



# LEEUWARDEN EUROPEAN CULTURAL CAPITAL ECO-ACUPUNCTURE: CATALYSING URBAN TRANSFORMATIONS

A REPORT ON THE DESIGN RESEARCH BY THE VICTORIAN ECO INNOVATION LAB  
 FOR GEMEENTE LEEUWARDEN AND PROVINSJE FRYSLÂN

**LEEWARDEN EUROPEAN CULTURAL CAPITAL**  
**ECO-ACUPUNCTURE: CATALYSING URBAN**  
**TRANSFORMATIONS**

A report on the design research by the Victorian  
Eco Innovation Lab for Gemeente Leeuwarden and  
Provinsje Fryslân.

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# INTRODUCTION



## THE CONTEXT: CITIES CLIMATE CHALLENGES AND THE NEED FOR TRANSFORMATION

We are almost halfway through the period that has been described as ‘the critical decade’ (Hughes and Steffen, 2013), being the time in which our decisions and actions on climate change will determine whether we succeed globally to limit temperature rise to less than 2 degrees. It is increasingly recognised that the main focus for global action in this decade will be cities. More than half the world’s population now reside in cities and their contribution to global greenhouse gas production is estimated at 75%, even though they occupy only around 2% of the global land area. Nearly half of the world’s cities are already experiencing the effects of changing climate (UNEP 2011). The implication is clear – over the coming decade cities will be engaged in a significant and rapid process of transformation, of existing urban infrastructure and established pattern of living, as they de-carbonise

their economies and to adapt to climatic changes that are already becoming evident.

In this period of climate transformation, it is the very essence of what makes cities so socially and culturally successful – their complexity – that presents the greatest challenge and, importantly, offers the greatest hope for success. Cities are a human invention; as they grow, their infrastructure, their physical form, their cultural characteristics become intertwined systems – complex and embedded, forming together the very essence of a particular city – making rapid transformation very difficult. These tightly interlinked systems support urban life, giving each city its particular cultural and economic identity (or in more current parlance, its liveability).

The ‘de-carbonisation’ of the city involves, for example, a process of ‘dis-embedding’ of all its fossil fuel energy dependencies – reducing total energy consumption and switching to non-

carbonaceous energy sources. That will require changes to many physical elements of the city (most obviously buildings and transport). Also, the infrastructure and form of any city reflects the climate conditions of its location. New climate patterns and extremes weather events can threaten the resilience of established infrastructure. Climate responses – mitigation and adaptation – means transforming the infrastructures of provision of cities (e.g. energy, water, food, transport, shelter, waste, products and services and information).

One characteristic of the development of the infrastructures of provision for most cities is an increasing separation of consumption from production; most of the resources on which city life depends are produced well beyond the city boundaries, isolating them from the lived experience of urban citizens. Sometimes the very idea of the city is that it is a ‘refuge from nature’, obscuring the real bio-physical dependence of the city on natural eco-systems (as well

as the social processes that turn those ecosystems into goods and services).

In the last decades, interest in cities as a focus for action on climate change has derived more from a recognition of their apparent agency -the expression of interest, willingness and ability to make changes. The process that resulted in the application and selection of Leeuwarden as an EU Cultural Capital is an example of a wider phenomenon – the increasing evidence of the social, cultural and political interests of cities as actors in national and even international affairs. Cities (and networks of cities) are active in adopting greenhouse reduction targets and investing in programs to reach them. The contribution of cities to national economies in many nations is disproportionately significant and that reflects their success in providing the conditions that support creativity and innovation.

### **TRANSFORMATION, THE CULTURAL CAPITAL PROGRAM LEEUWARDEN AND ECO-ACUPUNCTURE.**

The transformation required for a sustainable future will involve significant changes in patterns of consumption and lifestyle for urban citizens. The engagement of urban communities in the co-creation of possible futures is becoming a critical step in the formulation of policies and strategies for climate action. The EU cultural capital program provides an extraordinary opportunity for cities to engage culturally with their populations in charting future pathways. Leeuwarden has set an critical example of focusing social, economic,

environmental and cultural policies and community engagement in building a path to the future. This has made the process of working with the city in the Eco-Acupuncture program both exciting and rewarding. Also, because of the history of the city and its development based on distributed community terpen, the distributed transformation approach of Eco-Acupuncture has been enthusiastically received.

