικός σχεδιασμός



CITIZEN AS PART OF THE WHOLE



CITIZEN AS PART OF A GROUP



CITIZEN AS INDIVIDUAL

Αρχές

Εργαλεία

1



CITIZEN AS PART OF THE WHOLE

2

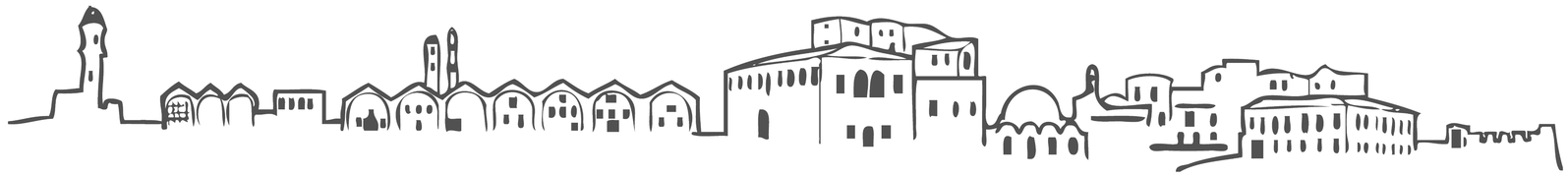


CITIZEN AS PART OF A GROUP

3



CITIZEN AS INDIVIDUAL







Ambience



Ambience



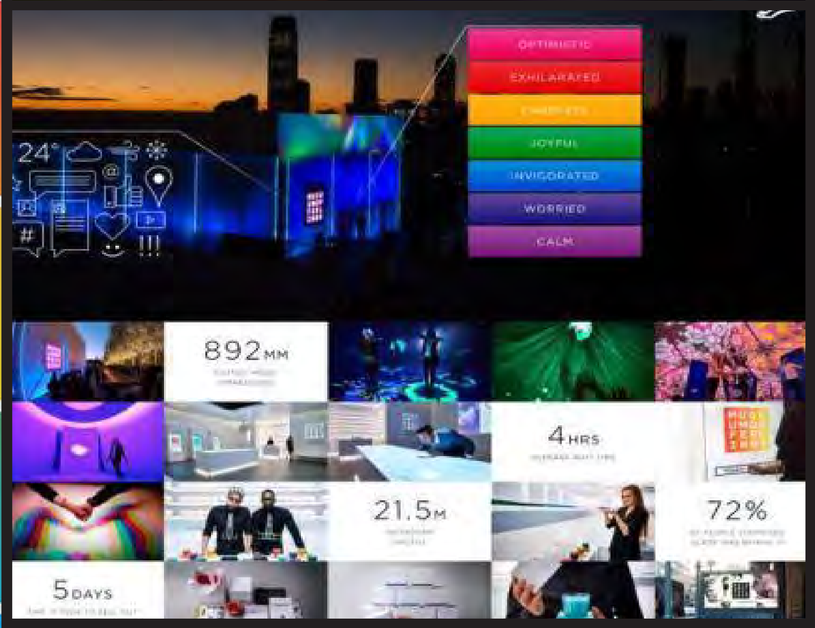
express

Ambience

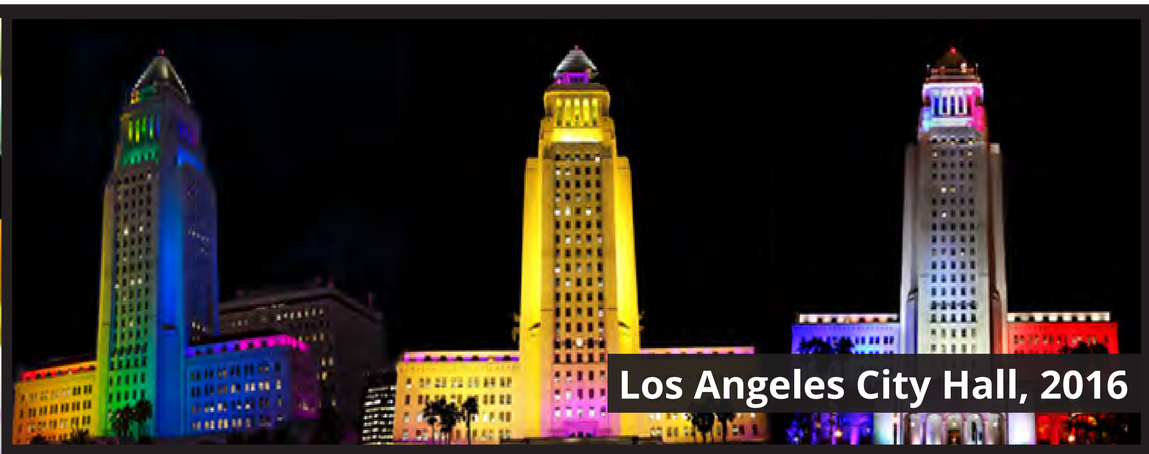


The museum of feelings, (2015) NYC





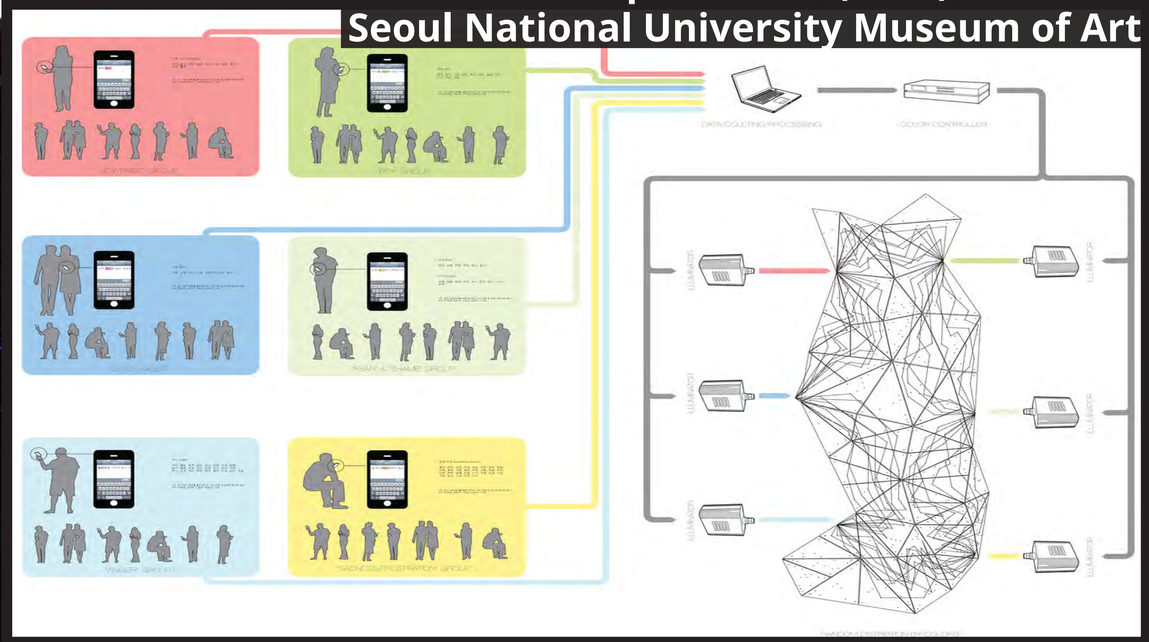




Los Angeles City Hall, 2016



The “Mood Map” exhibit, (2013), Korea
Seoul National University Museum of Art



Expression of city ambience

Concept

Medium

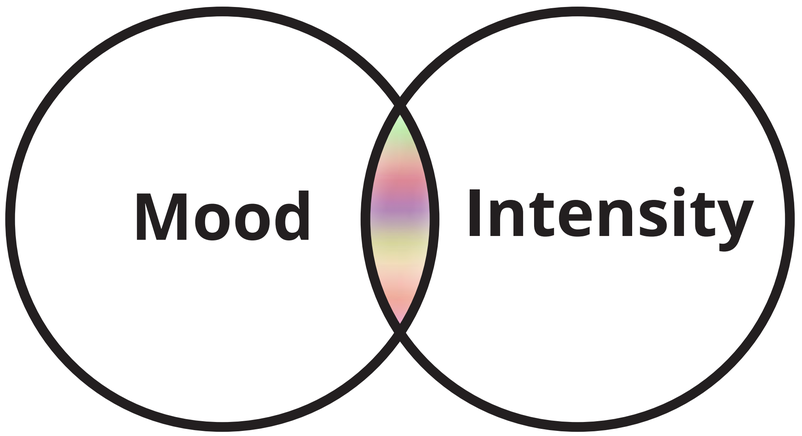
Colors

Tool

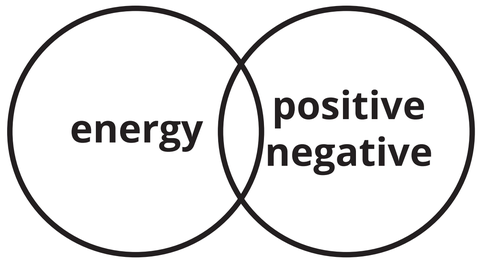
Lights of the city



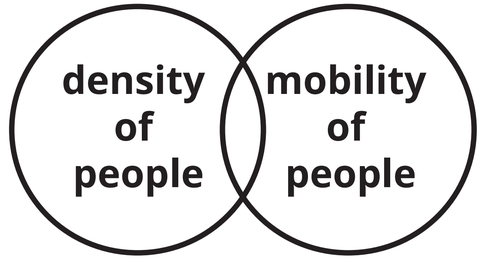
Ambience



Mood Scope



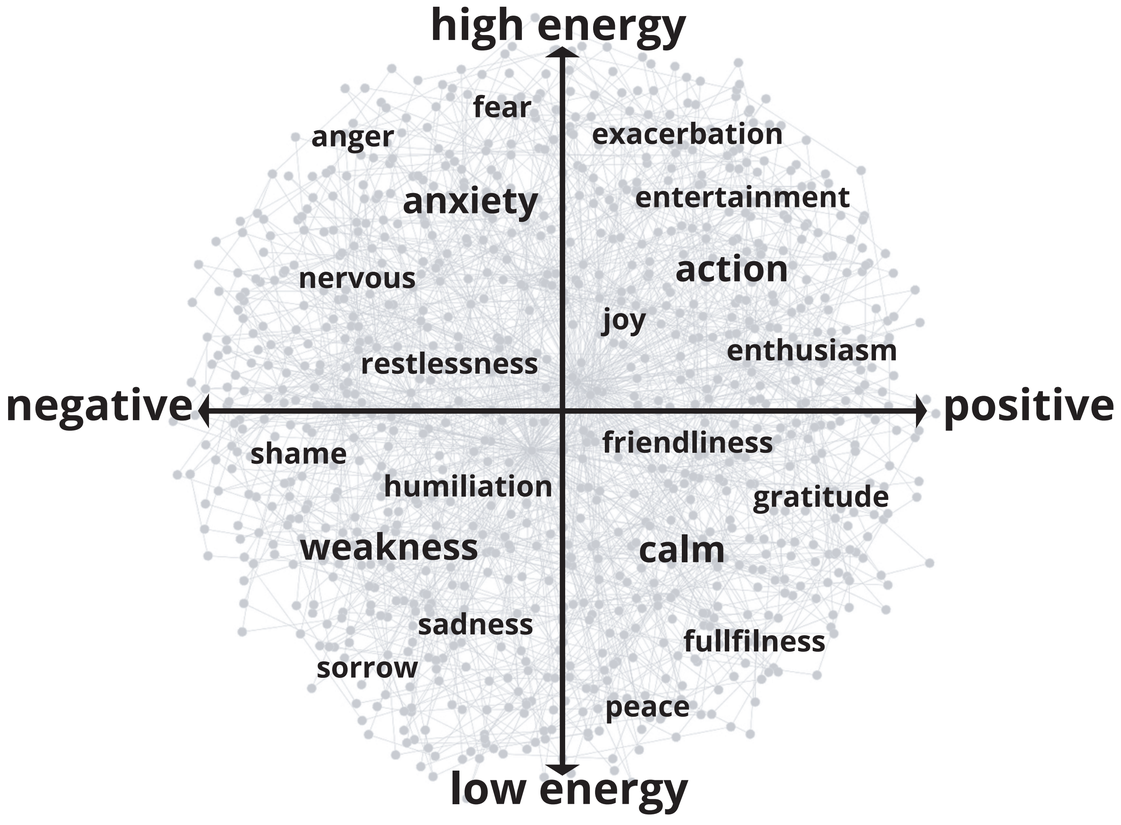
Intensity



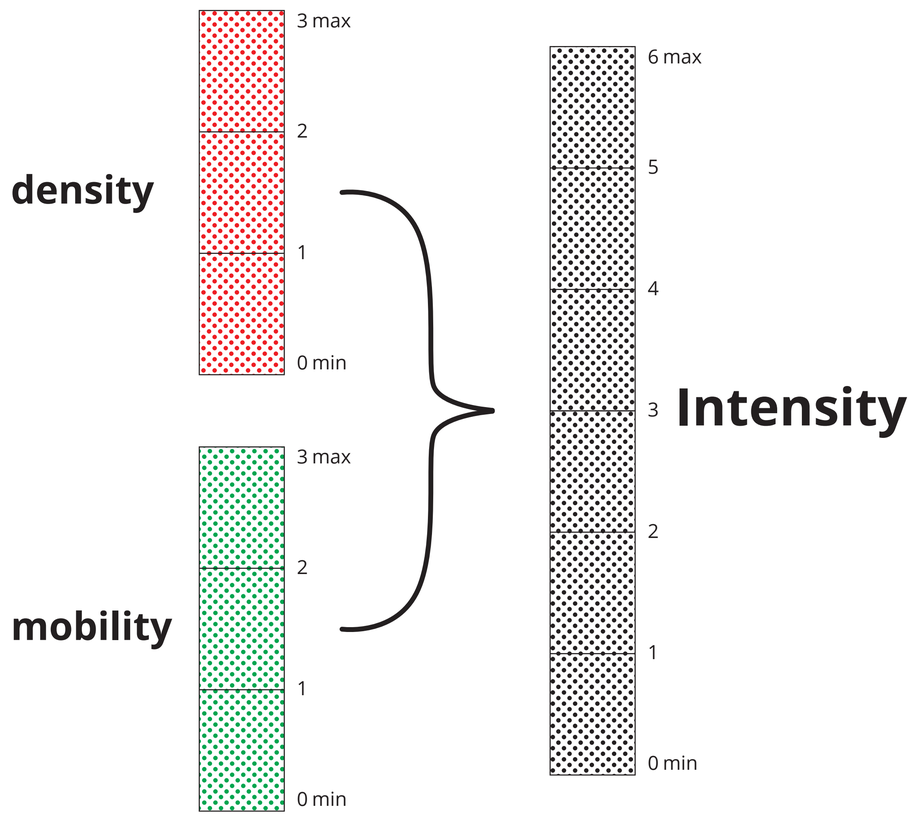
*density= number of people/space

Mood map

* based on Miller mood map

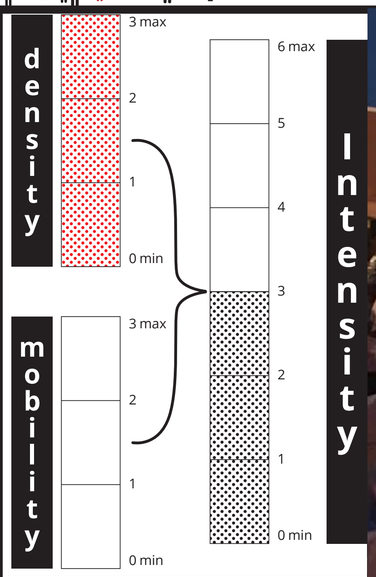


Quantification

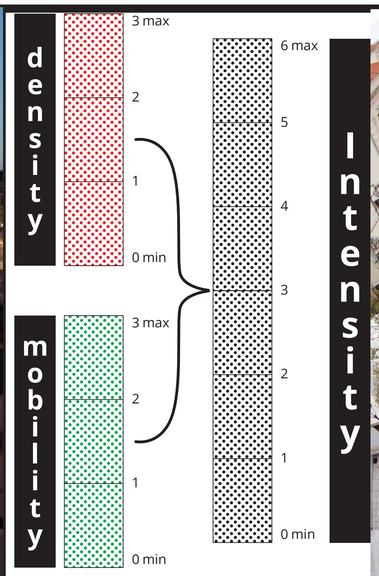


AMBIENCE OF THE CITY | METHODOLOGY

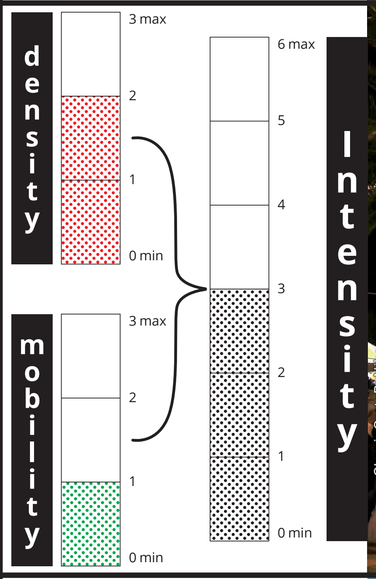




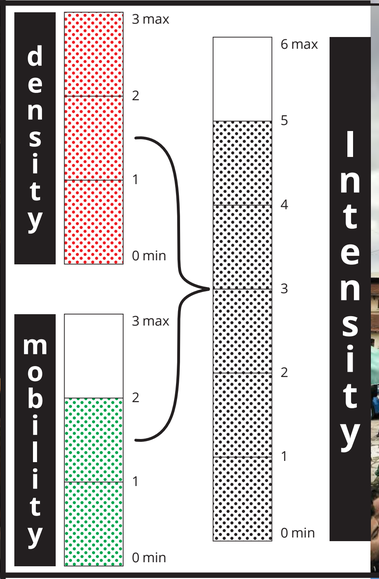




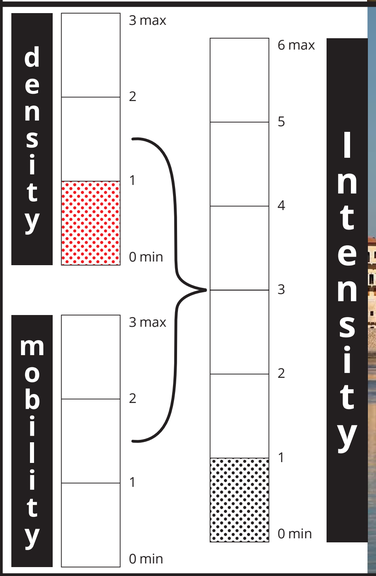




