# Knowledge Regions Challenge urban game RESULTS

50<sup>th</sup> ISOCARP Congress Delft The Hague Workshop "How to create a sustainable knowledge region" 19<sup>th</sup> and 20<sup>th</sup> October 2015

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Workshop Hosts: TU Delft, City of Delft, City of The Hague, and Delft Design



# Workshop Method

Urban gaming is an explorative approach to urban planning, which uses gaming principles to understand and change built environment. This particular method translates elements from the digital and analogue games to the dynamics of planning, creating engaging city-building simulations to help make better policies, to generate new design ideas and to enhance communication between different stakeholders.

For the purpose of the 50<sup>th</sup> ISOCARP Congress Delft - The Hague Workshop with the theme "How to create a sustainable knowledge region", architect and serious games designer Milena Ivkovic (Blok74 Built Environment and Urban Gaming, Rotterdam, NL) created a gaming format (a "Challenge") based on the combination of analogue model-building (using custom-made gaming props) and the digital support (interactive application) to track down and verify the results. Using playfulness and competitiveness, the participants (players) created spatial and strategic solutions for the three levels of the sustainable knowledge region: Delft Campus, Delft City and Region Leiden – The Hague – Delft – Rotterdam.

The process of creating these solutions developed through the elaborated simulation, in which players took up the roles of the main existing actors in the present Campus, Delft City and Region situation. Each player was asked to visualise its roledefined development strategy (using game props) and to present it to the critical view of the other players and the general audience of the workshop. The feedback on the proposals was channelled through a voting process, which was essential to decide which strategy is the most acceptable for all the parties involved. All the stages of the simulation were recorded and displayed using digital support, giving instantly readable images of the different spatial solutions, voting results, and in-depth planning analytics.

Urban gaming method enabled an open, eyelevel communication, which is essential for the quality discussion between different experts in a workshop setting. The gaming sessions exposed the points of possible conflict between various stakeholders and at the same time recognized the possibilities for long-terms collaboration – the basics of the sustainable spatial development. The results of the workshop were concrete spatial and programmatic proposals for the development of the knowledge region, presented to the wider ISOCARP congress audience during the following 2-days sessions at the main Congress venue in Rotterdam. Strategic planning issues addressed by the gaming sessions

# Delft Campus level

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Stimulating the formation of the Living Campus concept, based on the premise that contemporary learning environment goes beyond the exclusiveness of the university buildings and mono-functional urbanism. The sustainable development of the campus lies in its re-connecting with the city of Delft, in more efficient usage and management of the buildings and public spaces, and in creating spatial conditions for tighter collaboration between the city, the academia and the knowledge-intensive businesses eager to find suitable productive environment. Not to be neglected - the significant population of students, teachers, researchers and professionals and making of the new programmatic formula's to meet their needs.

### **Delft City level**

Utilizing and profiting from the redevelopment of the "New Delft" train station area. By improving the connectivity, the quality of station space and easiness to combine different modi of personal transport with the facilities at the TU Delft Campus, the whole city increases it's competitive edge in the wider knowledge region. Establishing the better links between the Campus and the City on every level – economical, cultural, physical – is the basics of the sustainable development and maintenance of the existing high profile Delft has as a knowledge city. This process is closely entwined with the citizens of Delft and their needs and views on the future development.

# **Regional level**

The knowledge region between Leiden, The Hague, Delft and Rotterdam comprises on great variety of different academic institutions, research centers and knowledge-related businesses. To make this network even better and powerful, the named cities have to discover the potentials they already have (physical, political, environmental) and utilize them in collaboration with each other - a complex process that still has to find the right "operational mode" in the time to come. The harbour of Rotterdam, the concentration of engineering and design academia in Delft, the unique international/political position of The Hague and biosciences cluster in Leiden can profit from transitioning from the local urban scale to the wider regional one.



# Creating a spatial strategy with "Knowledge Regions Challenge" game

The aim for each gameplay is quite simple: to come up with a spatial programme and a strategy that will upgrade the existing situation of each of the three scales of the knowledge regions and receive the most support by other players at the table.

The creators of the programme and the realisation strategy that goes along with it are four small teams of players, acting from a colour-coded role. Each role has a particular mission, which is explained upfront. To realise their missions, the teams have a set of 15 programmatic icons mounted on the wooden blocks at their disposal, which can be placed on the gaming board - the large-scaled maps of the Campus, Delft City and the Region.

# The strategy pitch

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The teams place their programme independently, until all the programmatic icons are used. The moderator / game master of the workshop may introduce additional tasks at this point, to stimulate the collaboration and exchange of the programme between different roles.

Then the teams start with a short "strategy pitch", explaining what is their developmental vision and strategy. The aim of the pitch is to get all other players and the audience acquainted with the ideas of the each role.

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# The voting

After explaining their vision, the teams will get the chance to evaluate each other's proposals by voting – supporting or opposing certain programmatic icons. The voting develops in two rounds, starting with giving the negative votes. In this way, the possible conflicts and points of strong disagreement are revealed. In the next round, the teams get the chance to react to the criticism they've received, by defending their own (or supporting someone else's) programmes.

The votes are visualised by the stakeholder's blocks, wooden gaming props to mark the supported or opposed icons. By materializing the votes in this way, the board game becomes a dynamic display of agreements and disagreements, a strong visual indicator on the developmental "hot spots".

### The winning team

The voting round is structured in such a way that there are more possibilities to give negative votes then positive. Certain programmatic icons will thus receive more negative response, meaning the programme is not accepted and will be removed from the board. The winning team is the one who managed to keep most of it's programme – or, in other words, got the most validation from the other players. There is also a "deciding vote" – a special stakeholder block (usually reflecting the Mayor or other important political figure) that can help push one of the proposals to become the winning one.

At the end of the game the winning proposal is declared by reviewing the digitally generated score sheets and analytics.

# **Final results**

The "final design" of the sustainable knowledge campus, city or region comprises of all the icons that remained on the table. This unique "3D strategy sketch" serves as a visual starting point for the summary discussion, in which all the players draw conclusions about the conflicts, but also the possible collaborations and constructive ideas about how to develop sustainable knowledge campus, city or region. The discussion is supported by the digitally generated analytics of the gaming process, which give insights into building densities and programme structure. The analytics can also be followed "live" via projector / screen during the workshop.