This report sets out the proposed interventions based on the Eco-Acupuncture methodology and the work by the team – assisted by Australian and Dutch masters students – during 2015-6.

### **THE ECO-ACUPUNCTURE PROGRAM – OVERVIEW AND HISTORY**

*“At times of great transformation the only way to predict the future is to design it.”*

Eco-Acupuncture as a program was developed in in 2008 in Australia following research on the needs of cities and communities as they confronted the challenges of climate change and sustainability more generally. Cities that understood the pressures for transformation defined their needs broadly as:

- Strengthening their networks to build new alliances between scientists and policy makers and the institutions of governance, research and education (particularly local universities);
- Developing a clear understanding of possible trajectories for transformation that could decarbonize city economies at the same time as building resilience;

- Generating a broad community sense that the future is open to change
- Developing and testing processes of planning for (re) development that can engage and empower their communities in shaping that development;
- Stimulating creativity, a desire for experimentation and the pursuit of social and technical innovation

Eco-Acupuncture (EcoA) commenced as an experimental program of the Victorian Eco-Innovation Lab (VEIL) at the University of Melbourne ([www.EcoInnovationLab.com](http://www.EcoInnovationLab.com)). It builds on VEIL’s research programs that aim at defining 25 year non-business-as-usual futures and understanding pathways in social and technical innovation to realise those futures.

VEIL uses a design-research approach; investigating environmental challenges and exploring design options for their possible resolution. Eco-Acupuncture moved VEIL’s focus from manufactured products and buildings into the wider urban domain, to address the complex systems of urban life and catalyse urban-city transformation, to increase resilience and deliver rapid decarbonisation. Based on previous research and extensive consultation with city councils VEIL responded to the needs of cities with a program that has three critical features:

1. The design exploration of distributed (localised and networked) solutions for resilient infrastructure – energy, water, food, transport, waste, information.
2. The use of particular processes of engagement designed for individual, community and institutional actors to explore futures that are ‘permissible, desirable and possible’.



3. Generating visualised representations of possible futures, as 'glimpses' of new conditions – new physical form, new technologies, values, lifestyles.

The visualisations (glimpses) of transformed (25 year) urban living are used as a tool in the engagement process. When a degree of consensus about the features of desirable futures has been reached, the EcoA program turns to the design of many small interventions for the near future that can turn the trajectories of development towards the envisaged futures. There are many characteristics of these EcoA interventions but two are of highest priority:

- They should be based around – and clearly demonstrate – the potential of a shift to distributed systems (energy, water, food and so on);
- They should be of (relatively) low cost in order to increase the likelihood of their realisation and to encourage experimentation (they are of low-risk should they fail).

EcoA has operated and been continuously refined in Australia since 2008. In 2012 Eco-Acupuncture International was launched with a project in Florence Italy. EcoA operates as a future-design practice, bringing together university researchers, design academics, professional designers and masters students in architecture, urban design, landscape, and so on. In this way the program delivers research and proposals for real 'living laboratory' change as well as advanced practice for the education of emerging professionals.





# ECO-ACUPUNCTURE LEEUWARDEN 2018



## THE PROCESS AND THE SITES OF INTERVENTION.

The Eco-Acupuncture program has grown internationally with work in Florence (Italy) in 2013, and Rotterdam in 2014. Leeuwarden – as the EU Cultural Capital 2018 – became part of the international Eco-Acupuncture program in late 2014. The Leeuwarden bid for EU Cultural Capital proposed to use the intense cultural investment of the program as a driver for social, economic and environmental development of the city – with Lwd2018 as a deflection point in the historical development of the city.

With the support of Leeuwarden City, the Province, NHL and the University of Melbourne, the Eco-Acupuncture program began with a variety of engagement processes starting in 2014 to consider visions of the city in 25 years time – Leeuwarden 2040. There were multiple visits to the city during 2014-5 by the Eco Acupuncture principals Chris Ryan and Michael Trudgeon and at the beginning of 2015 a project team of 18 began work on an analysis of the



city, its current and projected environmental and social challenges and the 2018 bid program. In April the team travelled to Leeuwarden and set up an atelier for three weeks, based in the Blokhuispoort. This visit commenced with a day of presentations from city officials and those involved in the Lwd18 program. An elaboration of the 2040 city vision began as a half-day engagement workshop at NHL (with 30 invited local residents and officials). Every night at the atelier there were regular presentations of progress on design research and concepts, open to visitors from the city and the province. At the end of the visit, the work-in-progress was presented at a public event at NHL opened by the Mayor Ferd J.M. Crone and Alderman Sjoerd Feitsma. The design work then continued in Australia with another visit to Leeuwarden by the principals in July 2015. Finally in October 2015 the concepts were presented in two exhibitions in the city.