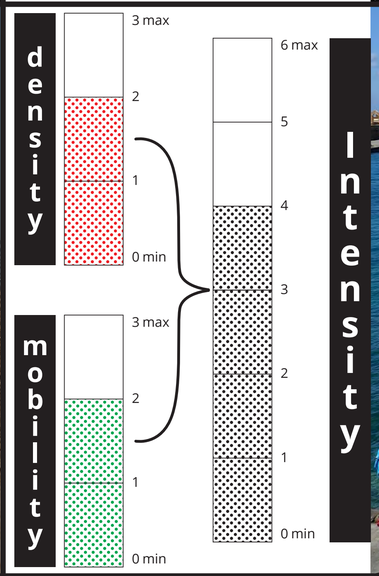




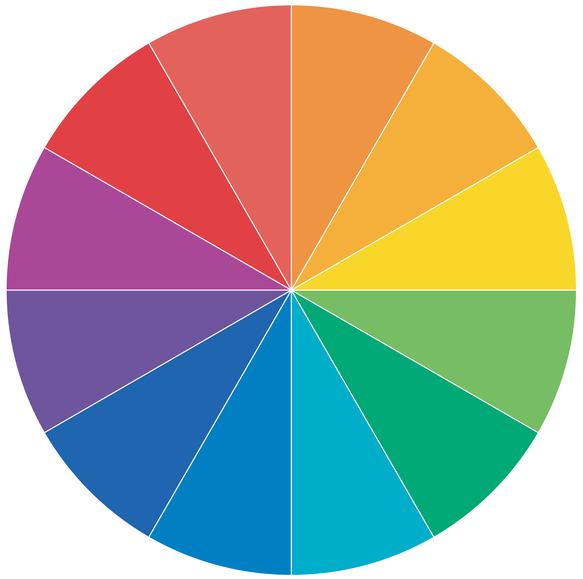




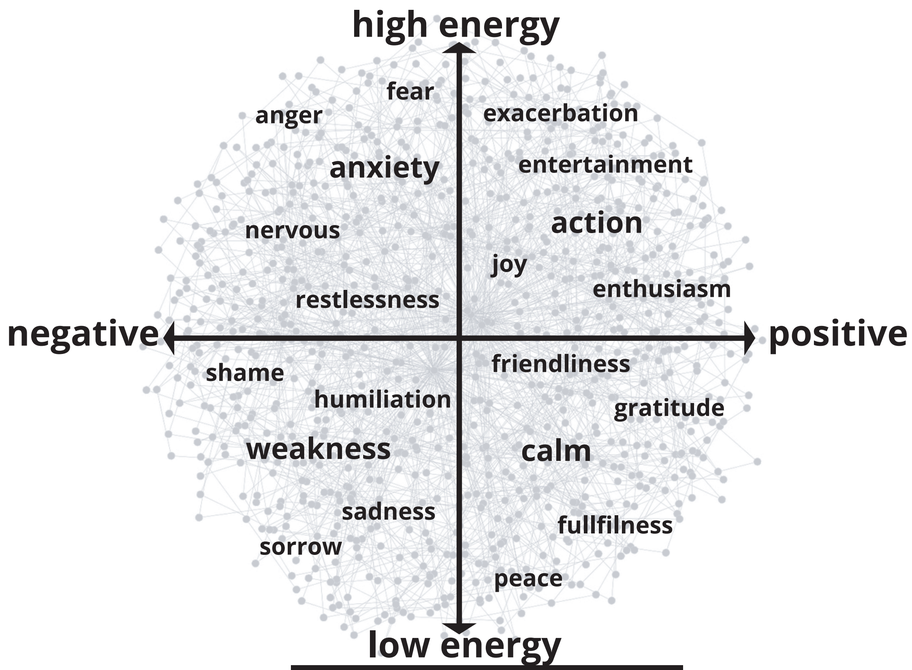






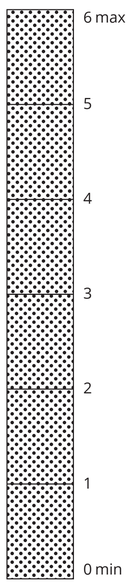


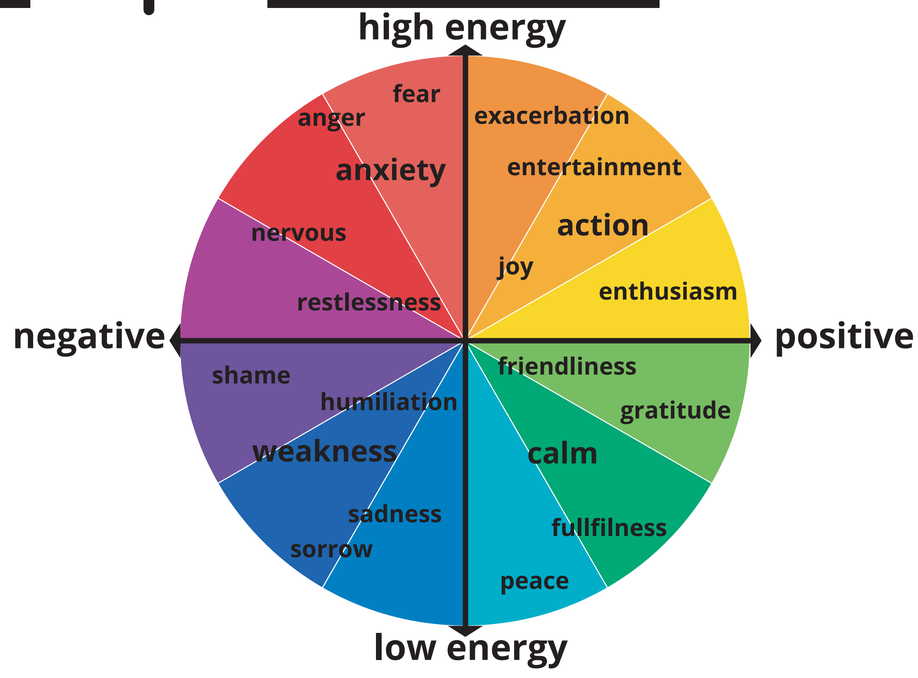
12 colors wheel
*primary, secondary, tertiary



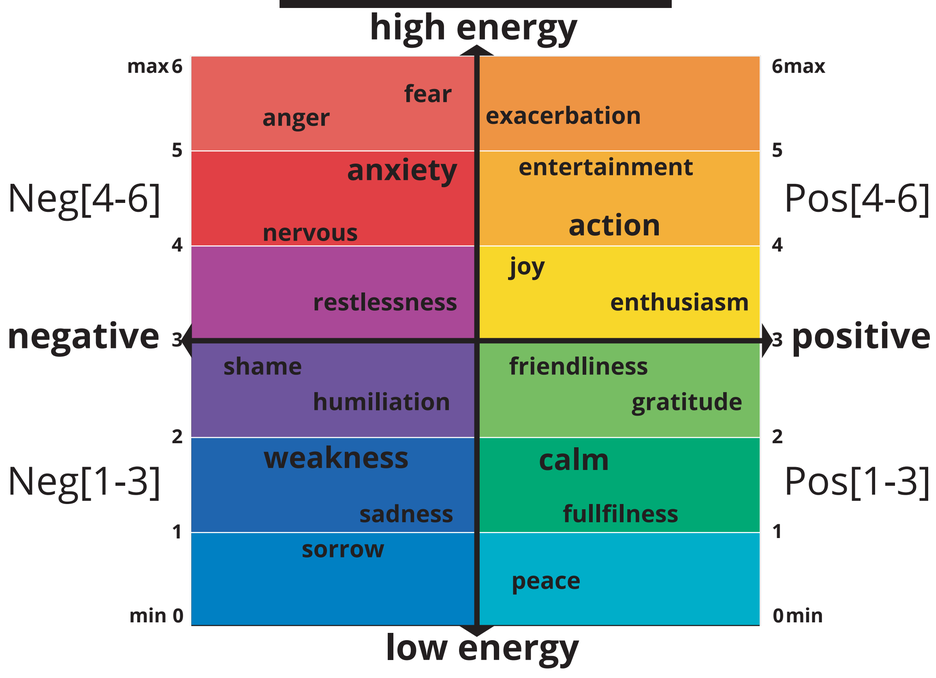
Mood map

Intensity + **Color Mood map** =





Ambience table



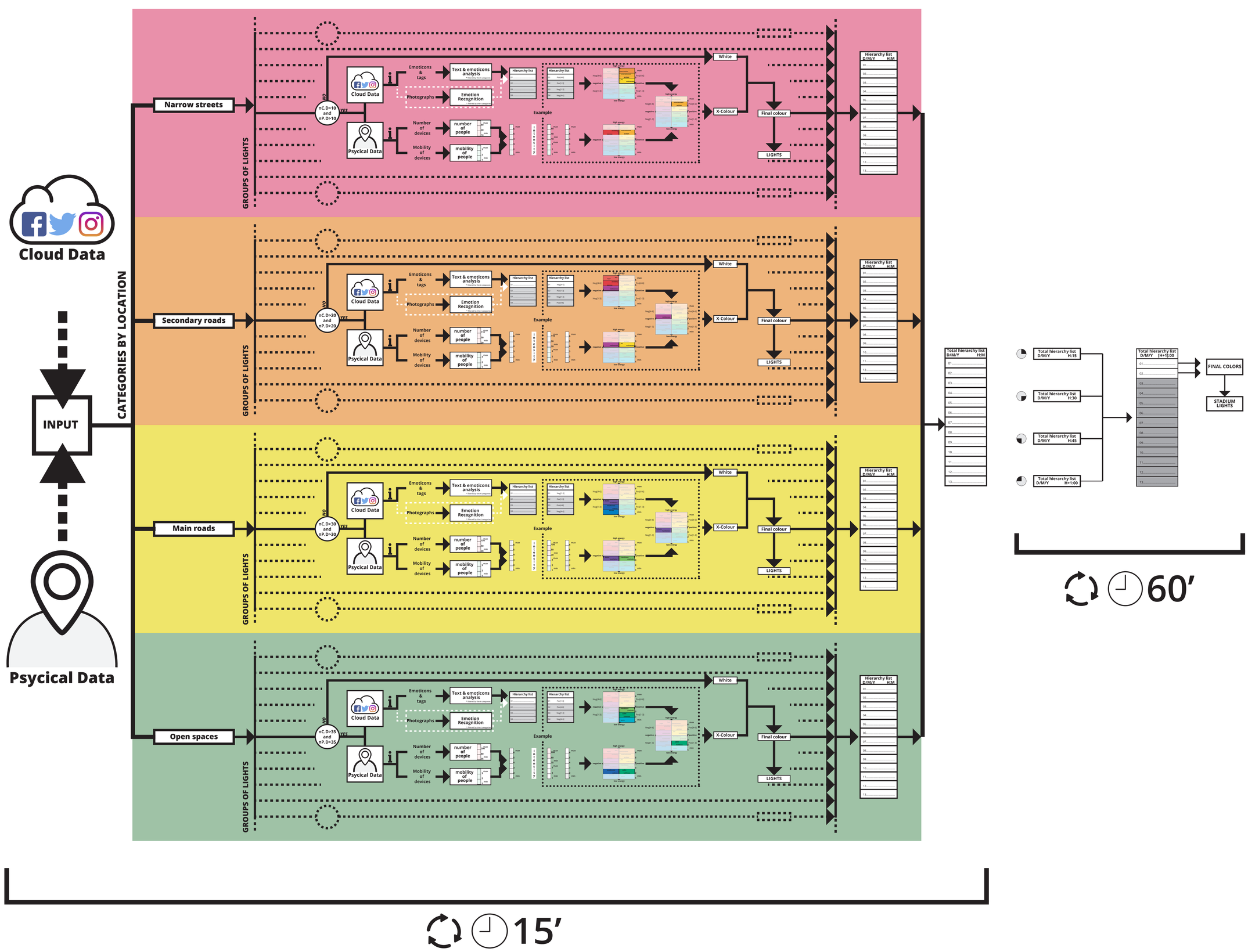
Categorization

- Narrow streets width<10 m.
- Main roads width≥ 14 m.
- Secondary roads 10 m. ≤ width< 14 m.
- Open spaces (alleys, parks etc)

Grouping of lights

- Narrow streets' lights
- Secondary roads' lights
- Main roads lights
- Open spaces' lights
- Stadium's lights

AMBIENCE OF THE CITY | APPLICATION




CHANIA
AERIAL CREATIONS


ragout

1



CITIZEN AS PART OF THE WHOLE

2

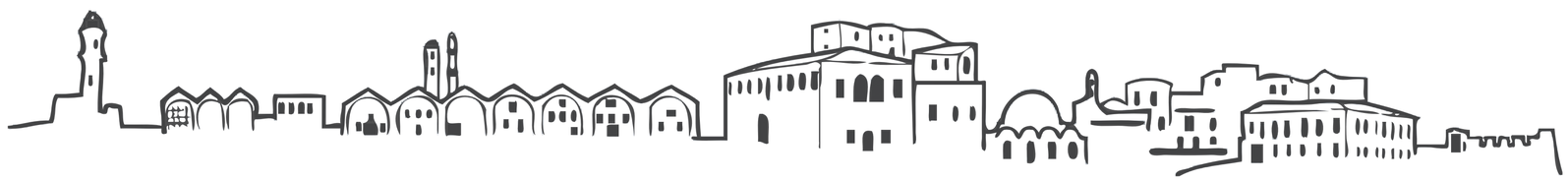


CITIZEN AS PART OF A GROUP

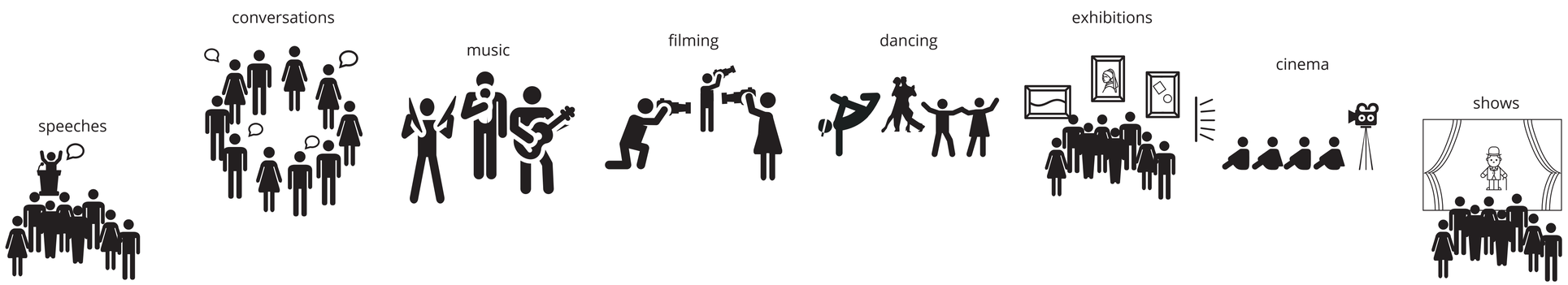
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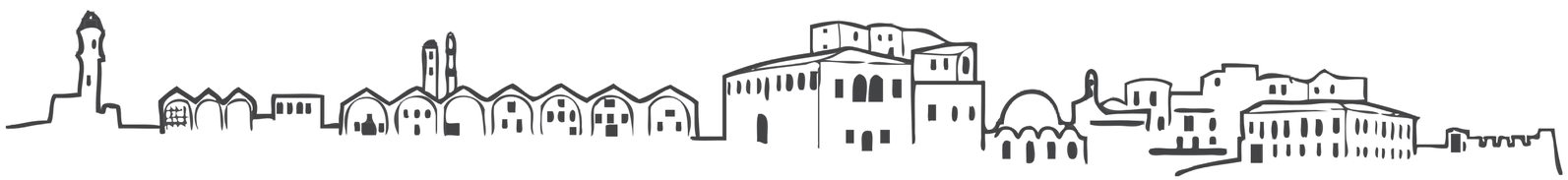


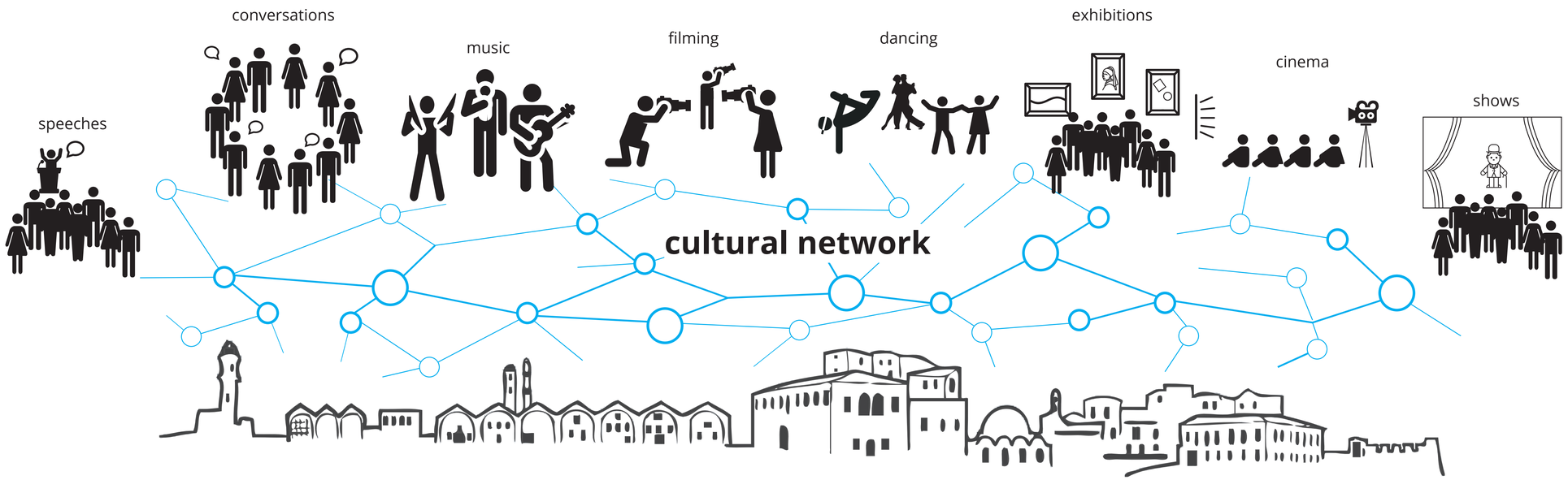
CITIZEN AS INDIVIDUAL

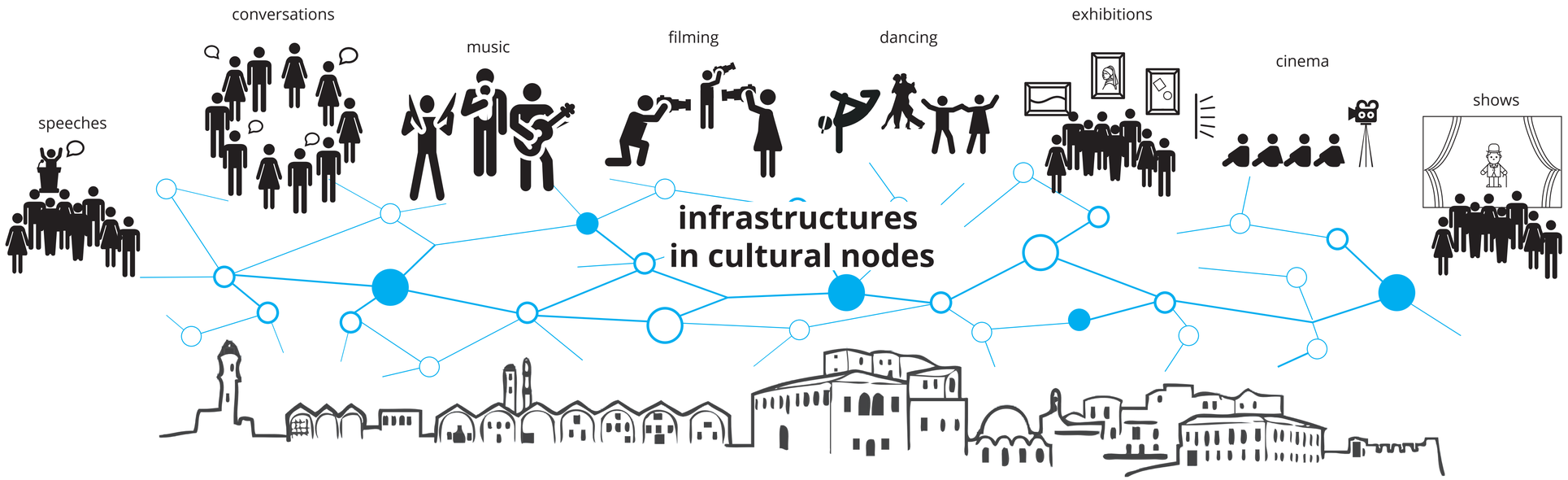


EVENTS OF THE CITY | CONCEPT






speeches
conversations
music
filming
dancing
exhibitions
cinema
shows
cultural network