# The making of the game props

The "Knowledge Region Challenge" is simulation created exclusively for the purpose of the ISOCARP Delft – The Hague Workshop. The content of the programme and the quantities stated at some of the icons are generated by workshop theme director in collaboration with the workshop hosts, in order to mirror as much as possible the real needs, capacities and issues relevant for all the Knowledge Region scales.

The roles reflect the real "powers" in the process of creating sustainable knowledge region, and the stakeholders designated to each role reflect the political, cultural, economical or social network within their reach and influence. As the game will show, some of the stakeholders' votes' weight more then the others, giving the different, more realistic profile to each role and the rationale behind their decisions. For players not directly familiar with the context of Delft-The Hague, these game elements give the possibility to learn more about the political and economical backgrounds essential to urban development of the region.



Development of the application / game digital support in Belgrade, Serbia



Mobility



UBER taxi mobility-on-the demand stop : maybe replacing the short-distance PT in the future



inter-camp transport service: door-to-door mobility between different institutes organized by students and for the students



spaces



New Impulses

tourist atrraction

continue from the

attractiong

visitors to

historical

Campus

Delft to the

Leiden Delft

Alliance HQ - a

new building for

the new knowl-

edge alliance

Erasmus

study spaces - in open air college the existing new use of public buildings or in the public space

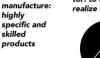
Innovation



Management







faculty real estate exchange / transfer of the sell: transforming institute: finding locations outside the TU Delft of Delft, in some other knowledge city in the region

Leisure

property

facility





swimming pool: senior livina: missing sport



budget hotel: for the exchange students and lecturers

21

New Lifestyles



bi-local living: appartements for students, researchers and lecturers who divide their life and work between two international universities

? \$

knowledge intensive manufacture: highly specific and



co-creation lab space: where different experts

can combine their knowledge





Campus

urban farming: bringing balance to the Campus environment

Nature, Energy and Ecology

Campus

selected programme

Culture

TICKE

open air cultural

Festival

event: the Campus

//////

local product market: perma-

or temporary

for lively public

at the Campus

nent

spaces

new landmark 120 m

Campus

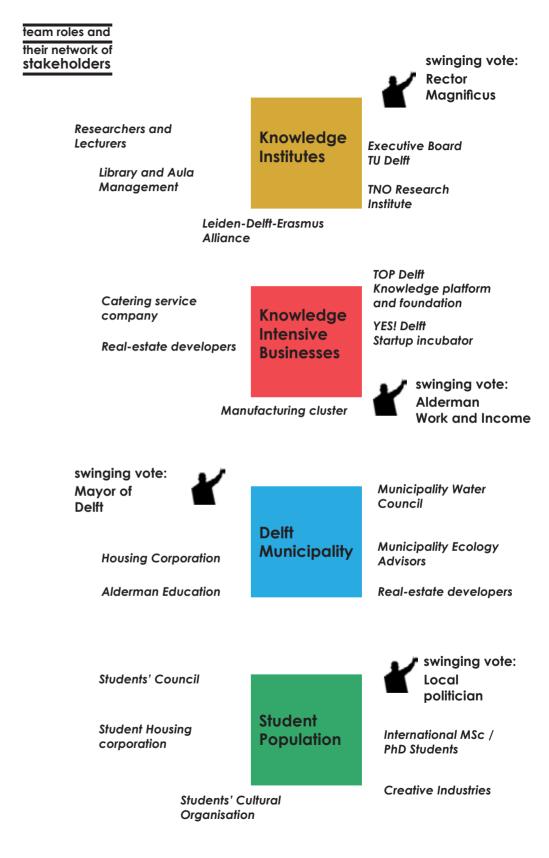
high: to distinguish the



Mekelpark New solar farm: Lake: a unique energy for the beach in the whole Campus



new nature: trees Eco-zone / Eco to be planted biotop: preservation area for specific nature



edae

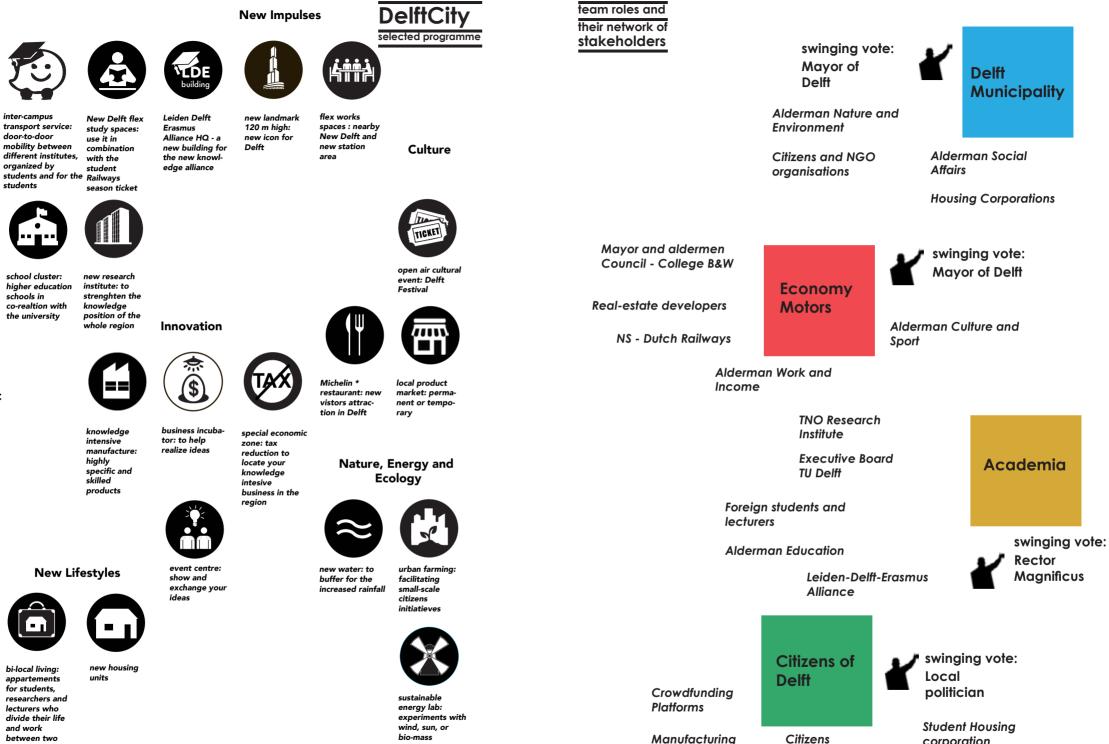
business incubator: to help realize ideas

expo: meet-andgreet the inovators and their knowl-

international street-food culture

mobile food cart:

an infusion of



Cluster

corporation

inter-campus door-to-door

Mobility

+

Education

Management

re-use of empty

the available building stock

buildings: better management of

Leisure

recreation

open air

facility: in the

organized by students and for the students

school cluster: higher education schools in co-realtion with the university

for students, researchers and lecturers who divide their life and work between two international universities

bio-mass

**Region DtH** 

selected programme

Housing

new

commercial

housing units

student

housing

**Collaborative Opportunities** 











New Delft flex study spaces: use it in combination with the student Railways season ticket