Eco-Acupuncture has developed concepts and visions for eight interventions at various sites across the city.



These sites and their design proposals all respond to the Lwd2018 objectives and program. They suggest various ways in which existing facilities or land within the city can be developed to support the delivery – and enhance the value – of the cultural capital year. They are designed to strengthen the alignment cultural capital program with the long term objectives of the city, in particular for a trajectory of development to a sustainable economy.

Each design intervention is guided by the Eco-Acupuncture analysis of the future challenges and opportunities for the city. Each addresses the themes of Lwd2018: Exploring and celebrating links between nature and culture; closing the gap between the city and the countryside; providing new opportunities for building community diversity and social interaction.

These interventions are proposals for action. They are not blueprints for (re)development. They are creative projections of possibilities for a network of small



physical changes to the city-scape that acknowledge the planned urban design programs of the city. Some propose new uses for existing infrastructure; some aim for new 'pop-up' infrastructure; two suggest new facilities. All are intended to be tangible, visible expressions of a city engaging with creative new approaches to 'shaping' its future.

If the objectives of the Lwd2018 program are to be met then it is fundamental that the city must be changed by that event – all that cultural energy must not evaporate after the year is over, leaving the city as it was to face the same challenges it had before. Eco-Acupuncture Lwd2018 insists that experiencing the fabric of the city should give residents and visitors a sense that transformation is emerging 'organically' everywhere – and across multiple dimensions that are social, cultural, technological and economic. These interventions express possibilities for change but, in the spirit of the Lab LWD program, they open up the future



as something to be designed, encouraging citizens' involvement.

Eight individual projects are clustered around 5 locations in Leeuwarden:

### **WEST SIDE STORY**

Two sites to the semi-industrial west of the station are combined to present a new precinct: the southern canal edge and the prominent old postal sorting and transfer building. Re-development of the station precinct is already opening up the access to the city. The large precinct to the west of the station is an obvious domain for future development, with its canal frontage and the exciting potential of under-utilised factory buildings and large car-parks. In 2018 its character is well suited to inhabitation by artist-maker-hackers.



### **CAPITAL SQUARES**

Leeuwarden has two great squares of different character and history:

Oldehove and Wilhelminaplein. These become critical sites during 2018 as they extend their current functional and historical roles to accommodate millions of visitors and events. The challenge is to support and encourage their inhabitation and extend their functionality through the colder months.

### **GHOST BUSTER BUILDINGS**

There are many buildings in the city that remain unoccupied –referred to in this project as 'ghost buildings'. How might the city develop these as a resource for 2018?. Two ghost buildings are presented as examples of re-inhabitation: The old Friesian Museum and the Waag.



## ENERGY EXPO

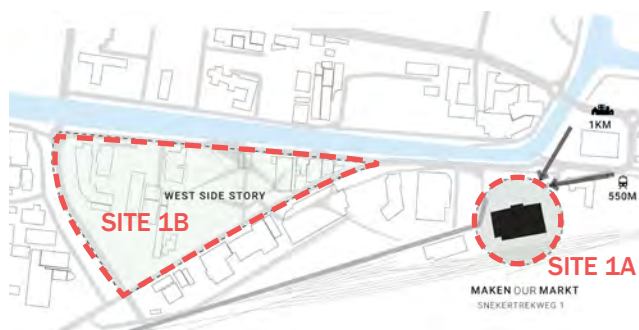
Adjacent to the city is a large rural land site, surrounded on three sides by canals. The central role of energy for the future of all cities – a shift to renewable energy and new energy technologies – becomes the basis for a global expo, utilising the entire site.

## WATER EXPO

The celebration of the social and cultural value of water and the economic value of water technology is central to Lwd2018, particularly with the Stichting Wetsus Centre of Excellence in Water Technology enjoying global attention. The site adjacent to the new Wetsus building is explored as an ideal place for water-related events and conferences.



# WEST SIDE STORY



## WEST SIDE STORY SITE 1B

Millions of visitors attending Lwd2018 will need to be accommodated in the City for varying lengths of time and with varying levels of support.