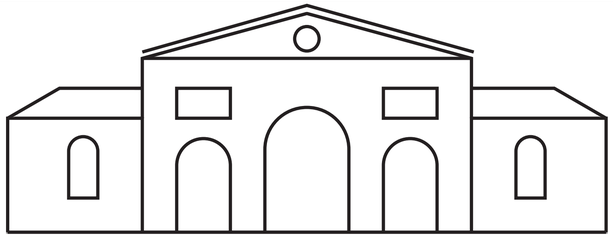

speeches
conversations
music
filming
dancing
exhibitions
cinema
shows
infrastructures
in cultural nodes

EXISTING CULTURAL NETWORK

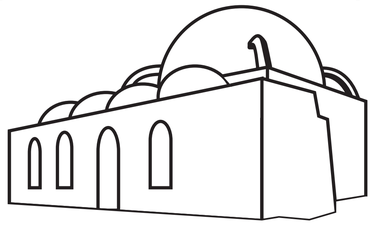


PROPOSED CULTURAL NODES

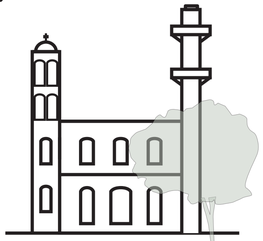




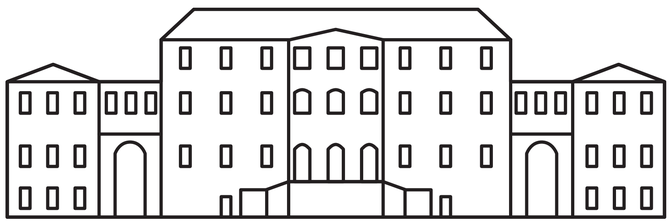
i)Central Market Sq.



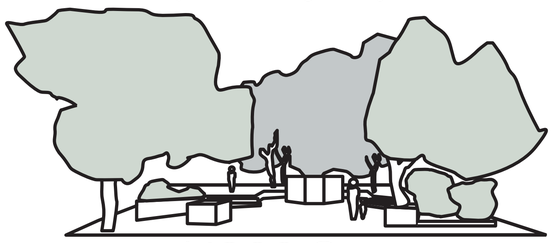
ii)Giali Tzamisi



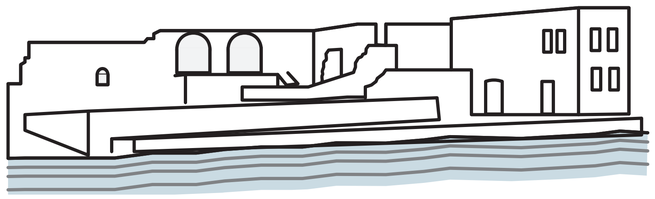
iii)1821 Sq.



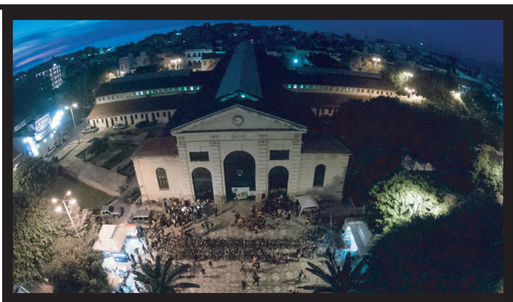
iv)Liberty Sq.



v)1866 Sq.



vi)Fortezza



Central Market Square

-City center
-City landmark
-Gathering point



Giali Tzamisi

-City landmark
-Events gathering point



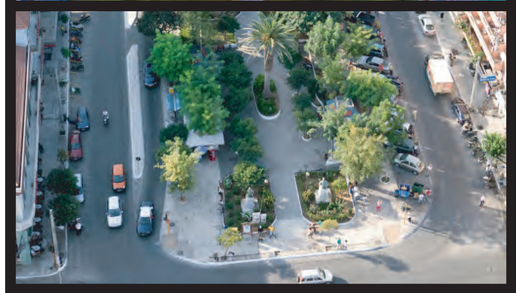
1821 Square (Splantzia Square)

-Vivid square
-Self-organized activities



Liberty Square

-Administrative and commercial services
-Imposing building
-Dormant public space



1866 Square

-City center
-Greenery
-Dormant public space



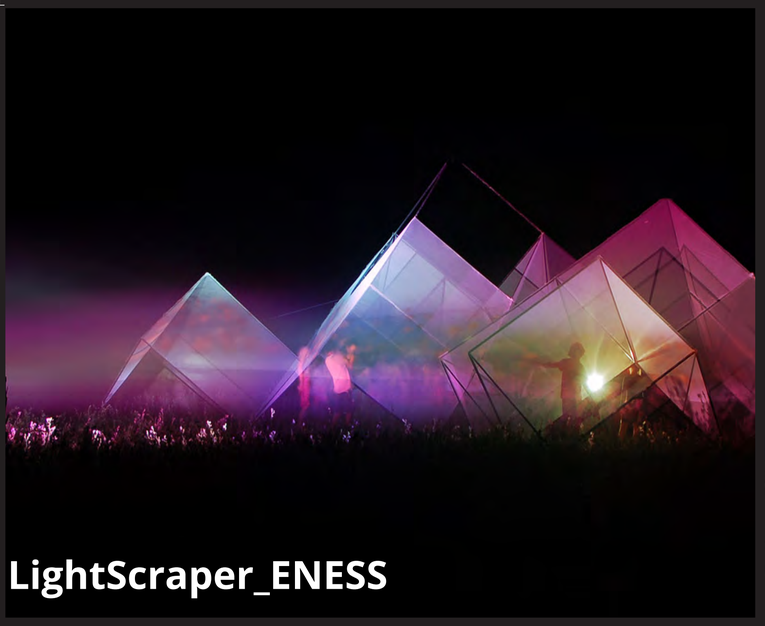
Fortezza

-Path to the lighthouse
-Visual contact from and towards the old port

Active points of the existing cultural network

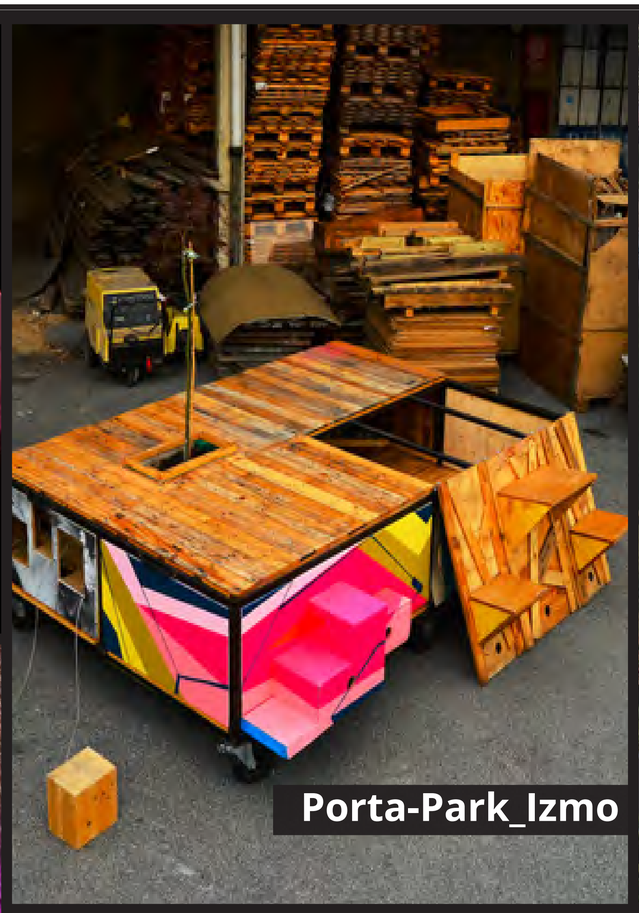
City nodes. Redefinition of their character

Potential points. Non-active public places


LightScraper_ENESS


AI Weiwei's Forever Bicycles and Chandeliers


LaCineteca_PicoEstudio


Porta-Park_Izmo


ArchiboxTheBase_StudioNo


TricycleHouse_PAO

cultural events


speeches

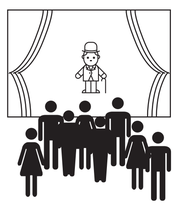

conversations


music


dancing


exhibition

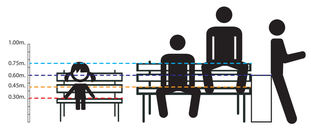

cinema


show

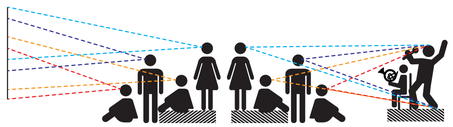
Sound
- Microphone
- Speakers
- Control panel
- Power hubs

Projection
- Projector
- Projection surface

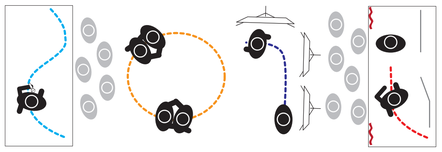
Seating areas



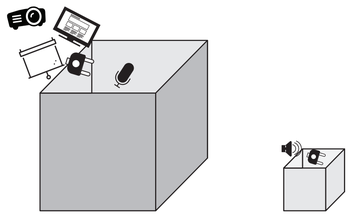
Visibility conditions



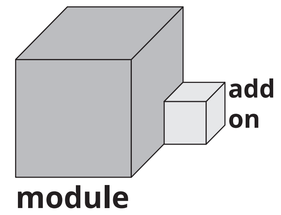
Moving areas

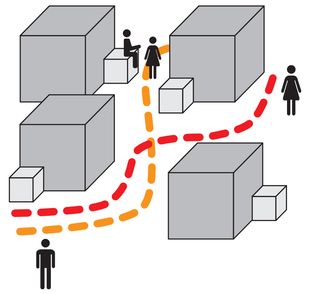


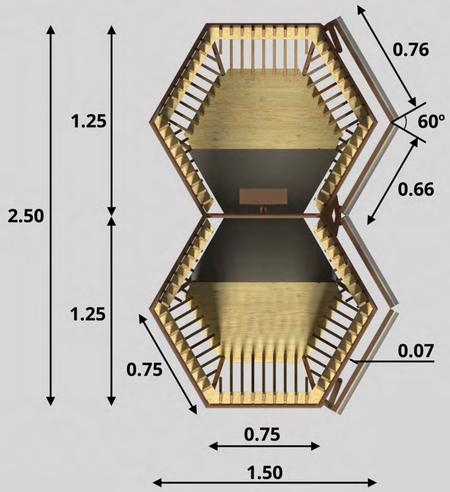
Technological Infrastructure

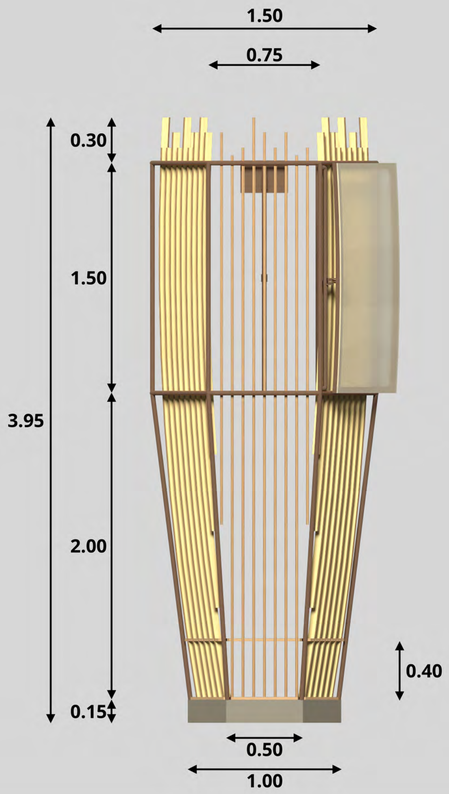


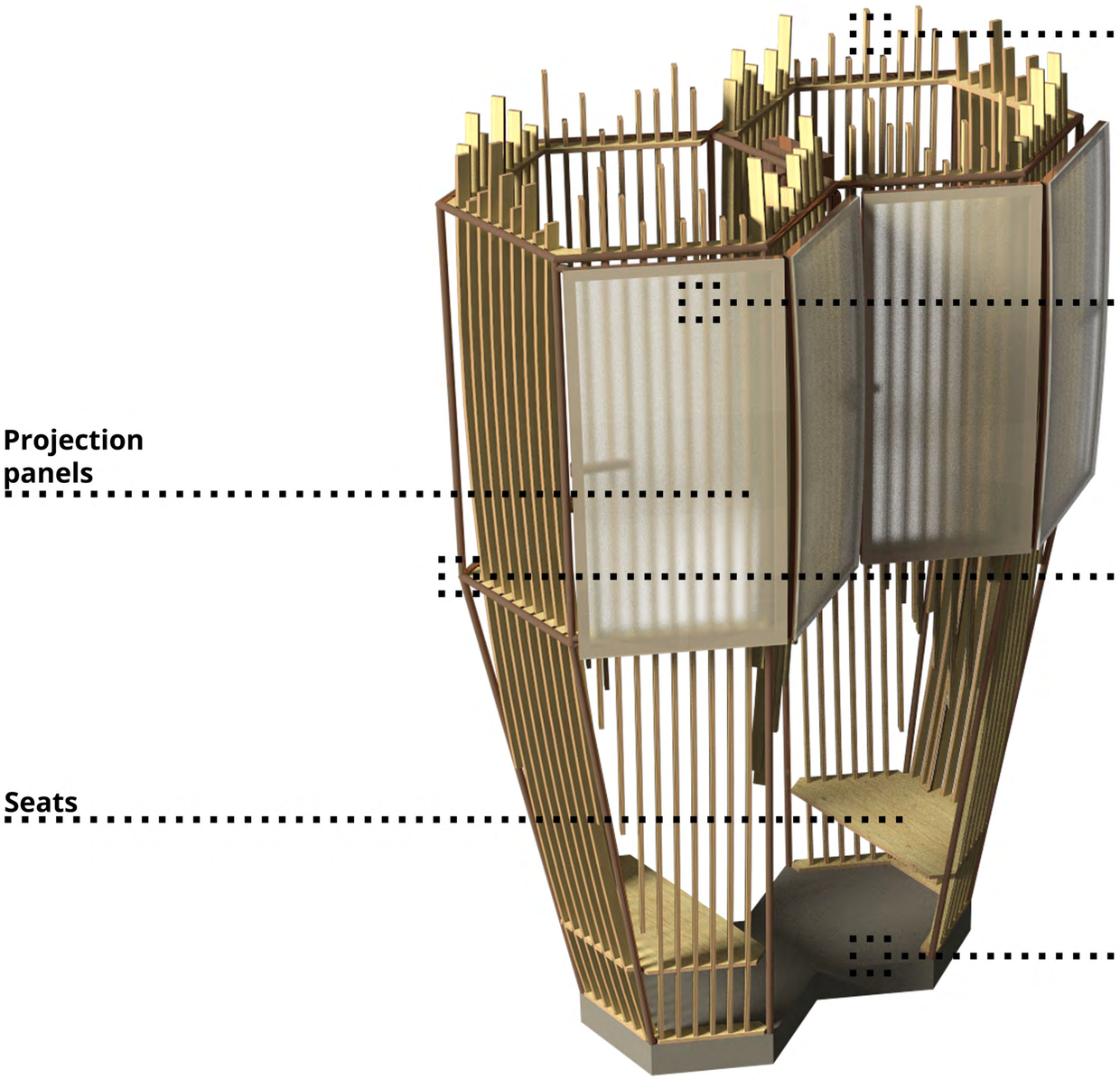
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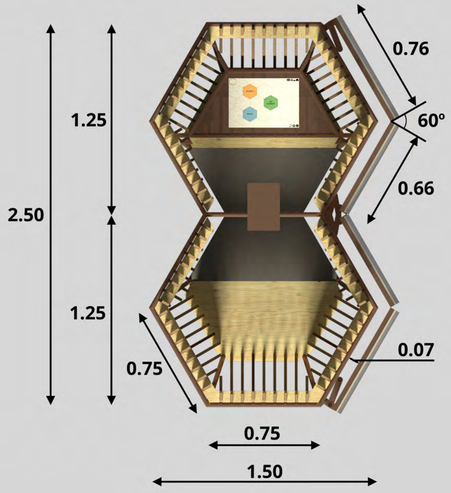