Leiden Delft Erasmus Alliance HQ - a new building for the new knowledge alliance

special economic

zone: tax

reduction to

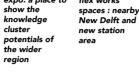
business in the

locate your

knowledge

intesive

region



transfer of the institutes betwwen major cities in the region



new research

strenghten the

position of the

re-use of empty

making between offer and demand in the region

buildings and terrein: match-

whole region

institute: to

knowledge



knowledge

manufacture:

specific and

intensive

highly

skilled

products



Leiden - Delft -Erasmus co-creaiton lab space: place for collaborative product development

Nature, Energy and Ecology



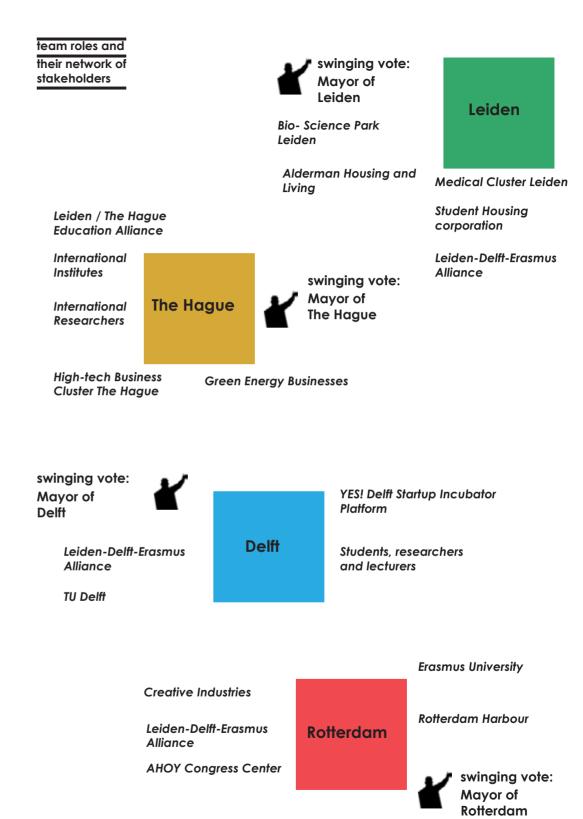
sustainable farm: lab for sustainable agriculture



solar farm: energy for the whole region



sustainable energy lab: experiments with . wind, sun, or bio-mass



# Workshop day-by-day **19th**October Game 1, Delft Campus

# **Gameplay Introduction**

TU Delft belongs to a very top of the world's technical universities. At the same time, it faces new times – and a changing role it has in the city of Delft and the region. The Education-Only Campus concept of the old days has to transform to a Living Campus model, more integrated, mixed-use structure that can answer to the challenges of new economy, lifestyles and politics.

# **Role missions**

### **Knowledge Institutes**

You are the representative of the TU Delft Knowledge Institutes, and have to think about the strategies on how to introduce new programmes to the Campus area and diversify the existing ones. Take into account the vicinity of the new Delft Station, the possibility to transform existing buildings, and the expanding of the Technopolis.

# **Knowledge Intensive Businesses**

Before the Living Campus, all the businesses and business-related research were locate on their own "island" in the Campus. Now look for the new solutions to intensify the connections between the academia, the up-and-coming startup's and traditional manufacturing sector.