Lwd2018 is embraced as an opportunity to radically enhance the amenity of the southern side of the canal, previously just a road servicing the old warehouses on one side and a linear car park against the waters edge.

Providing for the additional housing – as well as artist workshop spaces, temporary galleries, small performance spaces, recreation facilities, catering – provides a great opportunity to develop temporary pop-up facilities and some of these could provide for the activation of new areas of the city for future development.

The old buildings and car parks of the ‘west side’ of the train station adjacent to the canal are in an areas ideally situated for future city expansion. The connection to the station, access to the new entry from



the city by-pass, access to the canal and the vistas across the canal and down to the city centre make this potentially an area of high amenity for residential development.

Pop-up facilities for an artist-maker village with temporary accommodation for artists as well as for Lwd18 visitors, could be designed and planned explicitly to seed the future development of this area of Leeuwarden, taking advantage of available land, buildings and a canal frontage. There is a huge potential to create for civic amenity in the landscaping of the canal edge.

This intervention proposes to remove much of the road and car parking that creates a barrier to good public access to the canal. The existing road along the canal-side could be considerably narrowed (a one-way system?) so that the park front to the river could have great summer appeal. This new landscaped park could accommodate an area where the canal is opened



back towards the existing buildings – a back-water with seating and canal frontage unaffected by the main boat traffic. This could be large enough to provide for a beach and swimming; the proposal envisages a small curved barrier reaching out into the canal for public access and to provide shelter for the new back-water.

A number of the old warehouses and factories have been unused for some time, some demolished and in ruins. Within these sites there is space for wonderfully design (an architectural competition?) one and two-story temporary accommodation pods and other facilities and amenities – cafés and so on – to cater to the Lwd18 activities to the west of the station.

It is in these spaces that the first of the pop-up modular accommodation ‘pods’ have been placed. Landscaping around these pods and the planning of this small pop-up estate has created many small sunny gardens and meeting spaces and cafes facing the canal. It is all designer explicitly to anticipate





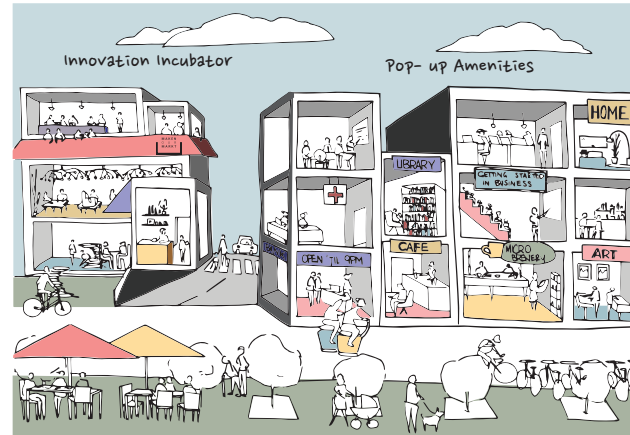
future permanent development. Well executed this new domain of the city could be evolving from 'the temporary' to 'the established' so that the area is slowly brought into the life of the city, from 2018 to 2021.

#### MAKERS MARKT SITE 1A

*'We want to encourage young talents to stay and entice entrepreneurs and businesses to return.'* Lwd 2018

#### OPENING LWD18 TO THE GLOBAL MAKERS MOVEMENT

This Eco-Acupuncture proposition takes the old post and parcel distribution building (beside the rail line west of the Leeuwarden Station) as a potential location for a pop-up facility, a high profile place for an intense program of activity linking Lwd18 to one of the most energetic domains of innovation to emerge over the



last decade, the 'makers movement'. Such a facility is intended to place this global movement at the centre of the 2018 festival, both as a cultural activity in its own right and also to forge the foundations for new businesses in Leeuwarden connected to a revolutionary shift in the design and manufacture of products, as well as the software and hardware of *distributed manufacturing*.

Known by a collection of terms – 3D printing, desktop fabrication, additive manufacturing, open production – distributed manufacturing is a revolutionary change to the way we producing objects – *fabricating things when and where they are needed*.