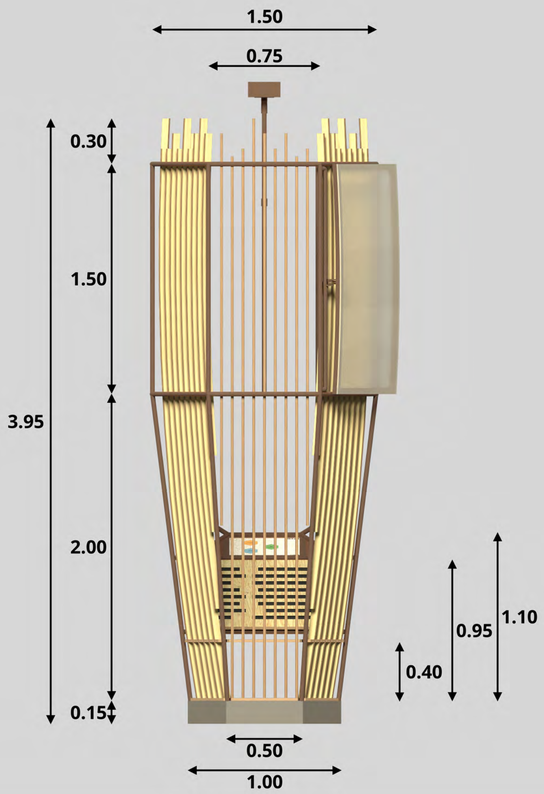



0.76
60º
0.66
1.25
2.50
1.25
0.07
0.75
0.75
1.50


1.50
0.75
0.30
1.50
3.95
2.00
0.40
0.15
0.50
1.00


Projection panels
Seats
Wood
Glass
Bronze
Concrete

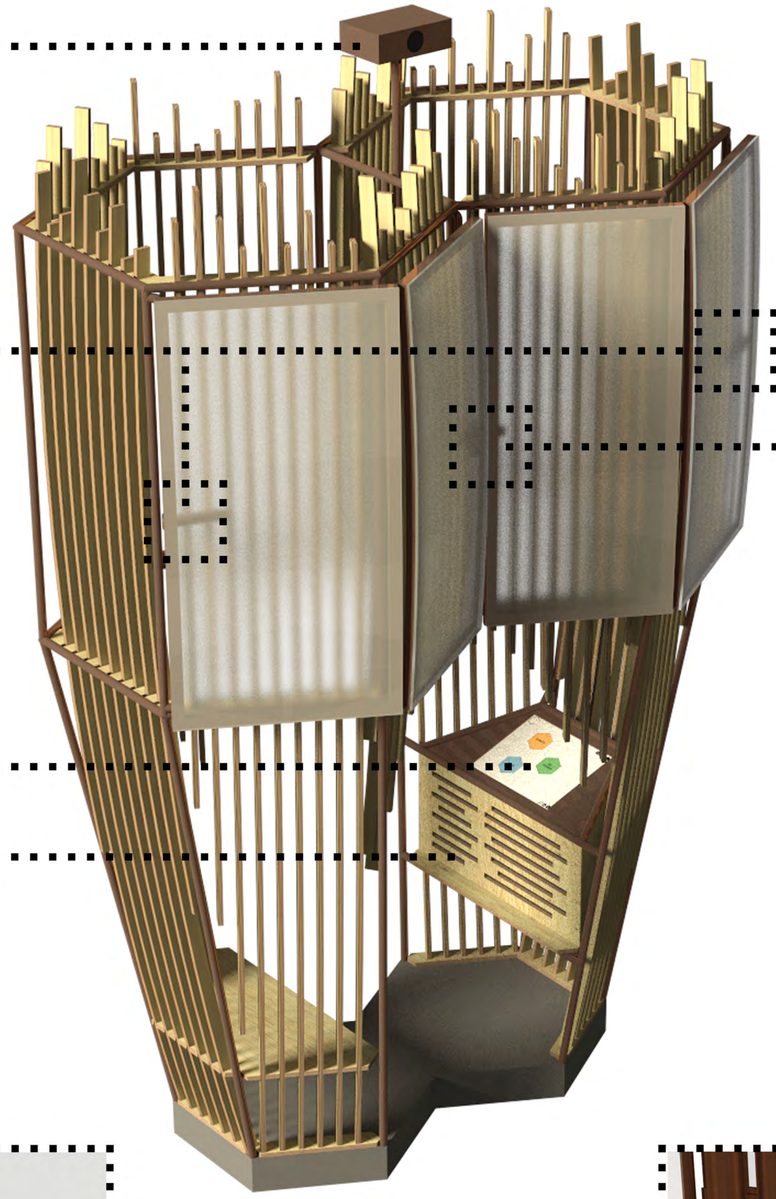




Projector

Control Panel

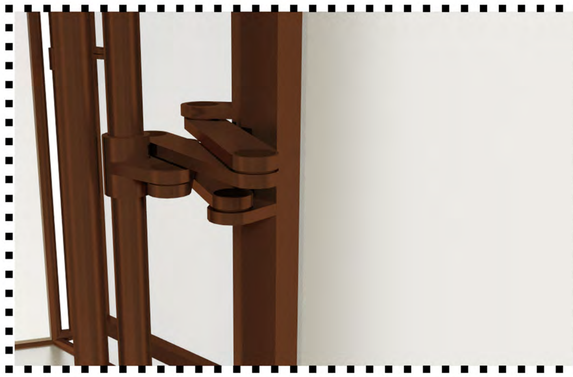
Storage Box

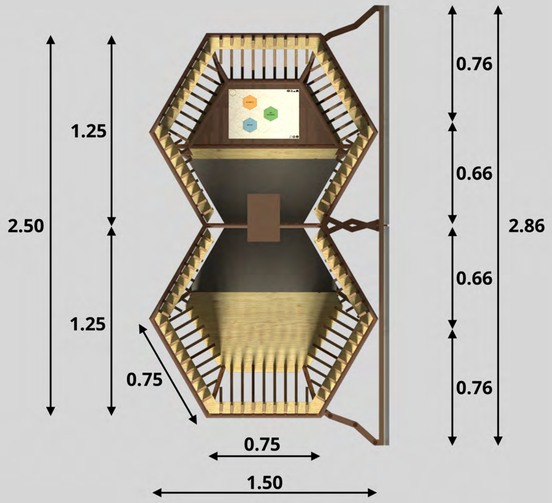


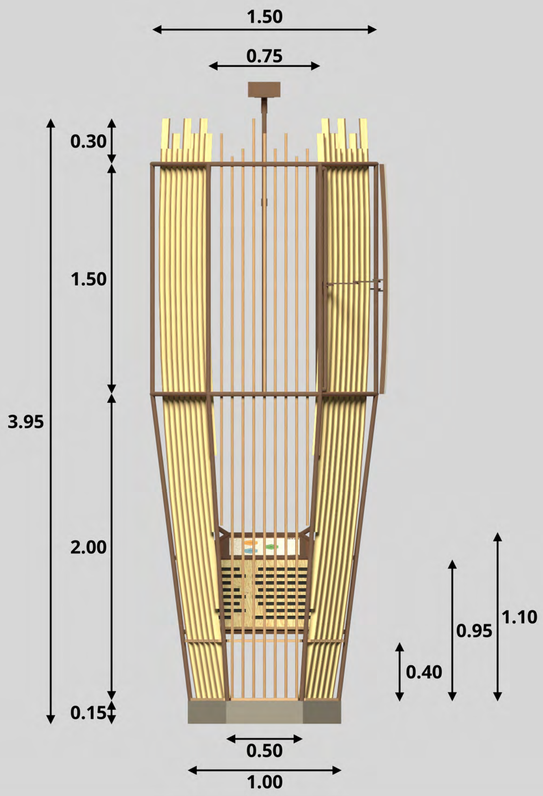
Transformable side arm

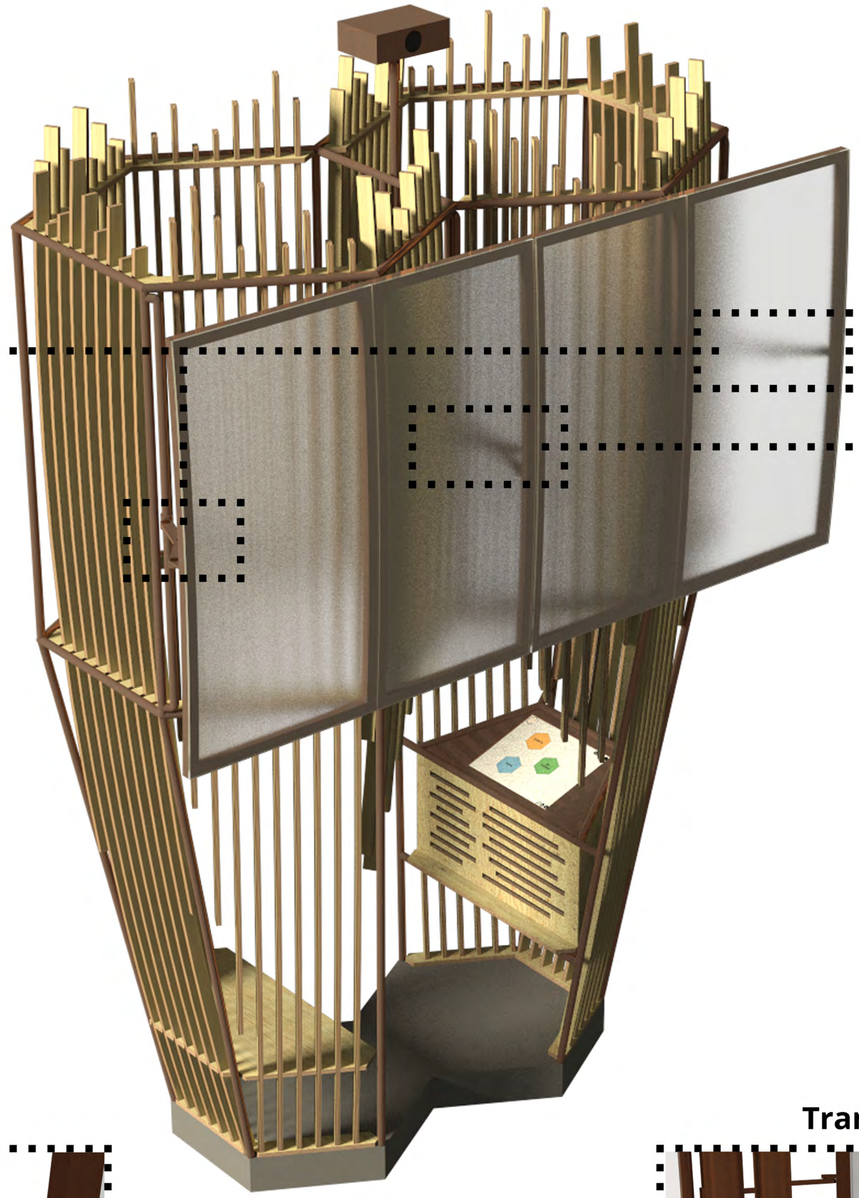


Transformable central arm

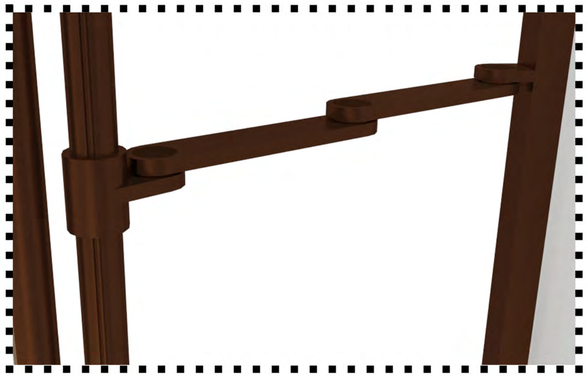




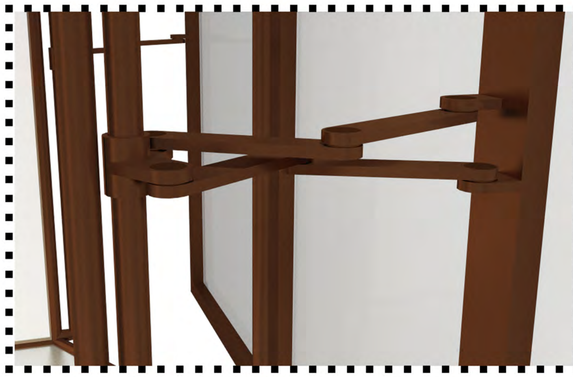


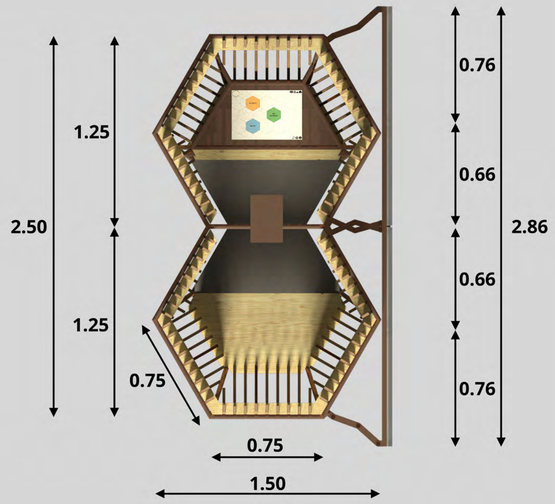


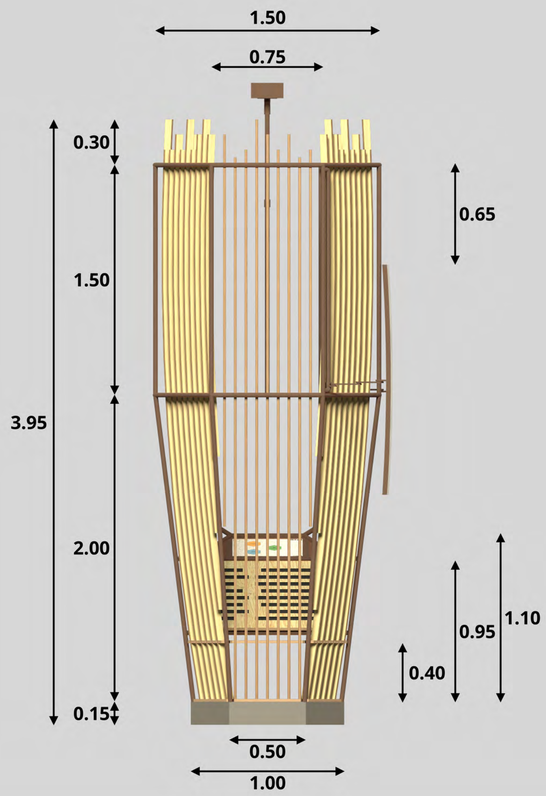
Transformable side arm



Transformable central arm

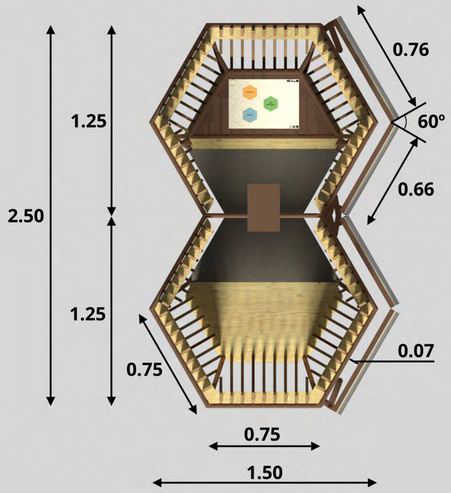


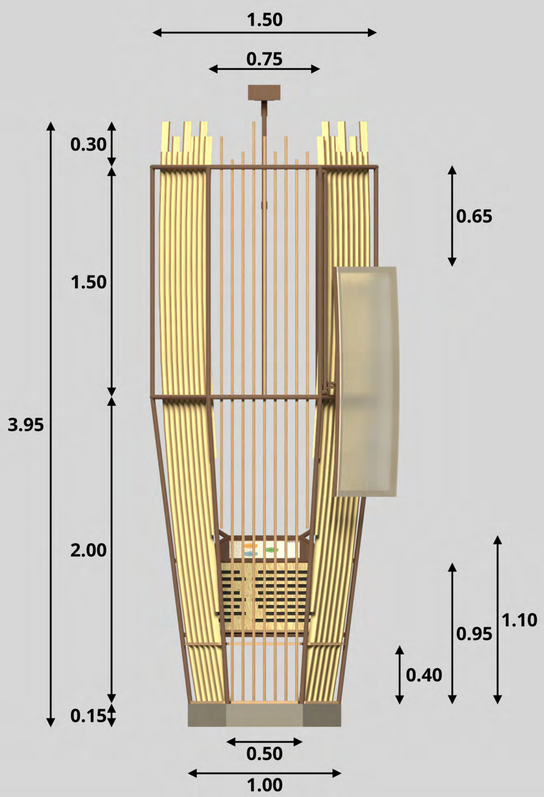


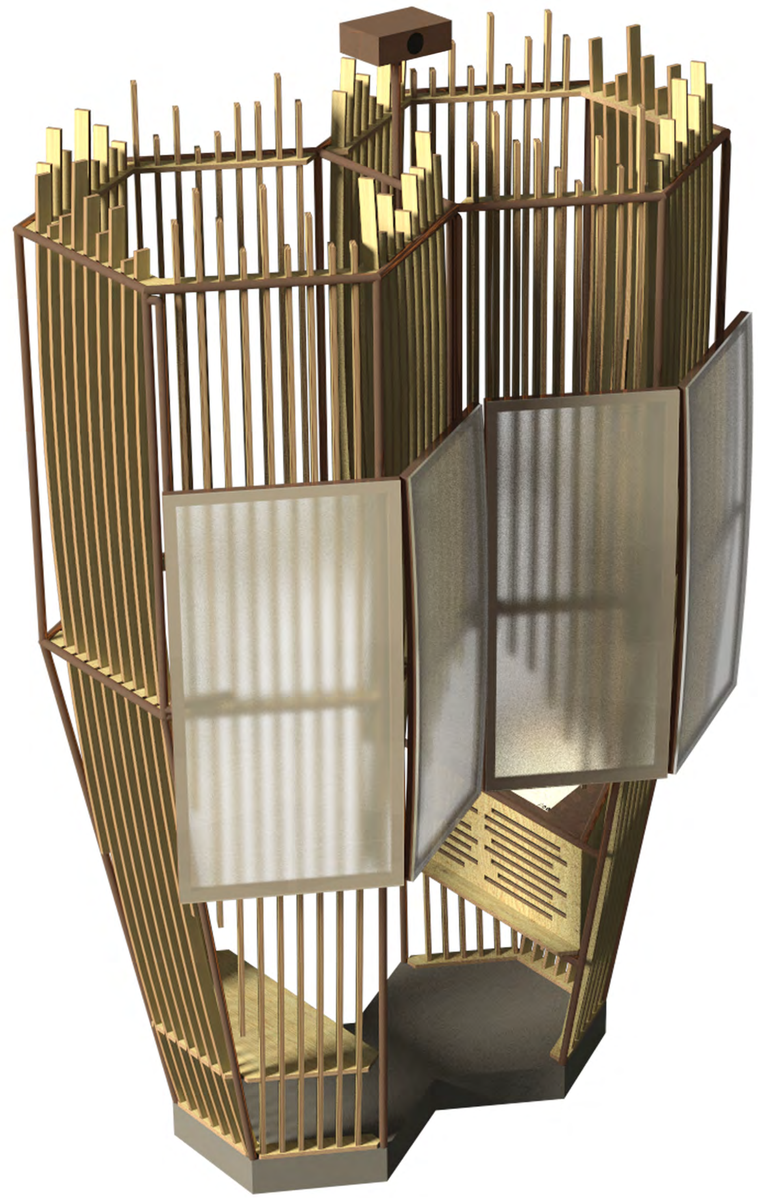


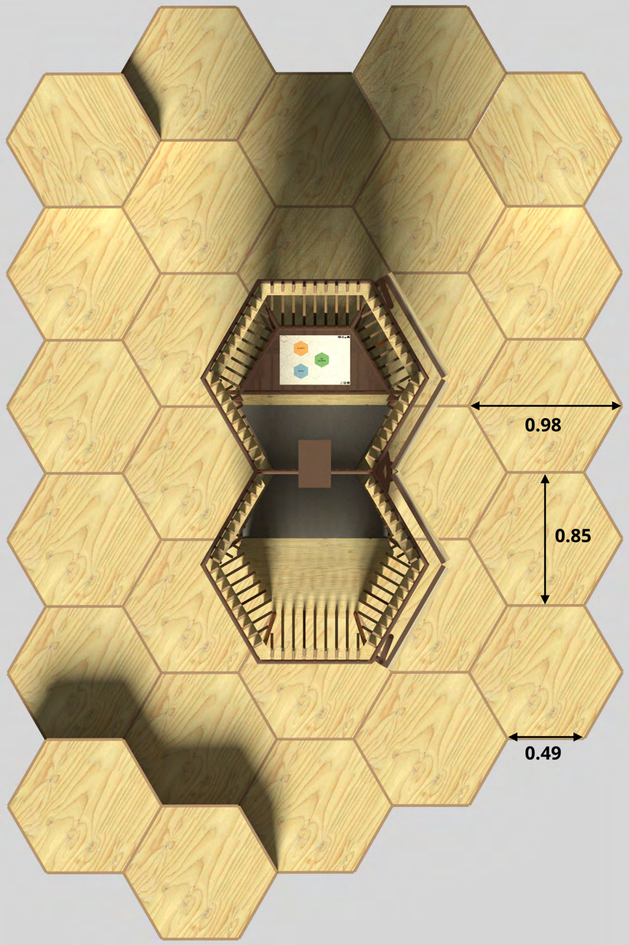
Vertical moving axes

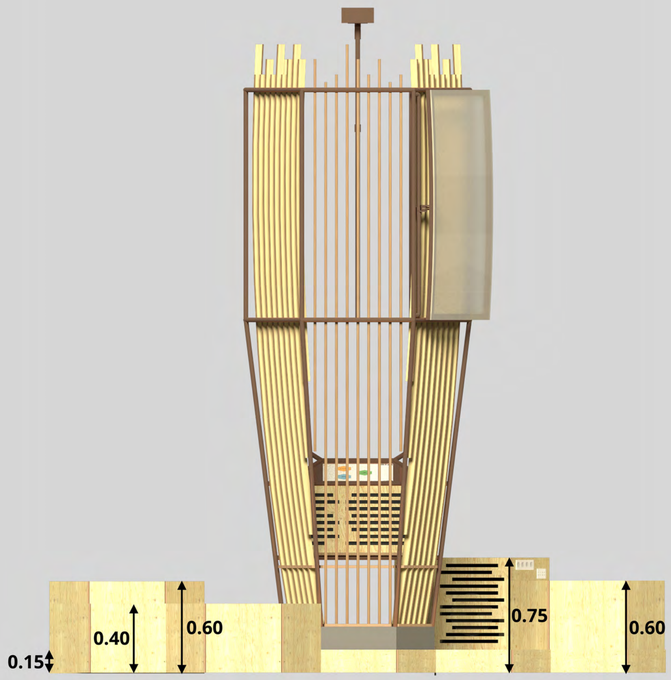


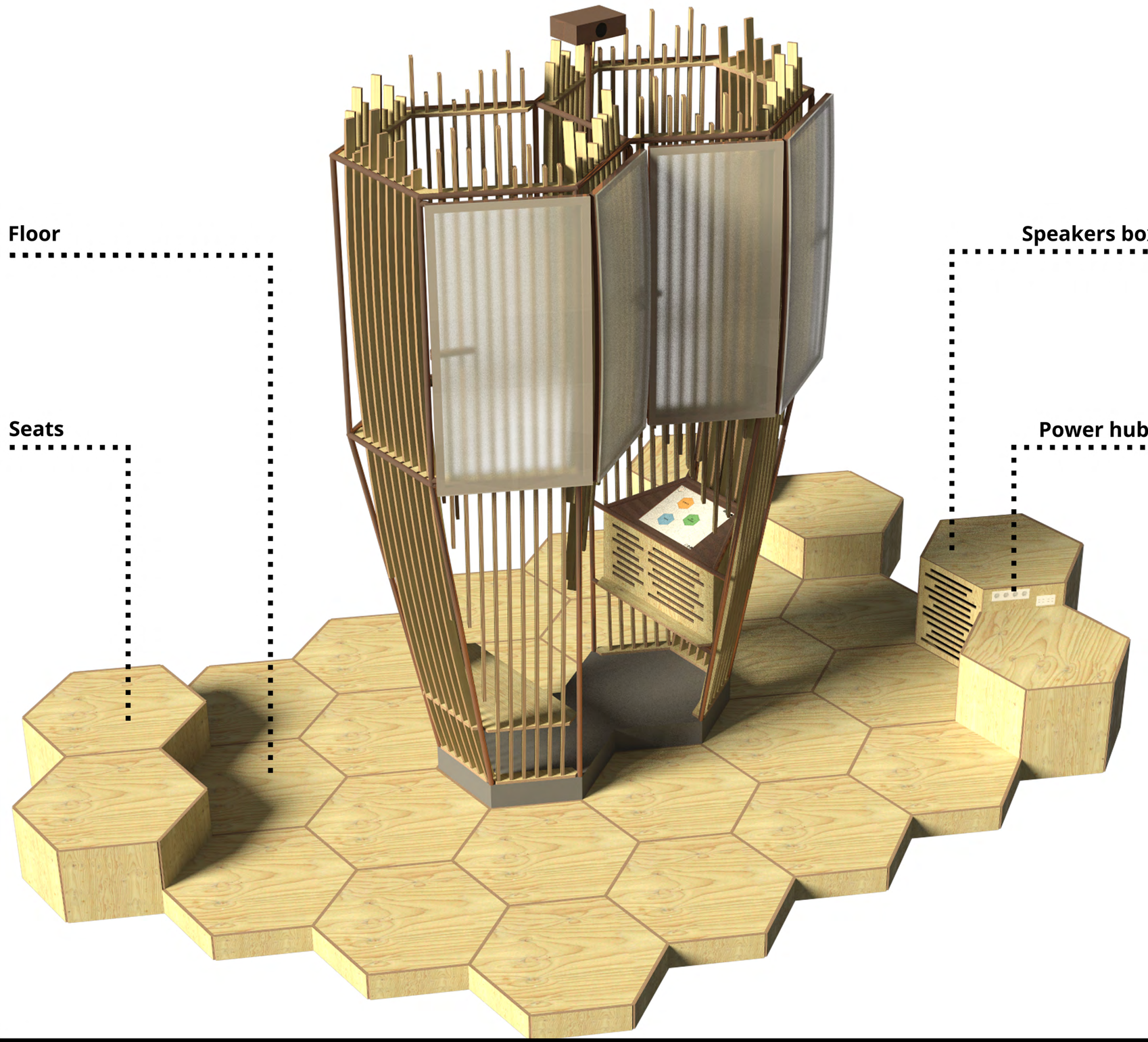

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60º
0.66
1.25
2.50
1.25
0.07
0.75
0.75
1.50