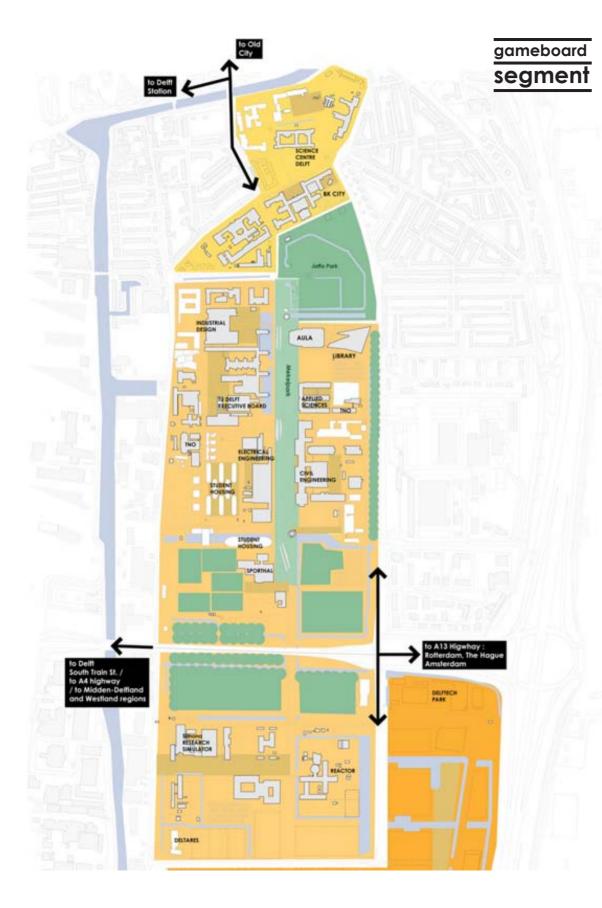
# Delft Municipality

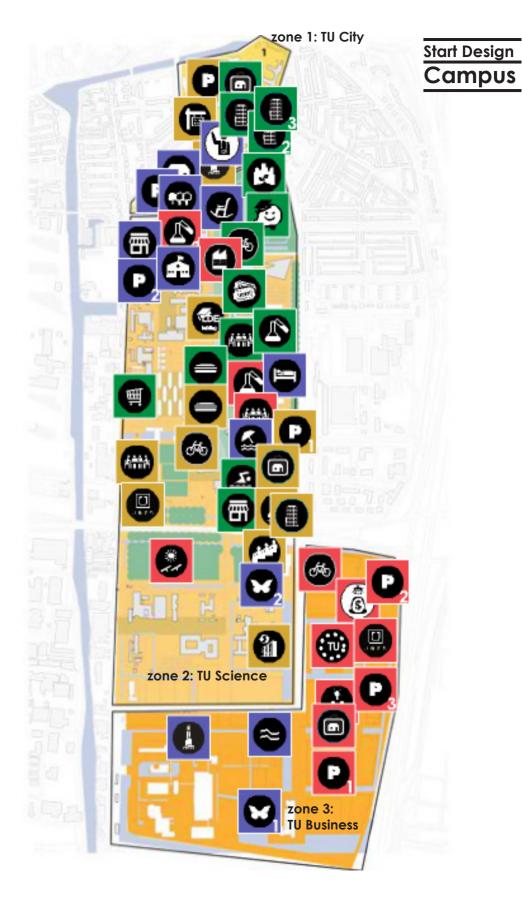
Campus wants to transform and grow, closer to the city, and closer to the potential new students, educators and businesses. Can you keep up with the speed of transformation and still preserve what is important on the municipal level – such as natural environment, sustainable water management and enough living space for all the citizens?

# **Student Population**

The biggest population of the Campus needs to be heard. It is not only the living accommodations that are needed – there are new forms of studying, commuting and socializing. Fill in the unforeseen gaps of traditional approaches to campus formula's.

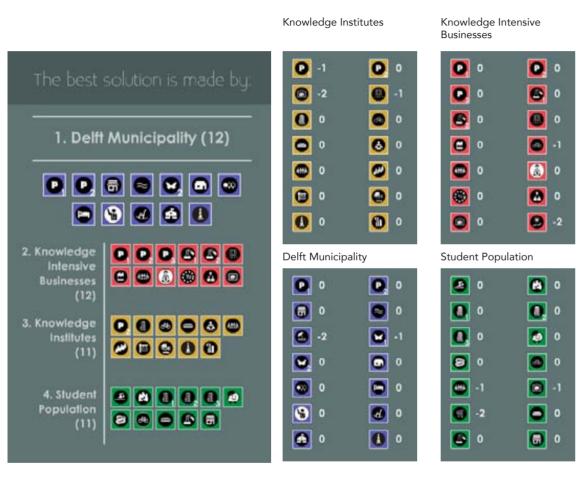




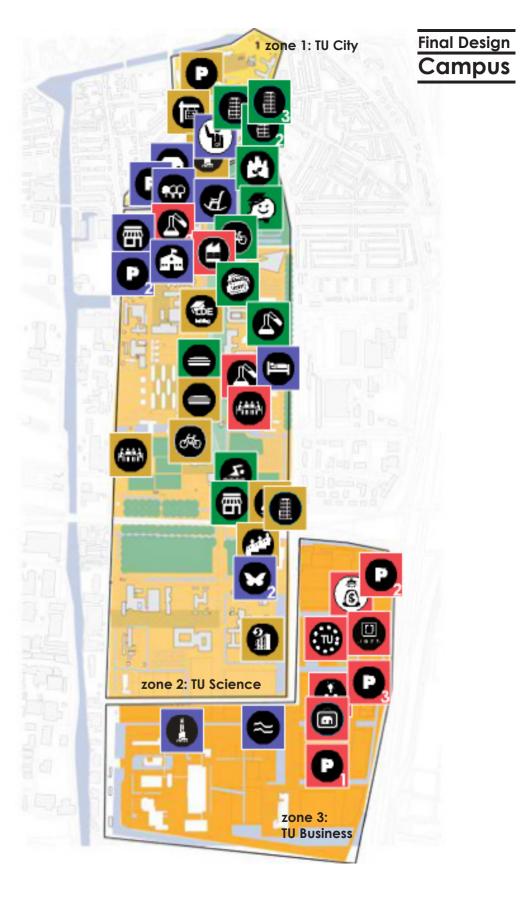


# collaborative and competitive decision making

# **Received votes**

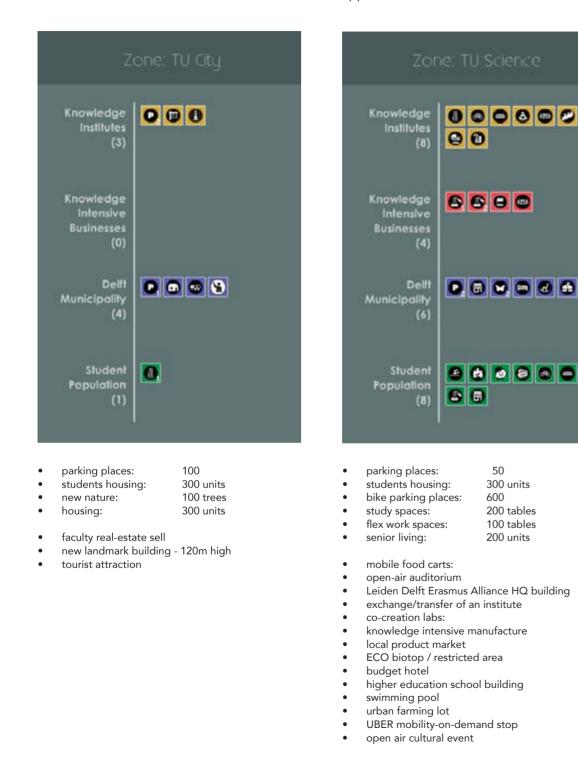


application screen shots



# Programme summaries per zone

application screen shots



Zone: TU Business				
Knowledge Institutes (0)				
Knowledge Intensive Businesses (8)				
Delft Municipality (2)	00			
Student Population (0)				
parking places:	150			

parking places: 150bi-local living: 50 units

2 x

1 x

1 x

1 x

3 x

1 x

2 x

1 x

1 x

1 x

1 x

1 x

1 x

1 x

new water: 1,5 ha

•	UBER mobility-on-demand stop	1 x
•	business incubator	1 x
•	expo	1 x

The common thread that weaved the elements of the final design design was the players' strong intention to fill the void created by the original Modernistic concept of the Campus. Although it has a very strong position already in the region, the Campus is underutilized when it comes to being a place of functions other then only academia and knowledge production. Proximity to the station area is by far the most important developmental spark for the Campus. The northern part (named the "TU City") should retain its distinct identity (dominated by the BK City historical building) and further integrated with the environment. Fundamental to this integration is scale and identity. TU City development should "feel" like it belongs to the urban tissue of Delft.