Underlying this revolution is a set of technologies for printing things – everything from small objects to the complex 'one-off' parts of complex machines, to the production of food, sculpture, fashion and jewellery, furniture, musical instruments, medicines, and even buildings. Whilst there has been extraordinary



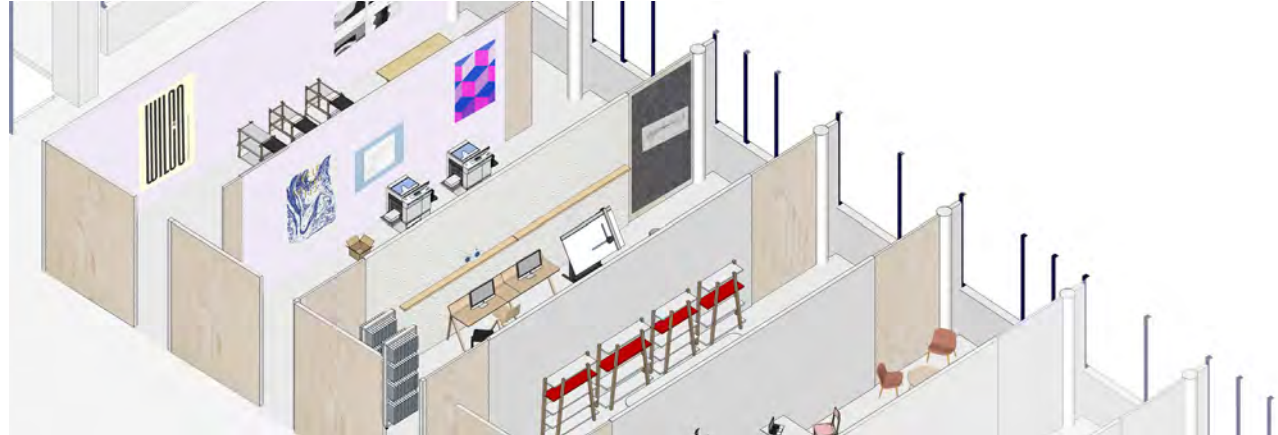
innovation in a suite of printer technologies, the distributed manufacturing revolution is much more about a radical change to *systems* of production enabled by these new technologies.

Distributed manufacturing involves a systems change in the relationships between design, materials, production, consumption and distribution; changes in every step along the way that things are made. In the distributed manufacturing future envisaged by the makers movement, the design process (for a high proportion of products) becomes an open, shared endeavour, with the creation of things – from idea to material form – transformed into a *global-networked-local* enterprise. Designs for things can be shared globally and adopted or adapted for local production. Today, in so many areas, centralised large scale production is struggling to survive economically and most advanced economies derive more and more value from services. Distributed manufacturing is a service enabled system where the expected





economic outcomes will derive from the material goods produced in this way, but also from the software platforms that support design, from the distribution and exchange of designs and the development of platforms that connect customers-needs to design and printing resources. Printing workshops are appearing as businesses to service designer-creators in the realisation of their ideas; businesses based on selling replacement components may replace stocking of goods with printing of goods on demand; uniform solutions (for example the standard mouthpiece for a reed-based wind instrument) can be easily customised for specific conditions. With all that activity taking place in the design/creation/sharing/adapting phases of the new manufacturing system it is hardly surprising that this is where the new creative energies are building up; like software development, innovation in distributed manufacturing is strongly skewed to the conceptual phase. (In this system of manufacturing even the means of production – the 3D printers themselves – is



rapidly transforming under the creative energies of the movement – new printers can be produced from 3D printing.

#### THE MAKERS MARKT PROPOSITION

For the proposed Lwd18 facility, all the dimensions of the new system would be housed under one roof to maximise creative collision. MAKER's MARKT is the name given to this centre in 2018. The old post and parcel distribution building would bring together design, creation, production, prototyping, testing and performance; with the creative side stimulated by being immersed in the Lwd18 festival and the outcomes of this form of manufacturing contributing to festival events, MAKERS MARKT will be where art and culture meets the revolution in making. *This will be the most intensive and creative intersection of artists, students, hackers, designers, fabricators and digital entrepreneurs ever established, all focused on*

*expanding the contribution of the new systems of distributed 3D manufacturing to the cultural domains and social and ecological concerns of Lwd18.* This will be a lived-in 24 hour creative centre as much a creative hotel as a creative laboratory. The MAKERS MARKT program will amplify Leeuwarden's history of engagement with digital fabrication and creative product development, reaching out to and drawing in, local educational programs, the incubator start-ups in the Blokhuispoort and festivals such as Welcome to the Village.