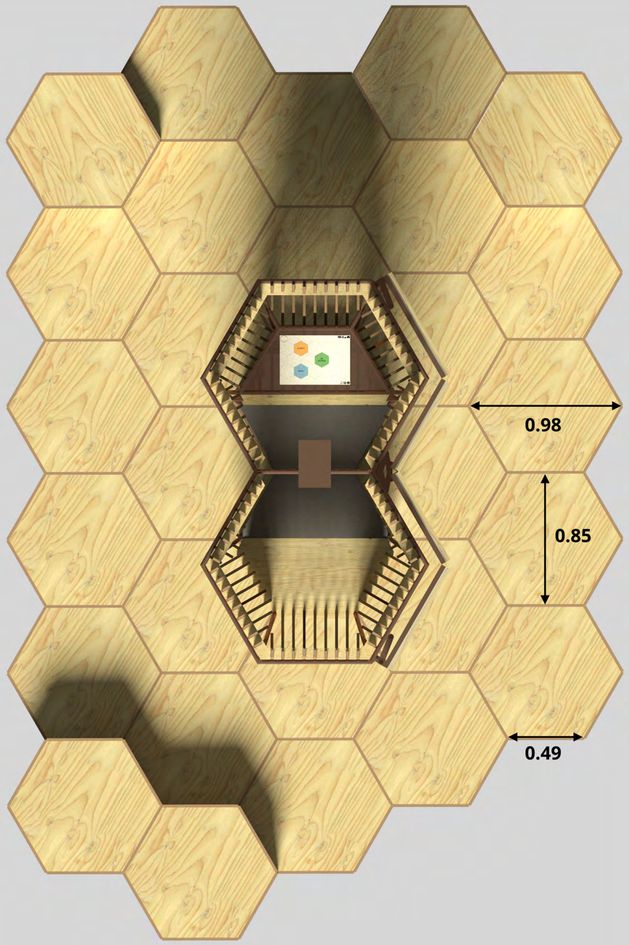

1.50
0.75
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1.00

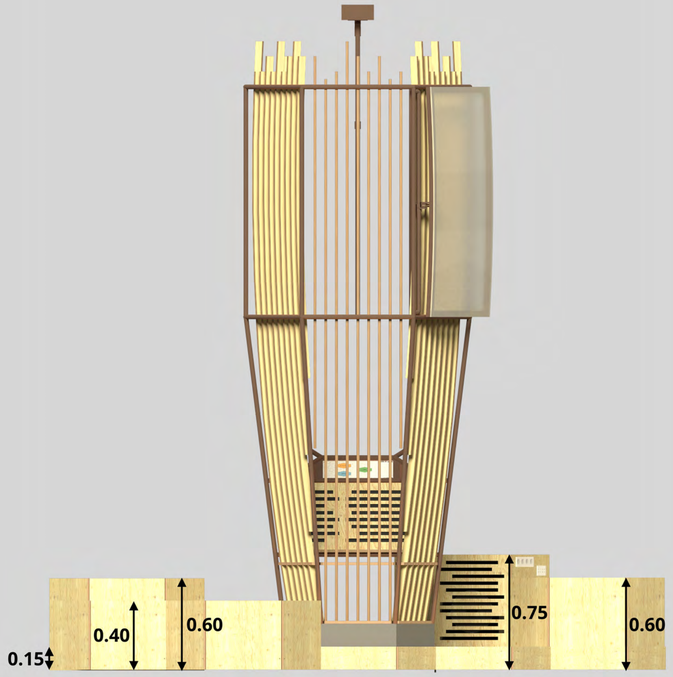


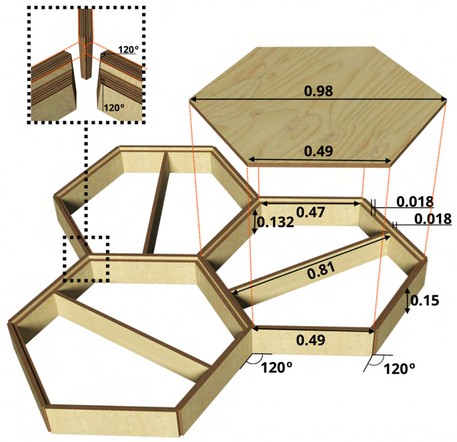

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0.49


0.40
0.60
0.75
0.60
0.15

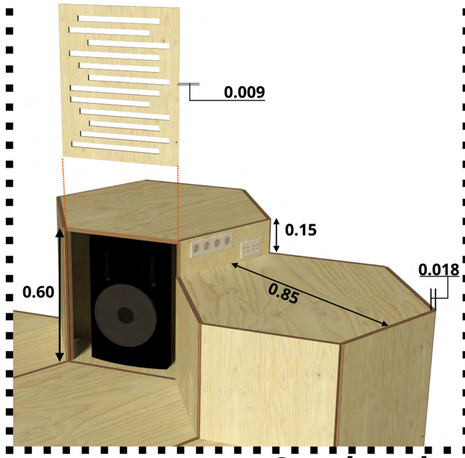

Floor
Seats
Speakers box
Power hubs





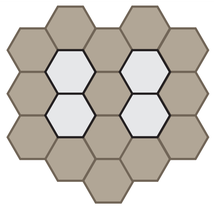
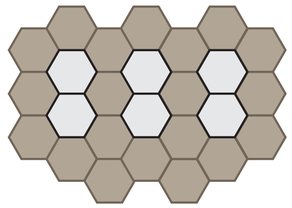
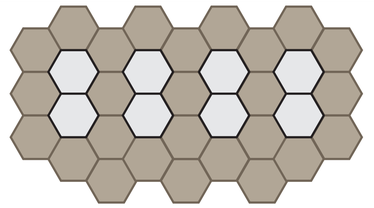
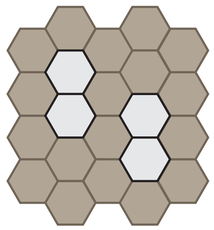
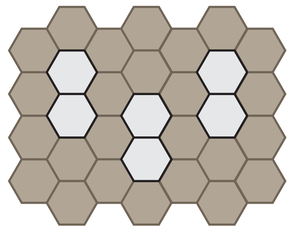
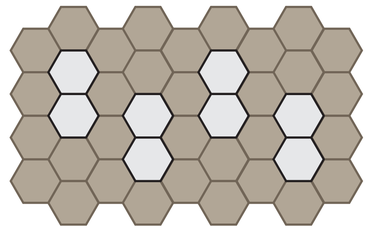
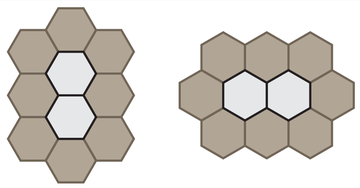
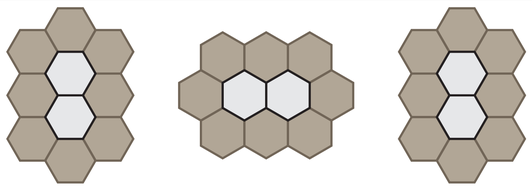
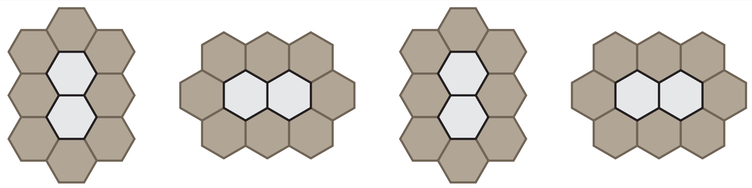
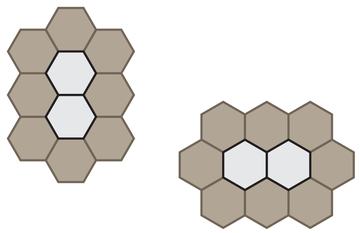
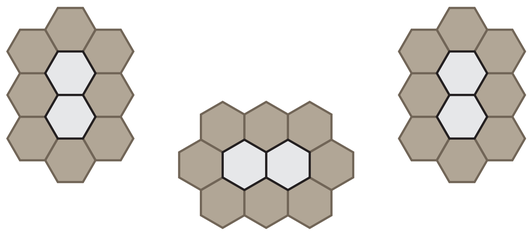
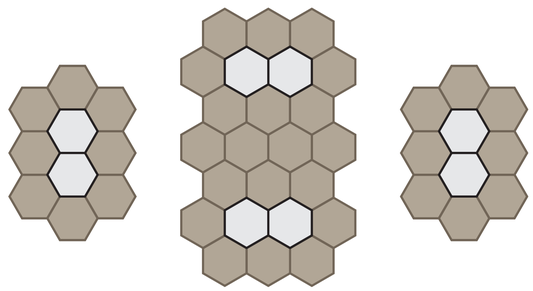
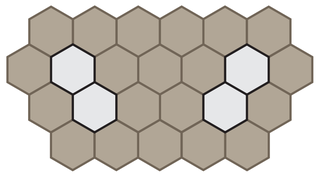
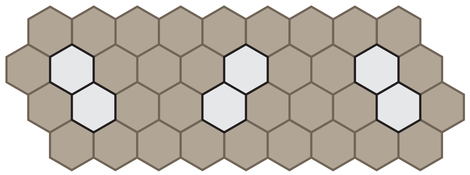
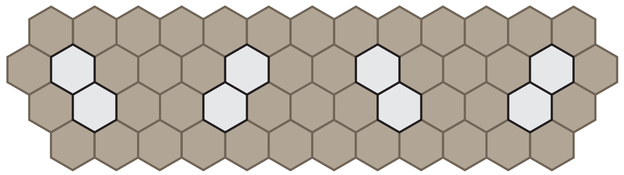
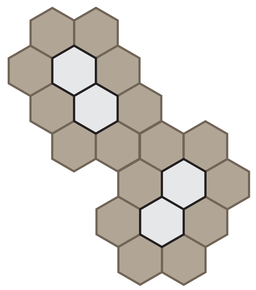
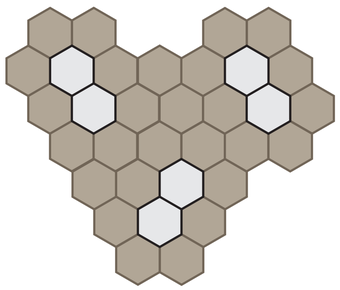
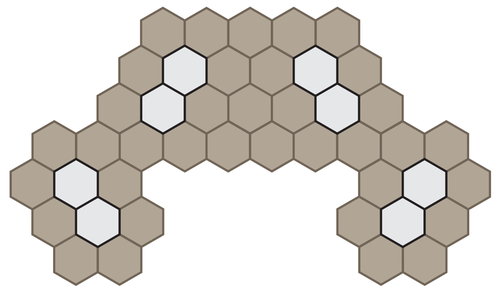