The "TU Science" part of the Campus, where all the major faculties and institutes are located, should further develop the central axis around the existing Mekel Park. This axis is to ensure that the new programme will strengthen the link between the existing educational programme and the "Living Campus" mixed-use concept – with more cultural, commercial and housing functions.

For the most southern part of the Campus, the "TU Business", players proposed a phased development. The existing buildings are kept as a framework and used as the "pioneers" of the knowledge oriented business. The area also still has the potential to develop substantial portions of nature and open water, needed for better micro climate management.

# **Built-up Densities**





# **19th** October

# Game 2, Delft City

# **Gameplay Introduction**

Delft is a knowledge city. Much of its economical development is linked with the development of the TU Delft Campus, the nearby Technopolis business park and the New Delft station area redevelopment.

In the Delft City Game, we will explore the best spatial strategies to combine these powerful processes in the city. Although there is already a significant synergy between the major roles involved, there are also issues of disagreement and potential conflict, as well as a field of unexplored possibilities and collaboration ideas.

# **Role missions**

# Academia

You are the representative of the several major institutes, research centra and faculties located in the TU Delft Campus.

The Campus is just minutes away from the New Delft redevelopment area. Use that fact to develop a programme that will benefit not only the Campus, it's employees and students, but also the Technopolis.

# **Delft Municipality**

The city will prosper with the New Delft development and the intensification of the area surrounding the new train station. Not only the Campus and the businesses in Delft will benefit, but also the citizens of the municipality. Use your influence to secure the quality of life, make sure that living and working environment gets upgrade, and that Delft becomes even more attractive to visitors.

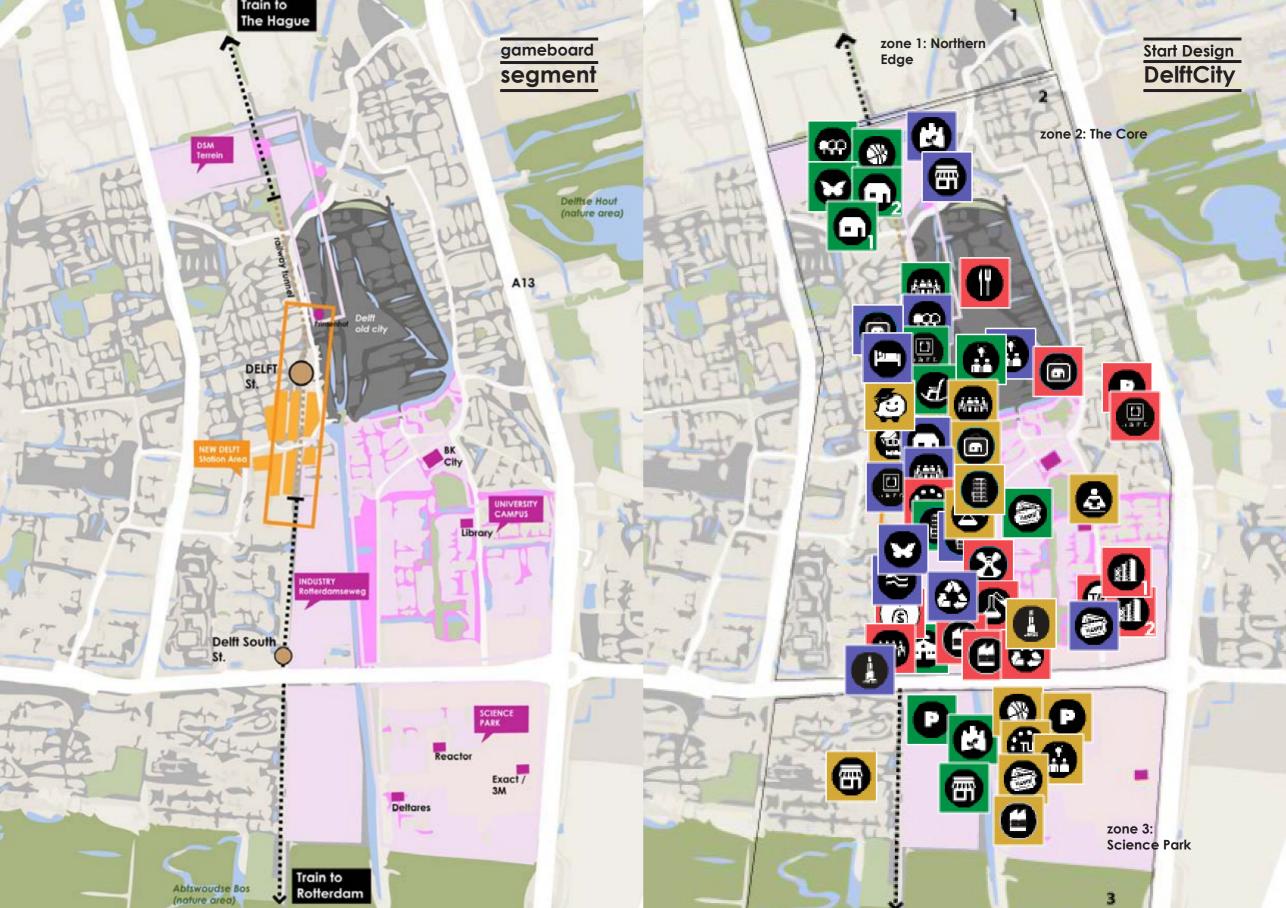
# **Citizens of Delft**

There are a lot of changes going on in the city. Delft aims to become the knowledge centre of the whole of Netherlands. But will there still be place enough for everyday life? You are the advocate for the citizens of Delft initiatives and needs!