The bold vision and the potential impact of such an enterprise at the centre of a cultural capital program should be make it very attractive for the world's leading digital fabrication companies to offer the latest equipment and systems for the centre, on loan for the year. This includes equipment manufacturers and software systems producers such as Shapeways, Stratasys, 3D Systems, Adobe, HP, Google and Arcam as well as new start-ups such as LazerBlade.

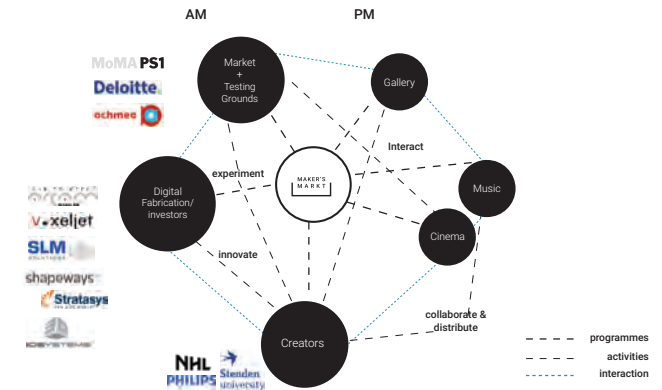
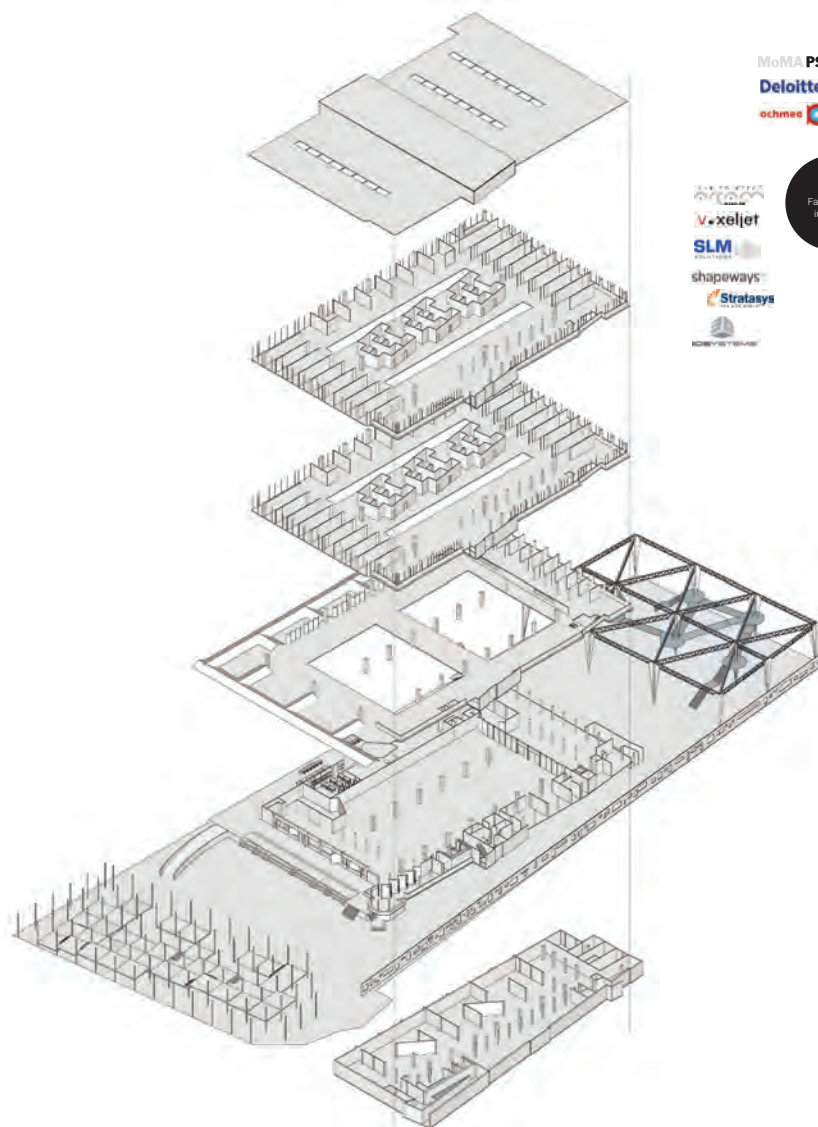
The excitement of such a facility (as involvement in distributed manufacturing grows world-wide) should make involvement in its program an attractive proposition for artists, makers, researchers. Lwd18 could advertise a rolling series of residencies as a global competition to attract who would get free accommodation in the creative lab/hotel.