Floor details



Speakers box

MODULE COMBINATIONS	x2	x3	x4
II			
II			
⊢			
⊢			
∟			
∟			
∠			
∠			

MODULE COMBINATIONS WITH ADD-ONS	x2	x3	x4
‖			
‖			
⊢			
⊢			
∠			
∠			

PLACEMENT METHOD

example: Central Market Square

1 In-situ evaluation

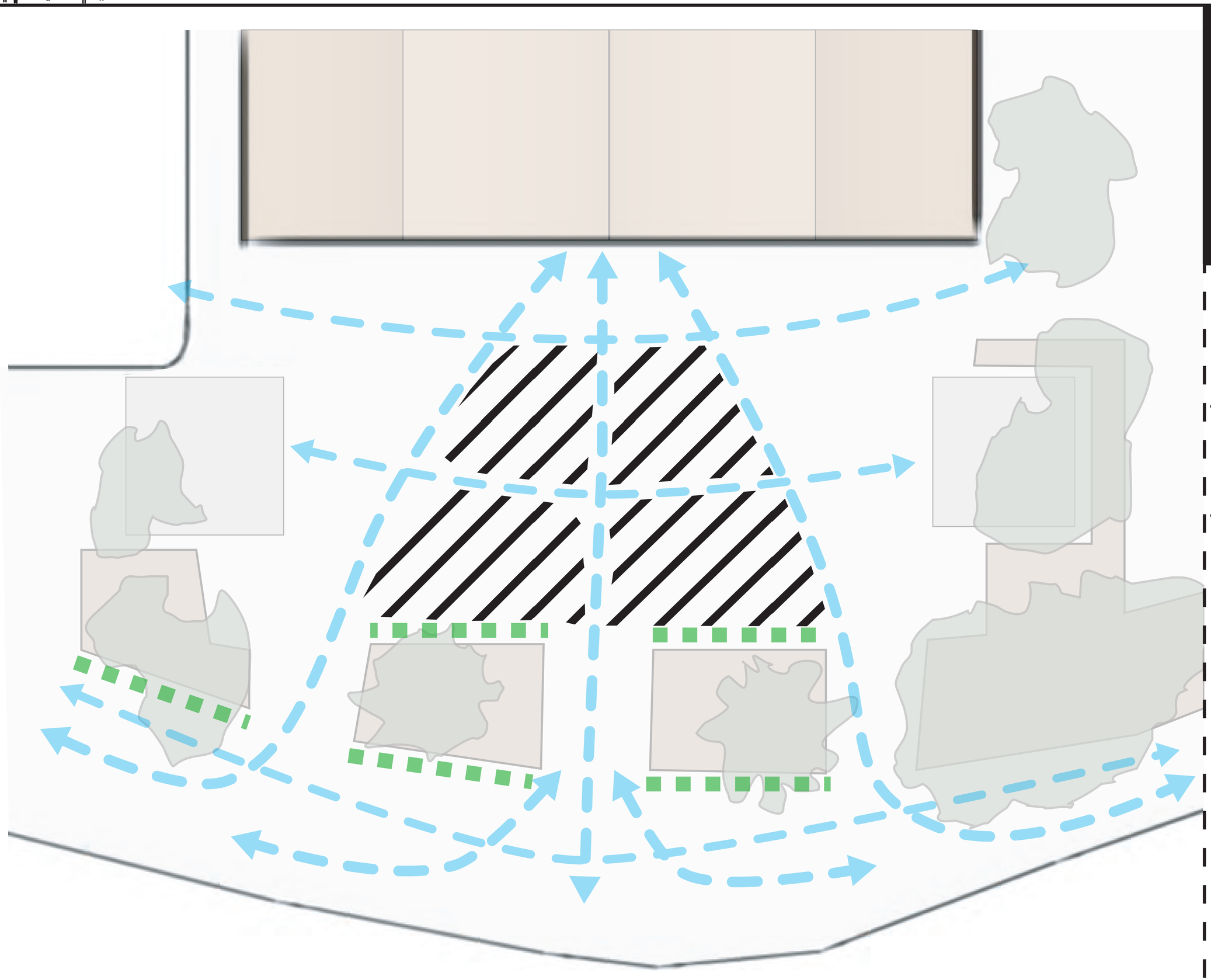
-Symmetry

-Movement towards the centre of Agora building

-Sitting areas in the perimeter

-Use of the square for cultural activities

-Lack of infrastructures



PLACEMENT METHOD

example: Central Market Square

2 **Posible placement zones**

-Spaces that do not obscure the existing circulation

-Preserverance and empowerment of symmetry characteris tics

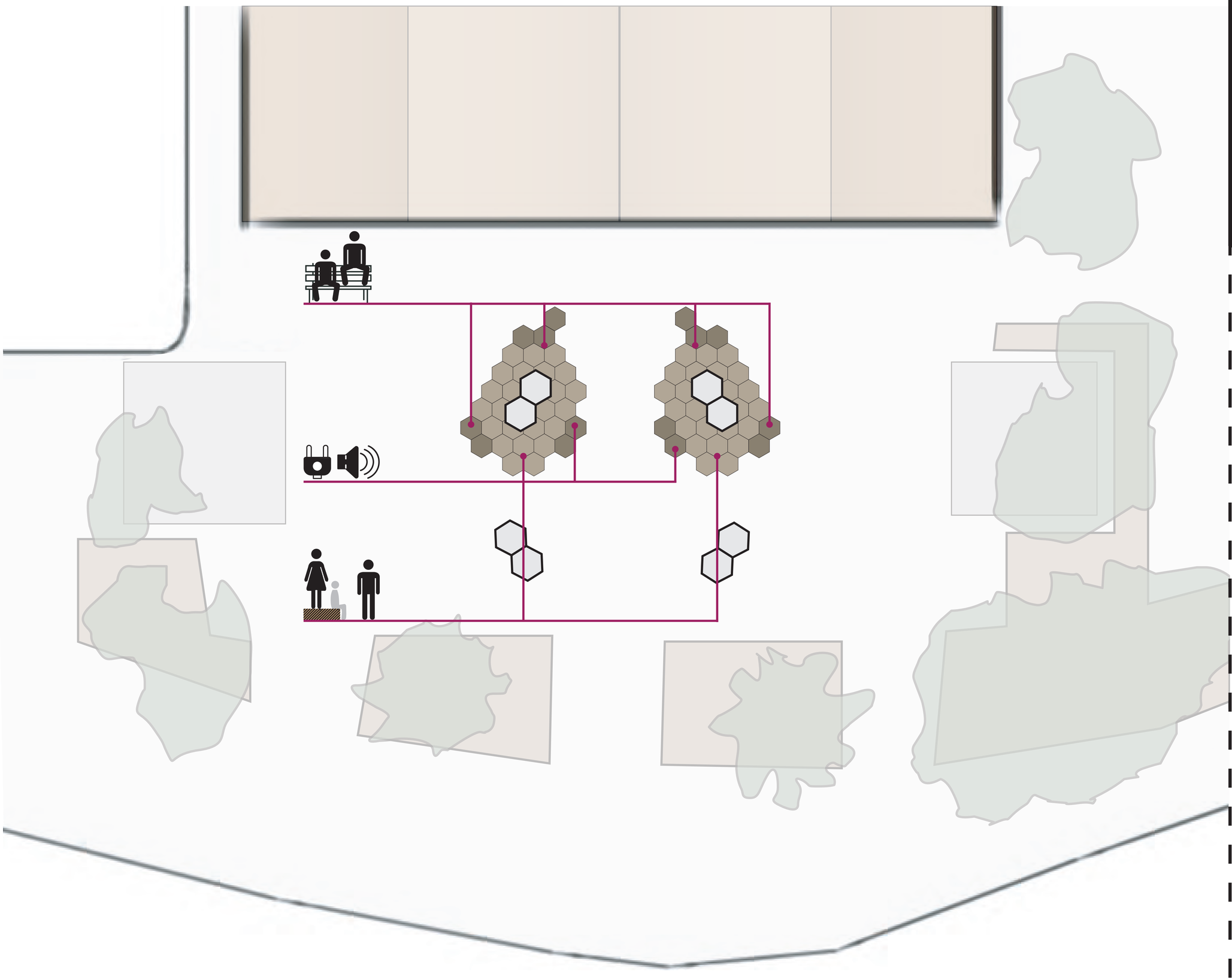
PLACEMENT METHOD

example: Central Market Square

3 **Modules layout in space**

-Preserverance of symmetry characteristics

-Optical connections



PLACEMENT METHOD

example: Central Market Square

4 **Embodiment of urban hardware and equipment**

-Creation of a raised deck

-Creation of sitting areas

-Speakers, electrica power

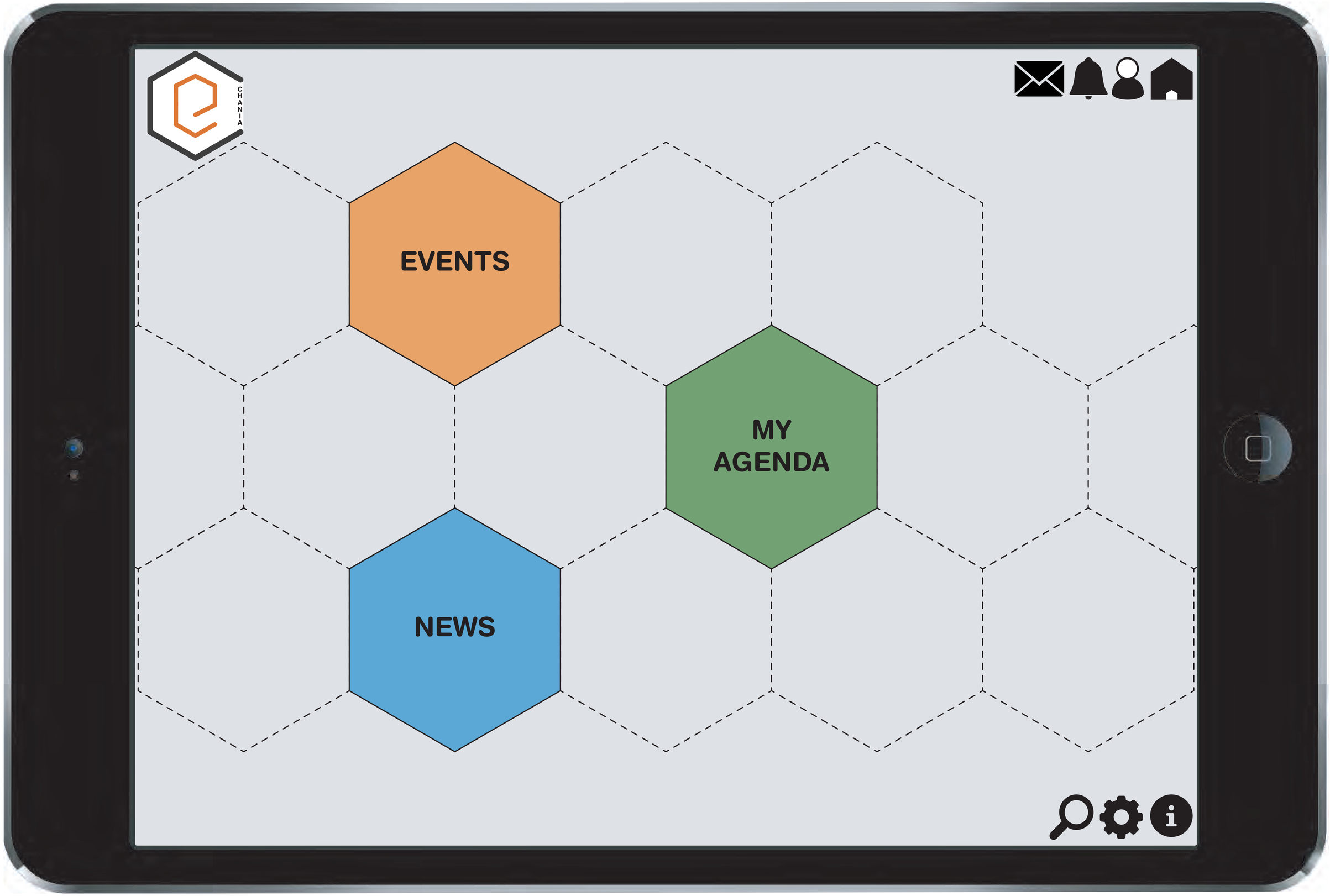
PLACEMENT METHOD

example: Central Market Square

5 **Spread of the equipment**

-Spatial diffusion of the equipment

-Privacy zones


CHANIA
EVENTS
MY AGENDA
NEWS









1



CITIZEN AS PART OF THE WHOLE

2

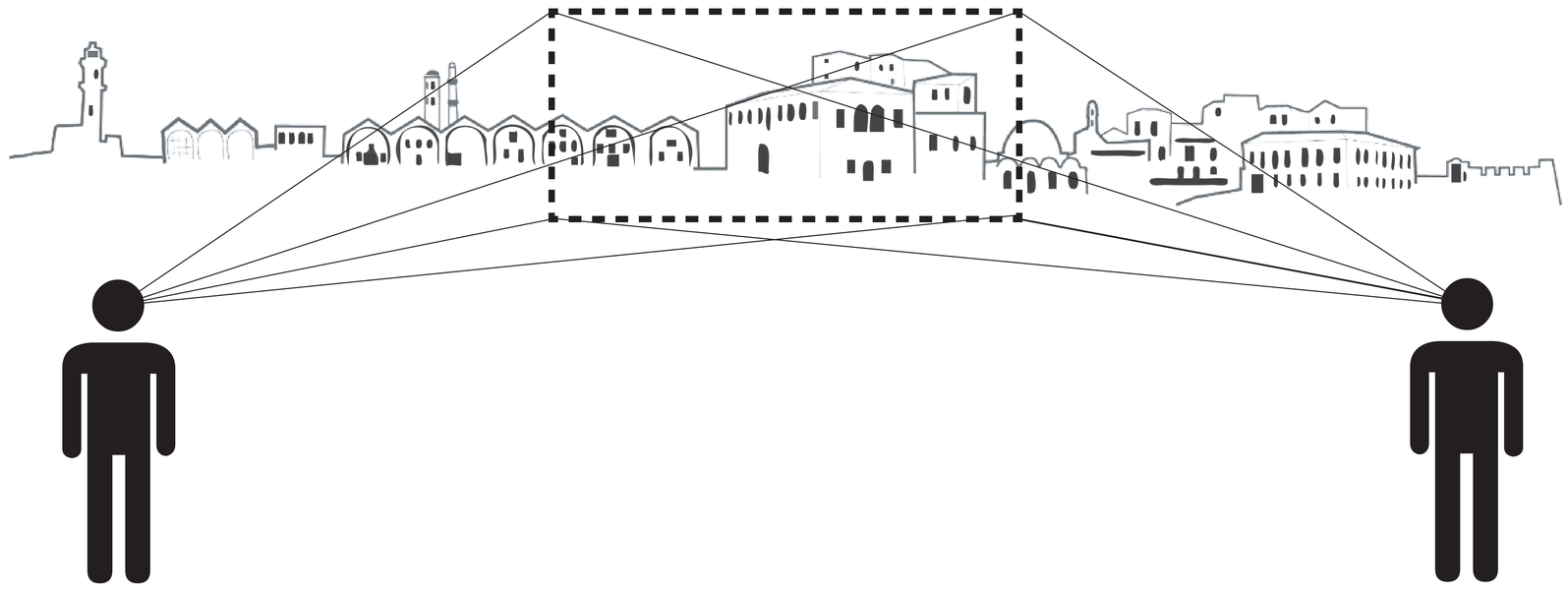


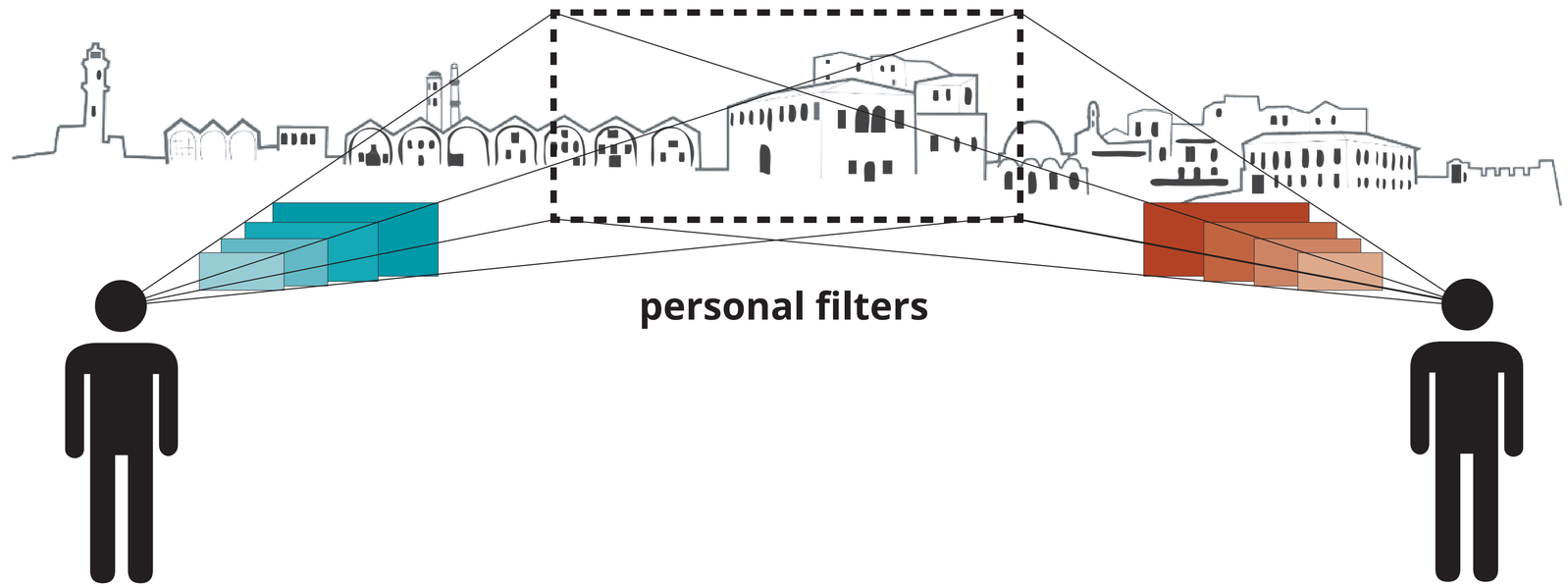
CITIZEN AS PART OF A GROUP

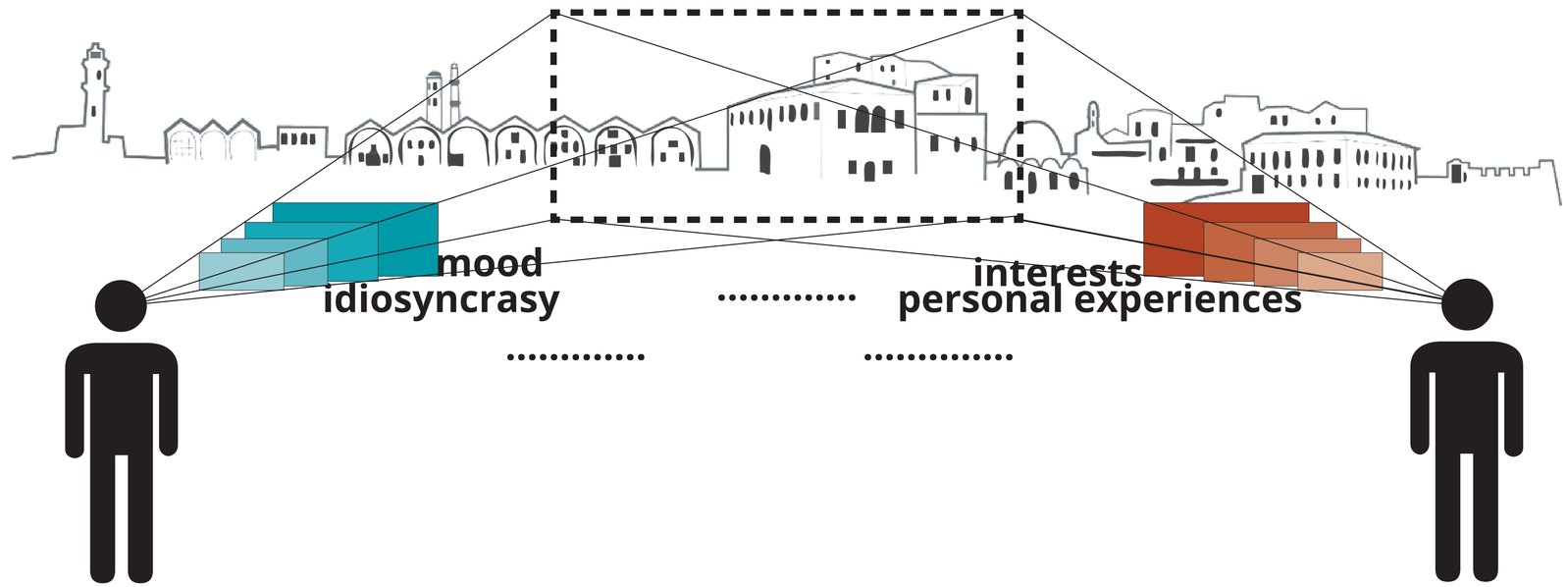