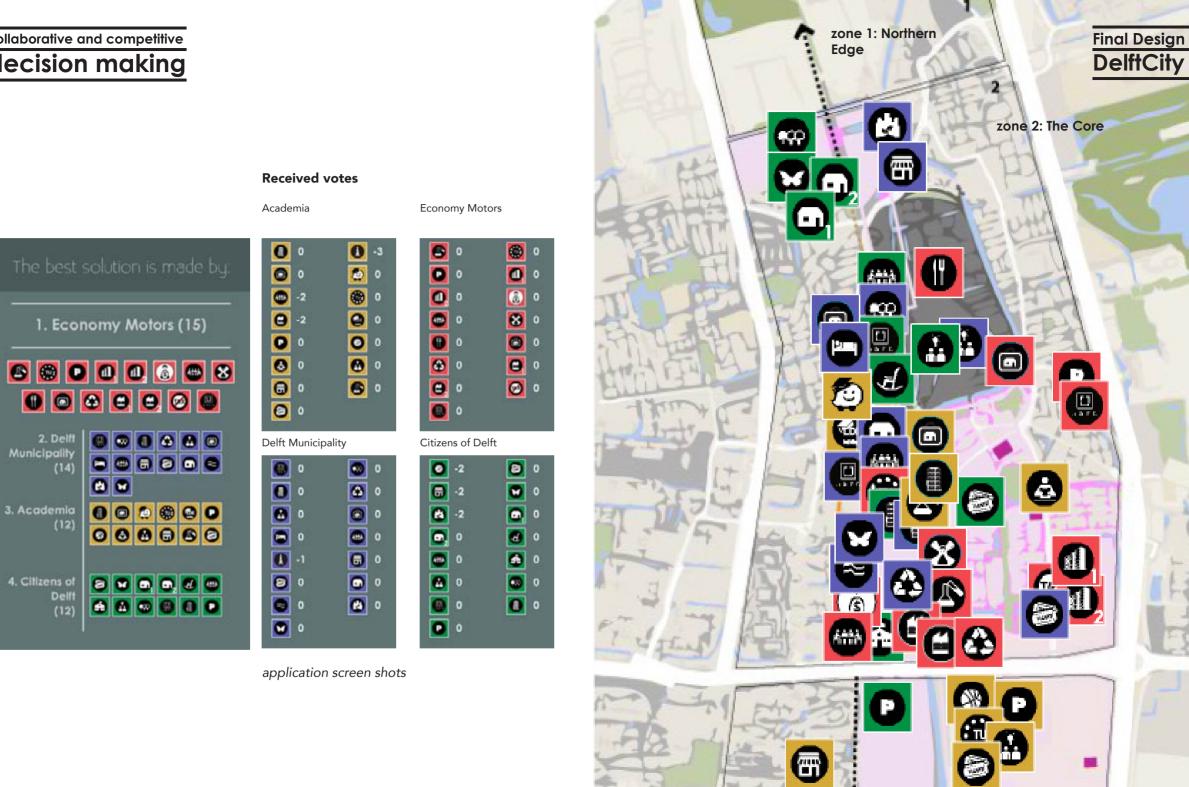
# Economy Motors

You are the representative of several outstanding businesses and innovation motors of Delft. The station area has got a complete makeover, and several locations nearby will be redeveloped. Grab the chance to fill in the gaps, and define a perfect combination of programme that will boost the "knowledge-based services and manufacturing" and overall economy of Delft.





# collaborative and competitive decision making

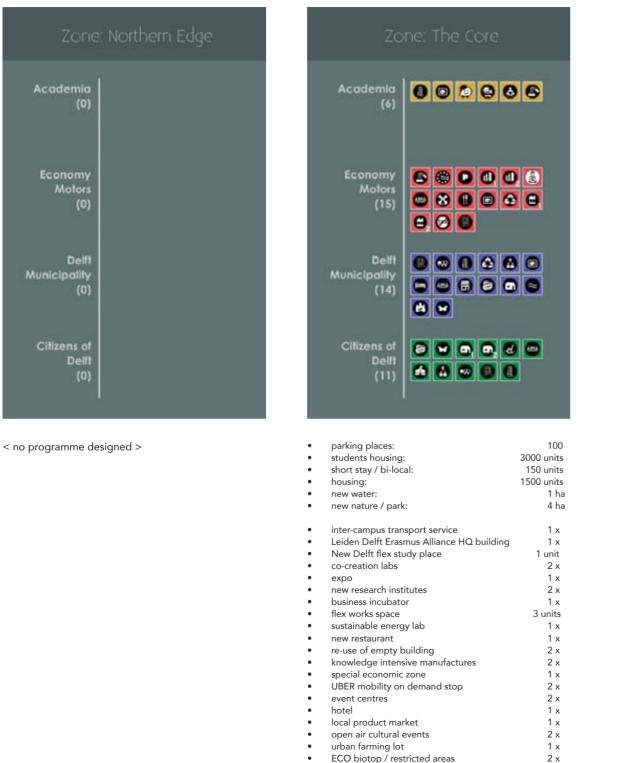


zone 3: Science Park

3

# Programme summaries per zone

application screen shots



senior housing

school cluster

1 x

1 x

Zone: Science Park				
Academia (6)	© 0 0 0 0 0 0			
Economy Motors (0)				
Delft Municipality (0)				
Citizens of Delft (1)	٥			

٠	parking places:	200
•	expo	1 x
•	recreation facility	1 x
٠	event centre	1 x
•	local product market	1 x
٠	open air cultural events	1 x

On the Delft City level, the players were very vocal about the types of the development around the New Delft area that would benefit the intensifying of the knowledge-related economy. A lot of new opportunities were created in the "Core" area, in combination with new ways of mobility and several citizens' initiatives.

One of the consensual points among all the stakeholders was re-development of the remains of the industrial terrain to accommodate more diverse housing types. The final design placed the emphasis of new programme along the Schie canal and the railway line, bringing up the concept of "railway corridor as the lifeline of knowledge region" to the light.

# **Built-up Densities**





# **20th** October Game 3, Region DtheH

# **Gameplay Introduction**

The relation between Rotterdam, Delft, The Hague and Leiden is to become more complicated – they all aim to gain wider international and national profile through collaboration as the knowledge region. How is this collaboration possible? How can the cities pool their assets together? Or are there still some competitive issues which can not be solved so easily?

# **Role missions**

# Rotterdam

Next to the Erasmus University, the city has developed a unique mixture of it's "industries", transitioning slowly from the traditional harbour, transport and manufacturing activities to innovation, knowledge-based services and creative production. Can you find right programmatic formula's to further intensify this diversification?