### THE MAKERS MARKT PROGRAM

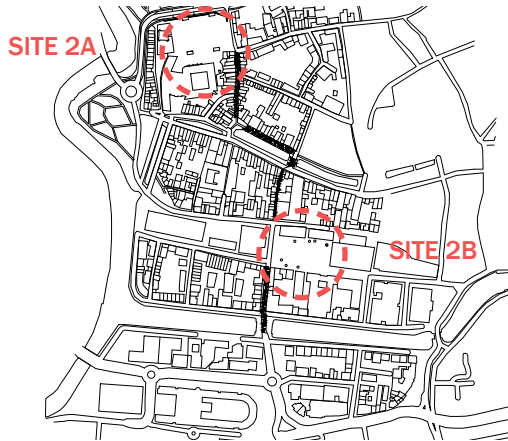
The space can be reconstructed with low cost partitioning for meeting spaces, display spaces equipment and workshop areas and basic short-term accommodation for visiting artists, on the upper floors. The area over the first floor canopy becomes a green out-door space for relaxation and projects needing access to the sun.

The ground floor delivers gallery and performance spaces for public events. During the summer months the output of the Maker's Markt spills out across the car park with furniture and equipment produced as part of the Centre's program.

Innovation derived from the new digital capacities is directed towards music, food and gardens, water, lighting, projection, animation, cinema, theatre, furniture systems and the enhancement of human powered transport.



# CAPITAL SQUARES



## CAPITAL SQUARES OVERVIEW: SITES 2A + 2B

Lwd2018 will succeed if it generates a creative conversation across the thematic domains of its program, if it maximises the opportunities to amplify the ‘chemistry of its cultural test-tubes’, providing places for serendipitous encounters between artists, student, visitors, local residents, farmers and entrepreneurs.

Leeuwarden has two central large civic squares. Both have significant historical importance and both are already home to an important annual calendar of events. In between these often important social and civic events the squares currently sit fallow for extended periods; in those times they can seem rather daunting, empty and uninviting spaces. While this open barren beauty is very attractive to the Freisland eye, it can feel very impersonal to other European visitors.

The squares of Oldehove and Wilhelminaplein will be the functional and symbolic centres of this year-long



celebration of culture, the city’s gesture of welcome to visitors, the physical expression of its spirit of open, collaborative Mienskip. The squares must make lingering, drifting, dallying and all forms of social interaction comfortable for all – everywhere, day and night and all year round.

In 2018 these squares will act as important activity hubs through-out the year, playing the role as urban lounge rooms bringing locals and visitors together in comfortable and accessible environments. Our proposals look at equipping these squares with a tool kit of mobile furniture, umbrellas, wind protection and pop-up amenities to make them comfortable and desirable spaces. This infrastructure, while temporary, is designed to help support the existing annual calendar of Leeuwarden events as well and not interfere in their execution.

While the Waag will provide the central information portal, the capital squares will link visitors more



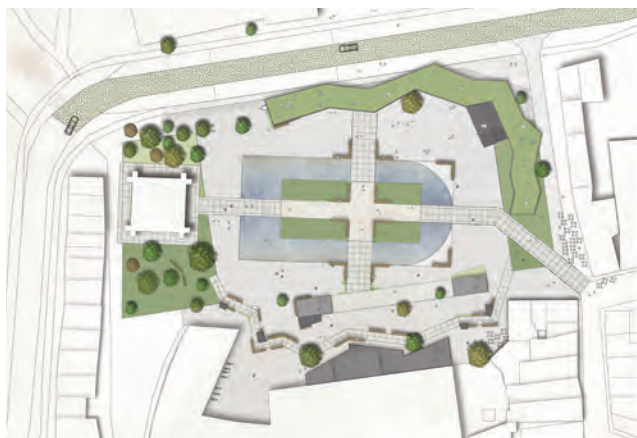
informally into the program of activities in Leeuwarden. These squares are not competing with the other LWD18 sites, but act as gateways into the Cultural Capital program, allowing the different visitor groups to mix and interact.