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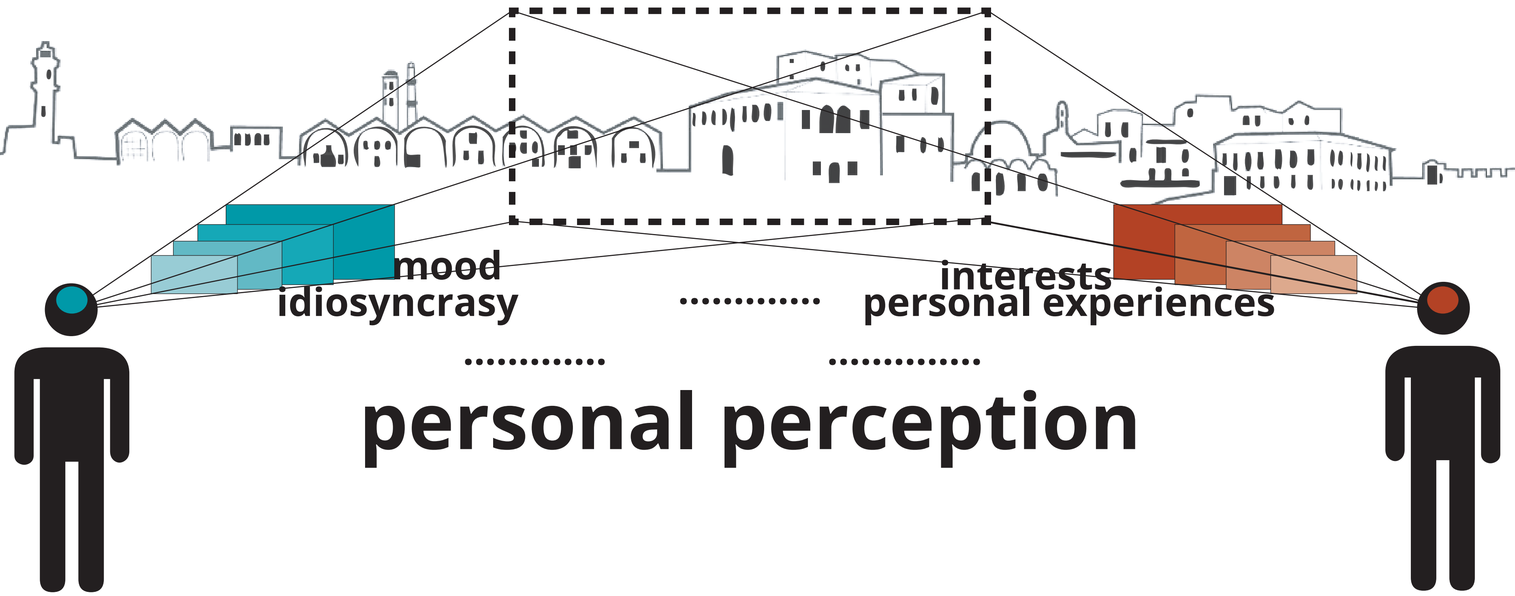


CITIZEN AS INDIVIDUAL

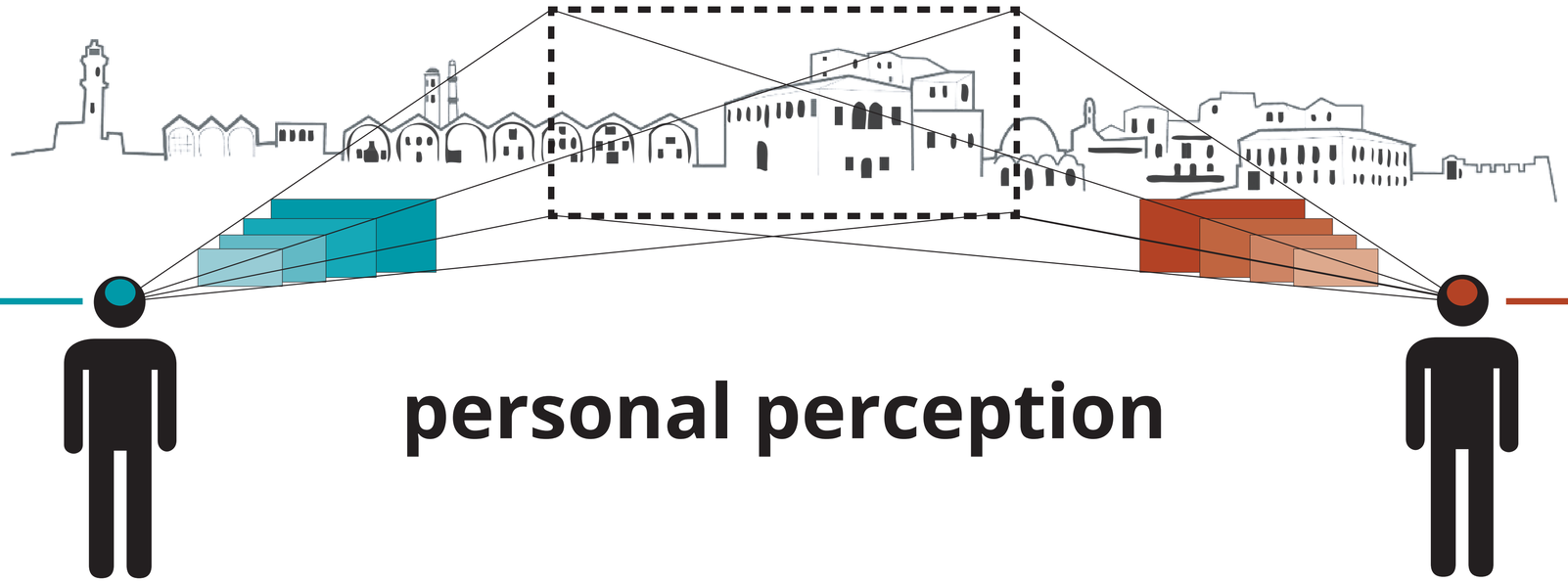



personal filters


mood
idiosyncrasy
interests
personal experiences


mood
idiosyncrasy
interests
personal experiences
personal perception

express



express

personal perception

INTERVENTIONS IN URBAN ENVIROMENT

EXPLORING & DISCOVERING IN URBAN ENVIROMENT

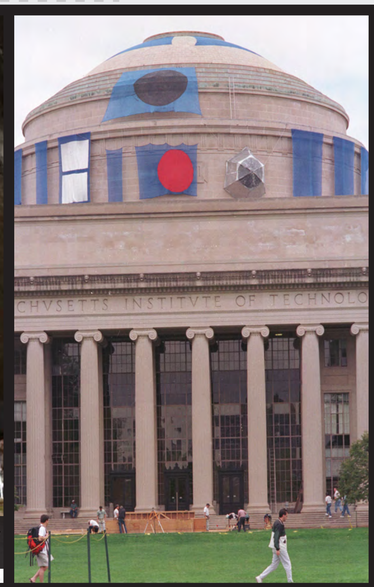
SOCIAL MEDIA

PERSONAL DIVICES IN URBAN ENVIROMENT







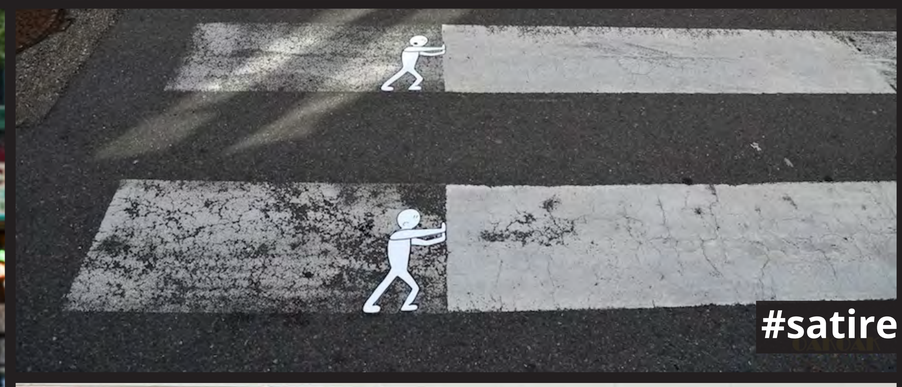


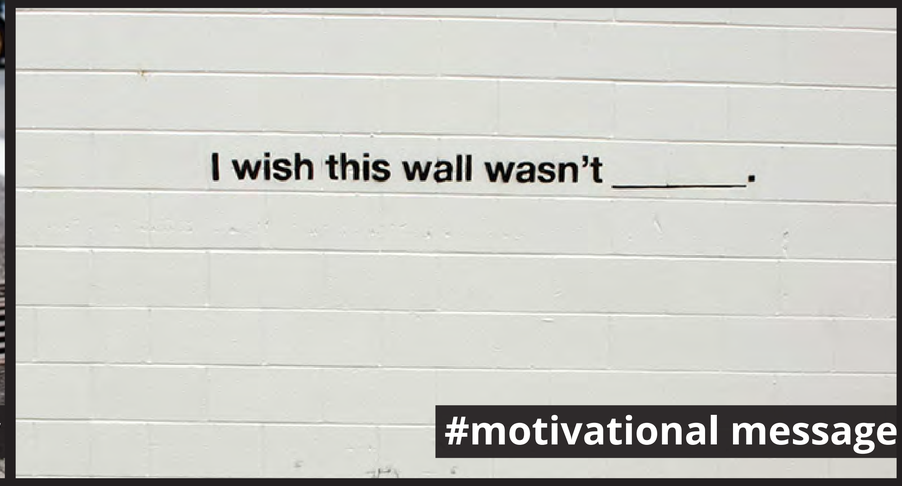












INTERVENTIONS IN URBAN ENVIROMENT

EXPLORING & DISCOVERING IN URBAN ENVIROMENT

SOCIAL MEDIA

PERSONAL DIVICES IN URBAN ENVIROMENT

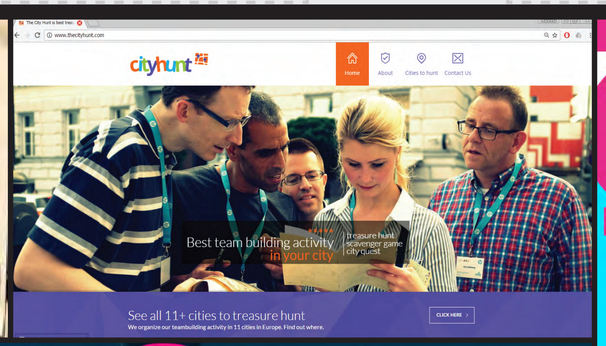


#walking



#cycling

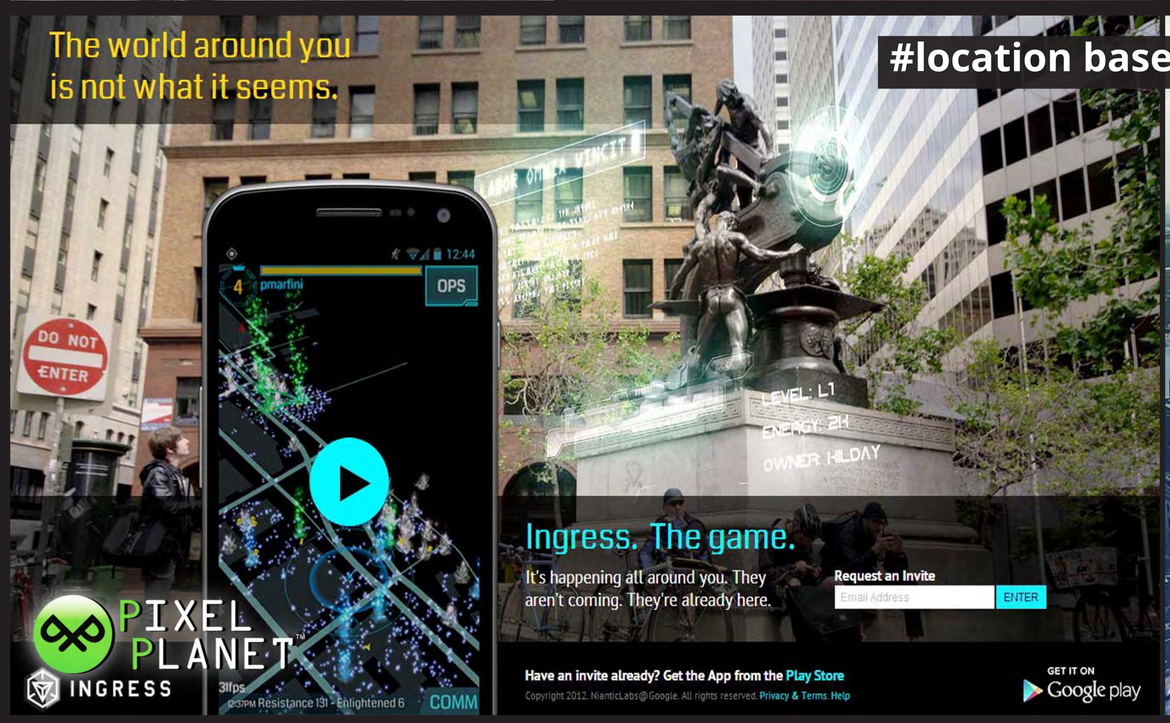








#activities#threasure hunting



#location based games#apps





IMAGE OF THE CITY | METHODOLOGY

INTERVENTIONS IN URBAN ENVIROMENT

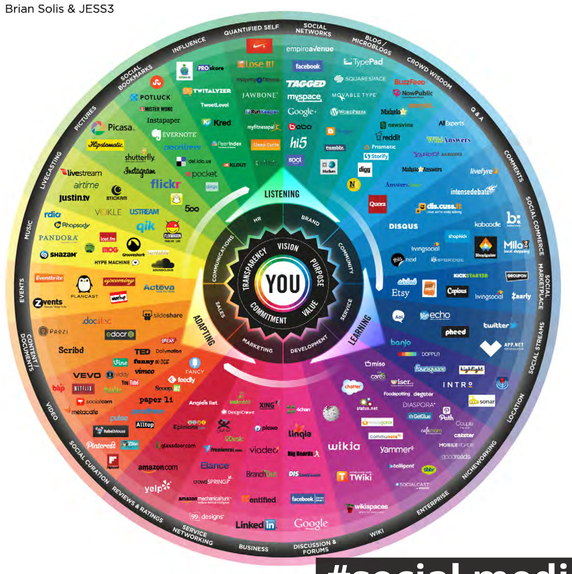
EXPLORING & DISCOVERING IN URBAN ENVIROMENT

SOCIAL MEDIA

PERSONAL DIVICES IN URBAN ENVIROMENT

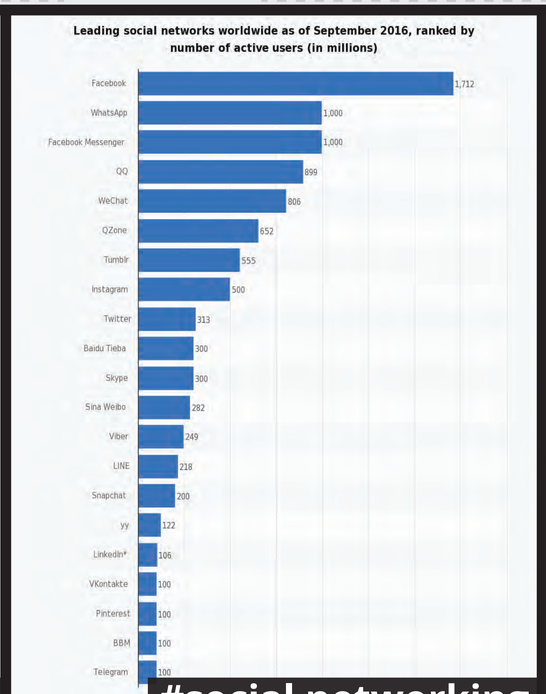
THE CONVERSATION PRISM

Brought to you by
Brian Solis & JESS3

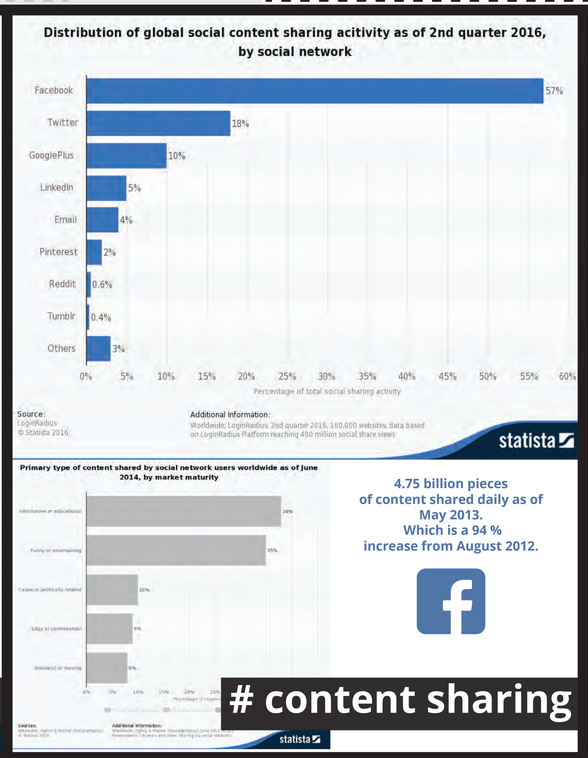


#social media

For more information check out conversationprism.com



#social networking



content sharing



11 AWESOME METHODS TO CREATE ENGAGING VISUAL CONTENT

WHY VISUAL CONTENT ?