# Delft

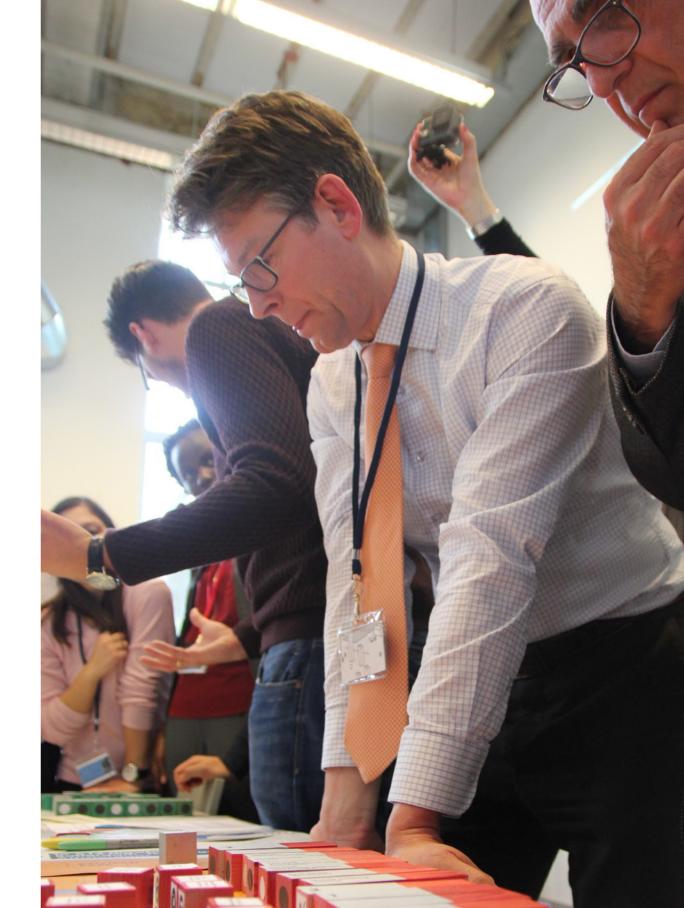
With the new station development, and an internationally well-known technical university, but with limited space to expand, Delft seeks to find new ways of keeping up the profile. Find a way to position all the spatial demands and environmental improvements within the existing frameworks.

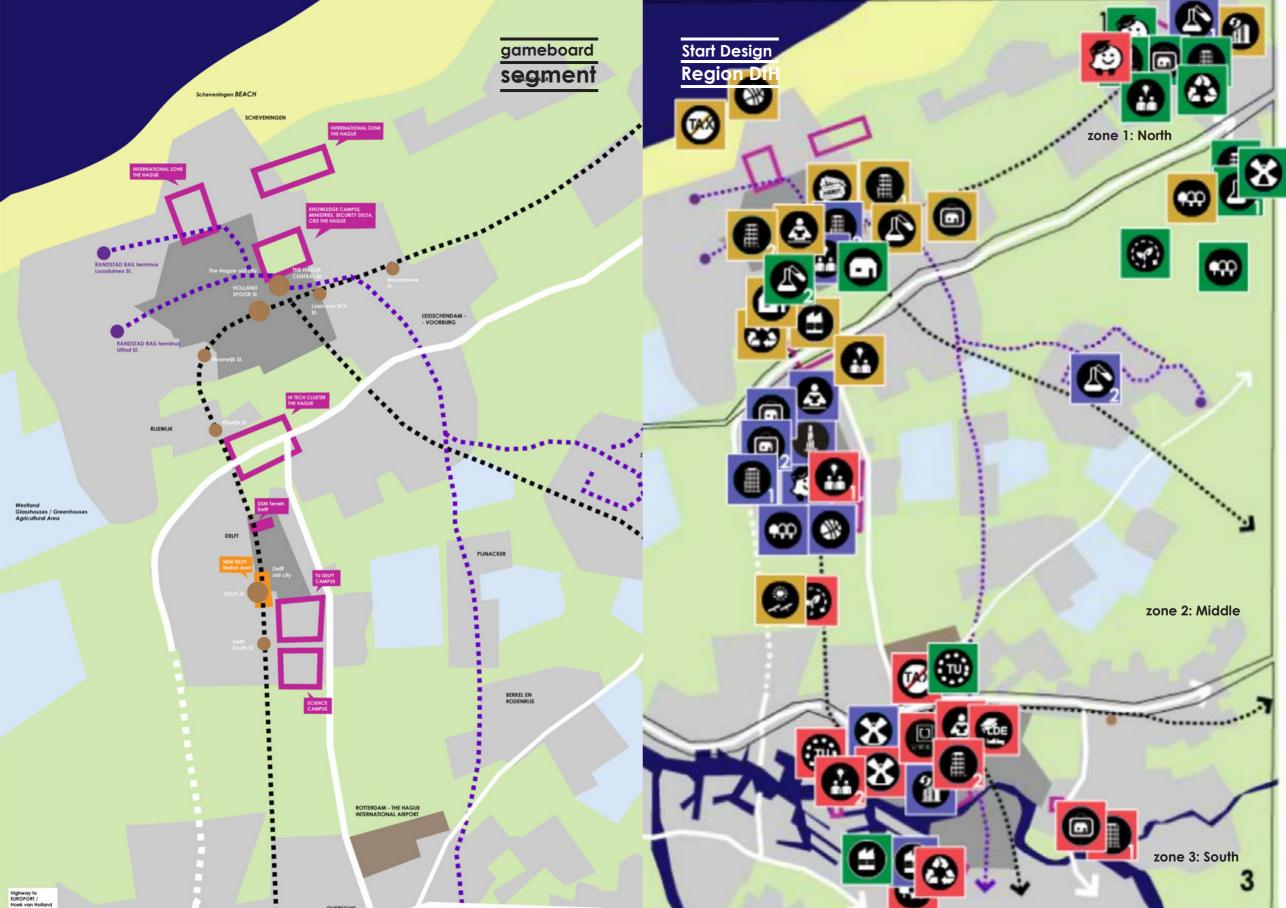
# The Hague

Known for its unique location at the North Sea, The Hague has a lot of potential to offer within the network of the knowledge region cities. Discover and visualise those potentials, by using the international profile of the city and the excellent infrastructural connections it has?