- 94% — Articles with images get 94% more total views
- 81% — 81 percent of people only skim the content they read online.



Posts that include images produce 650% higher engagement than text-only posts.

- 84% — An estimated 84% of all communication will be visual by 2018.
- 3X — Posts with videos attract 3X more links than text-only posts.

METHODS TO MAKE CONTENT MORE VISUAL

- Eye catching and relevant photos
- Whiteboard videos
- Explainer videos
- Screencast
- Screenshoots
- Infographics
- Cartoons
- Interesting data visualization & statistics
- Instructographics
- Inspiring Quotes
- Memes

TOOLS TO MAKE VISUAL CONTENT

Canva
Canva is an online graphic design platform. It offers free access to a wide assortment of design tools and options, as well as premium options for paying customers.

Piktochart
Piktochart is a web-based infographic application which allows users without intensive experience as graphic designers to easily create professional-grade infographics using themed templates.

Greenshot
Greenshot is a light-weight screenshot software tool for Windows. Quickly create screenshots of a selected region, window or fullscreen. Easily annotate, highlight or obfuscate parts of the screenshot.

Skitch
Skitch is a free screenshot editing and sharing utility for Mac. The app permits the user to add shapes and text to an image, and then share it online.

Videoscribe
VideoScribe is software for creating whiteboard animations automatically.

Powtoon
PowToon is Web-based animation software that allows users to create animated presentations by manipulating pre-created objects, imported images, provided music and user created voice-overs.

WHERE TO GET FREE IMAGES

Unsplash.com Pixabay.com Pexels.com PhotoPin.com

References:
http://bit.ly/1LX4typ
http://bit.ly/1peeM-1
http://bit.ly/24WdkXv
http://bit.ly/100aXJO
http://bit.ly/stat287862
http://bit.ly/ssc85439

By : FastWebStart.com

#user's visual content



INTERVENTIONS IN URBAN ENVIROMENT

EXPLORING & DISCOVERING IN URBAN ENVIROMENT

SOCIAL MEDIA

PERSONAL DIVICES IN URBAN ENVIROMENT



 # effects in public space

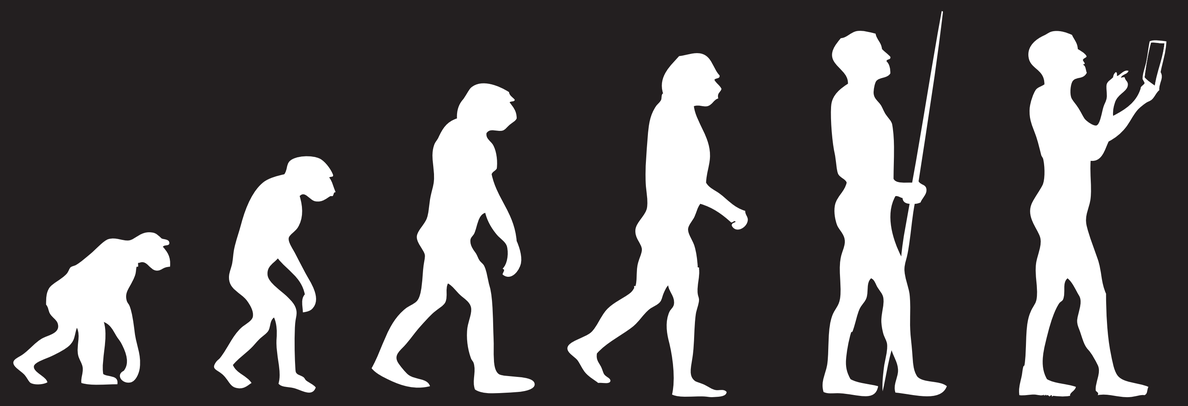






IMAGE OF THE CITY

METHODOLOGY

INTERVENTIONS IN URBAN ENVIROMENT

EXPLORING & DISCOVERING IN URBAN ENVIROMENT

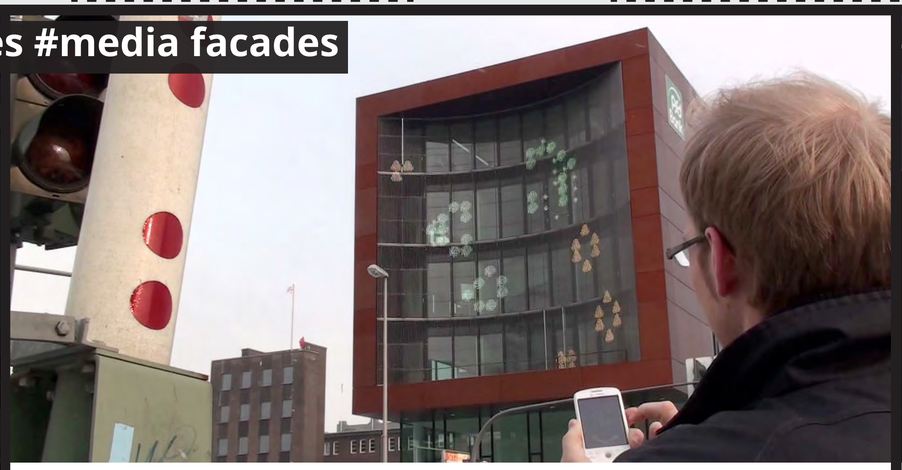
SOCIAL MEDIA

PERSONAL DIVICES IN URBAN ENVIROMENT

smartphones #media facades

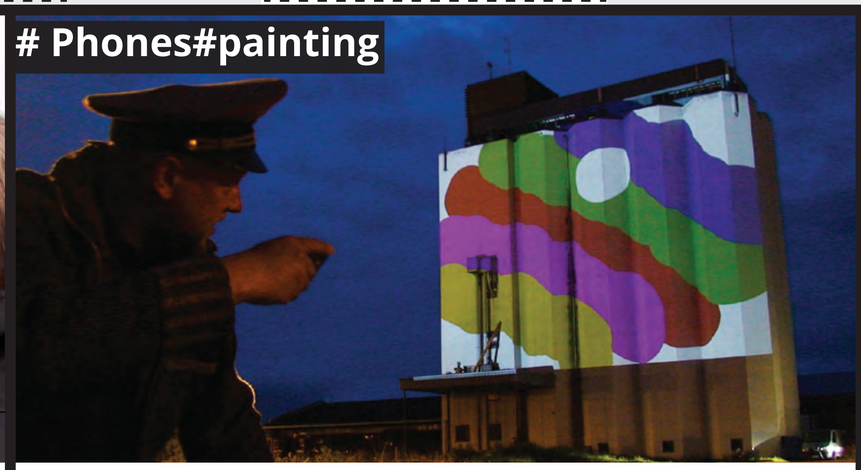


'Multi-user interaction on media façades through live video on mobile devices', Boring, S., Gehring, S., Wiethoff, A., Blöckner, M., Schöning, J. and Butz, A.(2011).



'The mighty untouchables: creating playful engagement on media façades'. Böhmer, M., Gehring, S., Löchtefeld, M., Ostkamp, M. andBauer, G. (2011).

Phones#painting



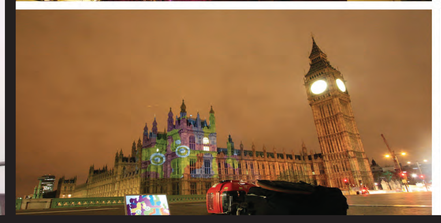
'MobiSpray: mobile phone as virtual spray can for painting BIG anytime anywhere on anything'. Scheible, J and Ojala, T. (2009).

















#first Ar#



#release microsoft hololens



#visions of future#mixed realities


SOCIAL MEDIA
INTERVENTIONS IN URBAN ENVIROMENT
EXPLORING IN URBAN ENVIROMENT
Sharing user's content
Digital intervetions
Physical enviroment
Social networking application
Mixed reality application
APP
Social network features
Location-based
Exploring features
Digital user's content apply to physical enviroment

MY PROFILE

EXPLORE

ALL PUBLIC FELLOW CITIZENS

ALL POPULAR RECENTS

NEARBY MAP

POST FLOW

Stathis VI
#Fantasy#Architecture
"Can you see him?"



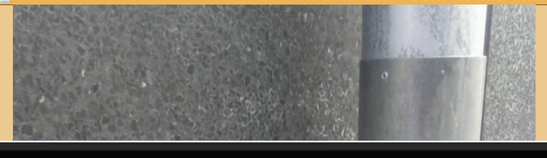
Discover 18
Vote 10 1
27 Comments
7 Repost

Eleni Lio
#Architecture#Infographics
"Only few will get it :)"



Discover 3
Vote 10 0
31 Comments
5 Repost

Michalis K
#Cinema#Anime
"Understand, star wars fans will. "

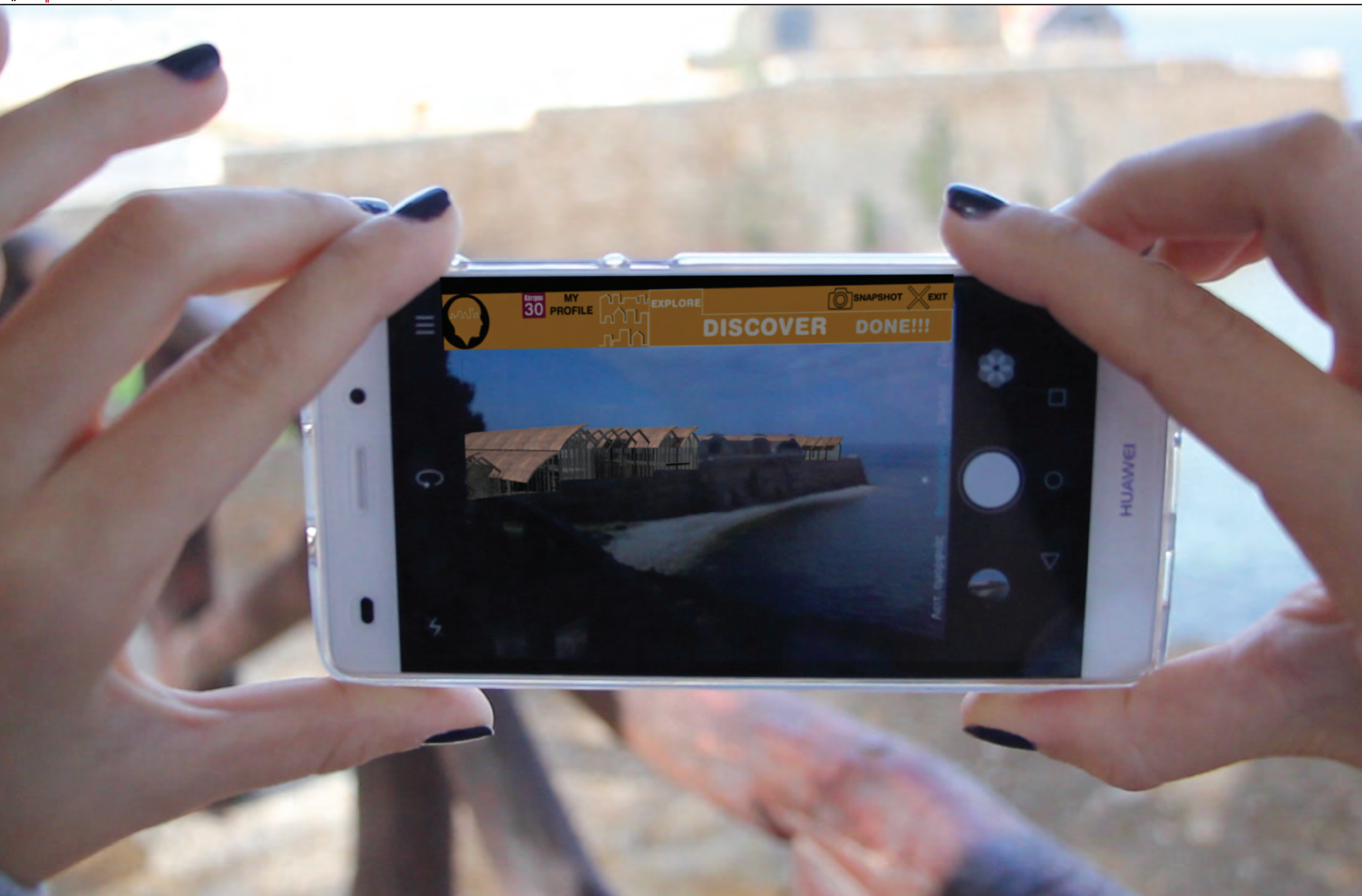


Discover 42

Ourania Alt
#Graphicdesign
" "Holy" Sunday secrets!!!"



Discover 21


MY PROFILE
EXPLORE
SNAPSHOT
EXIT
DISCOVER
DONE!!!
HUAWEI

CONCEPT

METHODOLOGY

APPLICATION

VISUALIZATION

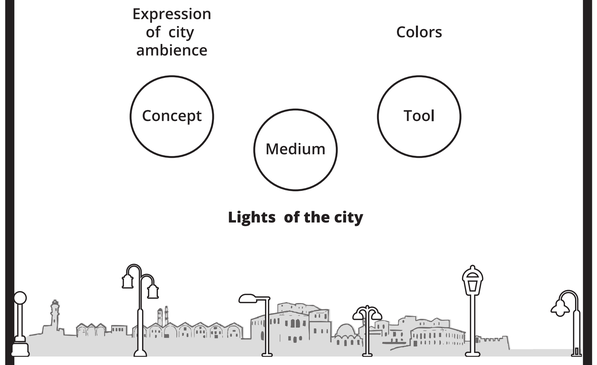
AMBIENCE OF THE CITY

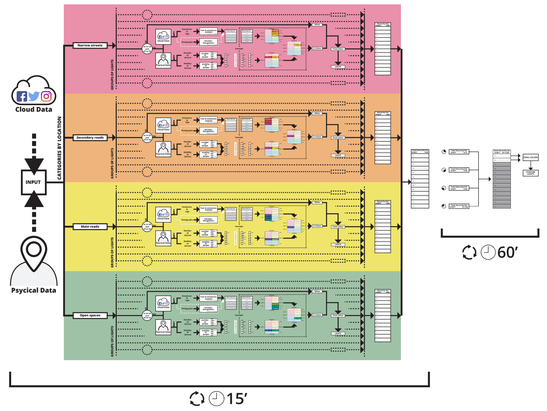
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CITIZEN AS PART OF THE WHOLE







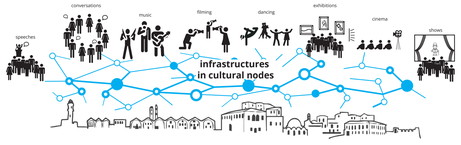


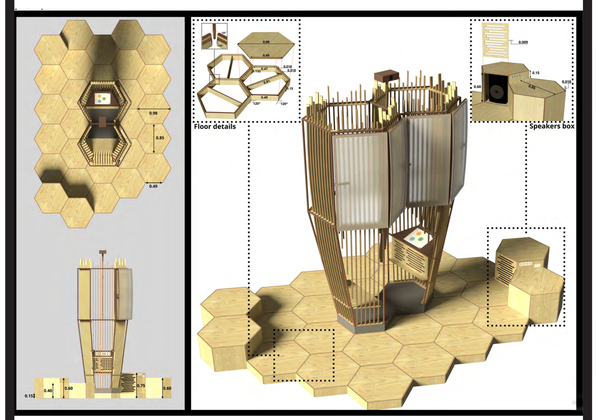
EVENTS OF THE CITY

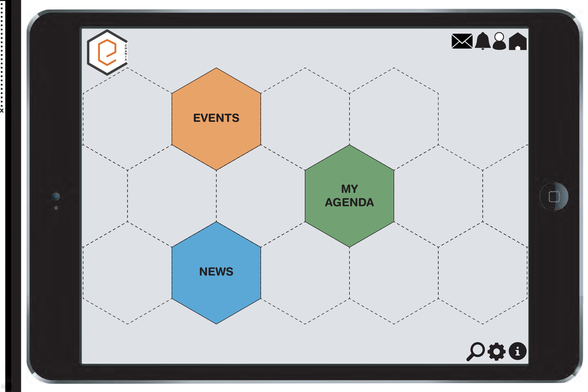
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CITIZEN AS PART OF A GROUP







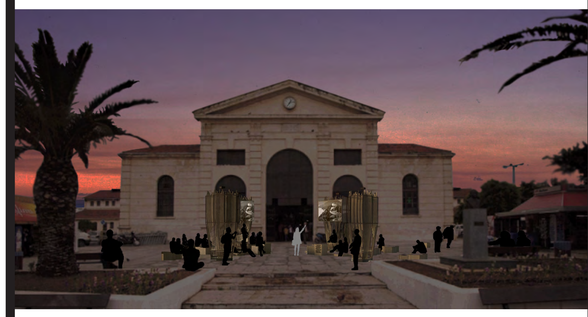


IMAGE OF THE CITY

3



CITIZEN AS INDIVIDUAL