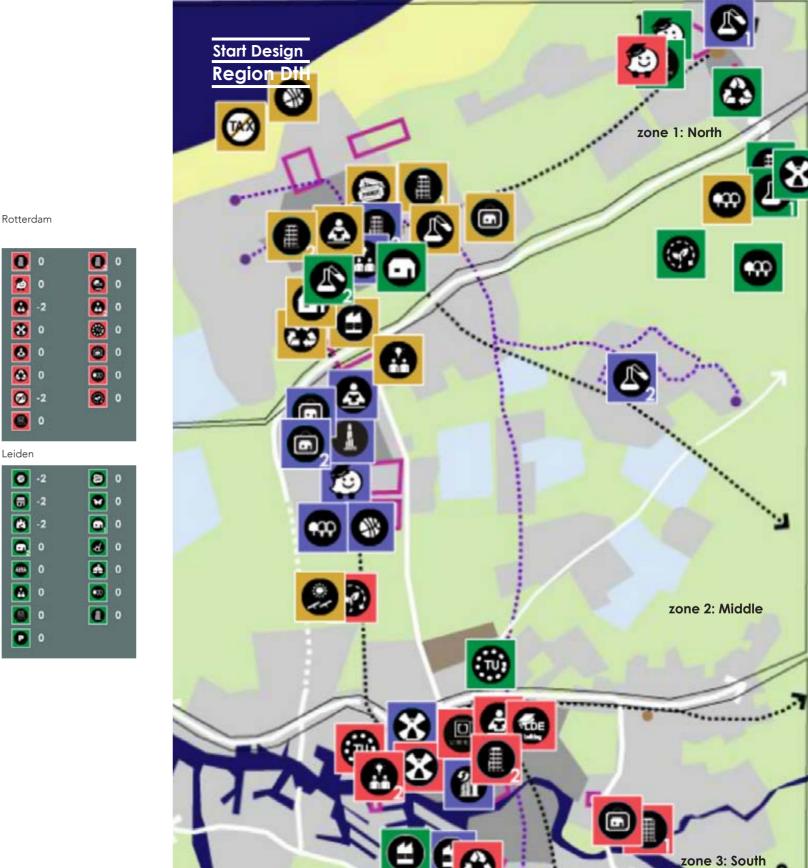
# Leiden

The city is well-known for its centuries old university, still very much located in the historical centre and in the smaller campuses in the nearby vicinity. Can Leiden overcome its rather distant position from Delft and Rotterdam, and intensify it's academic relations with The Hague?





# collaborative and competitive decision making



3

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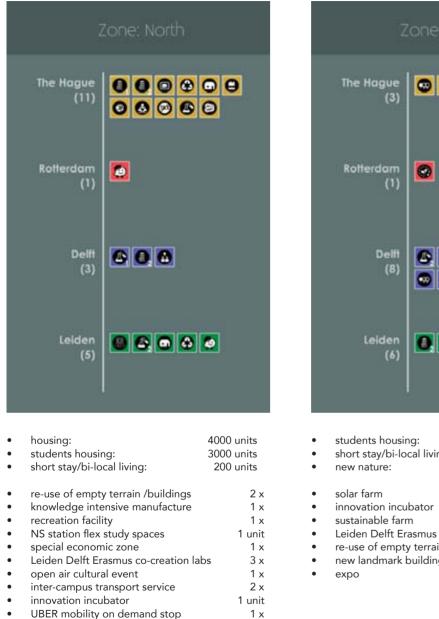
**Received votes** 

The Hague

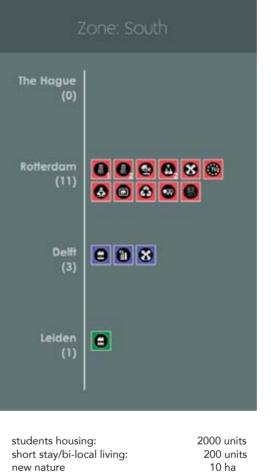
application screen shots

### Programme summaries per zone

application screen shots



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0		Rot
: I living:	1000 units 400 units 30 ha	<ul><li>stude</li><li>short</li><li>new r</li></ul>
ator mus co-creation labs errain /buildings ilding 120 m high	1 x 1 unit 2 x 2 x 1 x 1 x 1 x	<ul> <li>Leide</li> <li>innov</li> <li>re-use</li> <li>sustai</li> <li>expo</li> <li>NS st</li> <li>UBER</li> <li>know</li> <li>excha</li> </ul>



**Built-up Densities** 

len Delft Erasmus Alliance HQ building 1 x vation incubator 1 unit se of empty terrain /buildings 1 x ainable energy facility 2 x 1 x station flex study spaces 1 unit R mobility on demand stop 1 x wledge intensive manufacture 2 x exchange / transfer of an institute 1 x The key results of the Region urban gaming simulation are the establishment of the consensus points between the knowledge region cities. These points established the boundaries to be used to ensure the realisation of a common, sustainable knowledge region, as well as to create a concept plan that is responsive to the many opportunities and constraints. The heated up discussion was outlining what and where key programmes should be located and how the access and infrastructure should be provided.

# Conclusions

CAMPUS



MAKING A LIVING CAMPUS: NEW WORKING AND LEARNING ENVIRONMENT

CITY



INTEGRATE THE CAMPUS WITH THE CITY BY NEW STATION REDEVELOPMENT

REGION



WIDER PROFILE THROUGH COLLABORATION

As the two inspirational workshop days have shown, urban gaming is a useful simulation tool for developing urban strategies and increasing the creative momentum between different parties involved in the planning process. For the participants of the workshop, (both the local planning professionals - from Delft, The Hague and Leiden - and the international group of consultants, planners and civil servants), this tool enabled a new perspective on the discipline of urban planning. It also provided a framework for investigating the question of the knowledge region Delft – The Hague.

The gaming workshop gave the participants a strong feeling of involvement in an open process. This outcome was confirmed during the preparatory sessions which theme director Milena Ivkovic held at TU Delft, de Delft Municipality and the Hague Municipality during June and September 2015. In the context of the ISOCARP Congress, the gaming workshop gave international participants the opportunity to understand more of the underlying currents behind the making and sustaining a knowledge region: who is involved in the process, why certain decisions are being made and how different standpoints are incorporated into the strategic plan. It was a mutually exciting experience, which helped to build momentum and interest in the communication and co-creation as factors of successful spatial planning. This outcome was also illustrated with the Workshop Poster displayed at the Congress Main Venue in Rotterdam.





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