## OLDEHOVE SITE 2A -

### PROPOSAL 01: GATHERING SPACES

This scheme builds on the site history, particularly the tower and the ghost of the St Vitus church. The floor of the square has a new shallow reflective pool aligned along the foundations of the original church with the cross as pathways; small grassed spaces and low seating generating a sense of differentiated zones of inhabitation. The shallow water is safe for children’s play in summer and skating if frozen in winter; it can quickly be emptied to provide an unimpeded gathering space for large events. A temporary grassed viewing platform for the tower rises around the edge of the





square reflecting the plan of the old city walls; this provides some sheltered space for various activities, out of the rain or the sun. This platform, providing elevated views of the tower and informal seating, creates a more intimate viewing experience for the visitor.

The platform is designed to enhance the functionality of the square as a performance site during the existing annual festival program as well. Plantings either side of the tower provide some protection from winter winds across the square. A large screen is located under the tower end of the platform to show feed from events and the media centre at the Waag; it can swing outwards to produce a small theatre with the audience using the tiered seating.

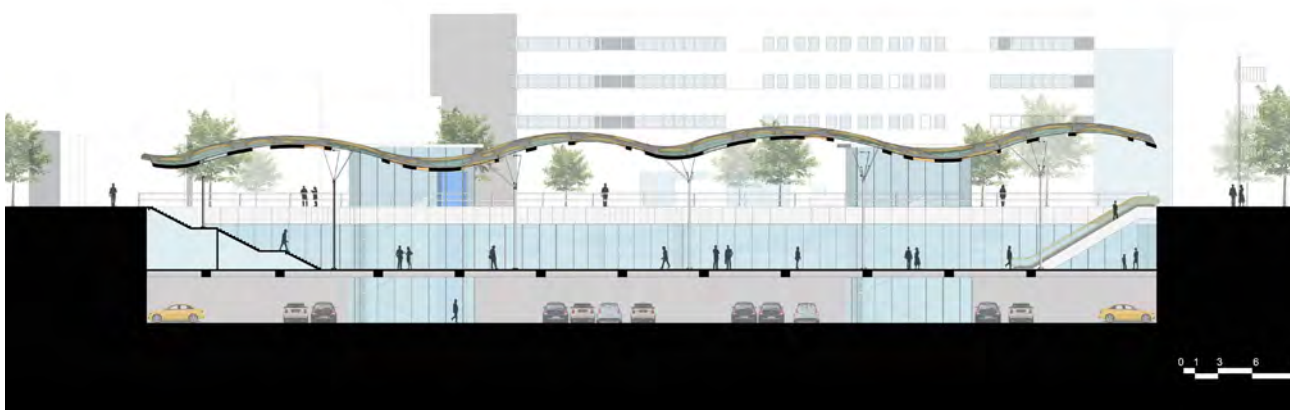
Visual connectivity with the historical archives building to the north is achieved by replacing the tarmac of the road with 'drivable grass' honeycomb paving; this also is a way to slow traffic, based on the influential



approach to improving road safety developed by the Netherlands and known as 'shared space'.

These temporary additions to the square ensure greater connection to and from the surrounding city fabric while bringing in a greater sense of shelter from the harsher climatic elements; a place to enjoy the experience of Leeuwarden's historic beauty and to recharge with friends and family ready for the next event. Planting and shelter structures on the south side create an informal seating zone out of the main event area as well as creating a more interesting and softer boundary to the square. The modular shelters include pavilion spaces for the Language Lab program. Car spaces have been removed to improve this function.





#### SITE 2A - PROPOSAL 02: THE CARPARK RE-USE

This is an alternative “all-weather” scheme for the square. It replaces the top floor of the car park with a visitors and information centre. Car parking is redirected to the lowest floor.

To open the access to the reconverted car-park floor there is a long east-west opening, with a sunken gallery and escalators at either end down to the information centre floor. These new entrance-ramps (an enlargement of the existing entry stairway footprint) are signaled by a floating translucent canopy above the opening, which also acts as a shelter.

Shops line the gallery space on either side. These ramps leading down to the lower level allow the upper level of the carpark to also be used as a bike park, both in 2018 and permanently thereafter.

This proposal allows the square and car park to accommodate a greater range of functions and

become a more valuable resource for the city in the longer term.

For the Cultural Capital program this underground exhibition facility can house important, easily accessible permanent and changing functions of Lwd 18 such as the Language Lab, visitor information, ticket sales and so on. This new centre is a flexible and re-configurable space with meeting rooms, offices, display spaces, cafes and functional services for the 2018 event.

The car-parking space on that floor can be re-instated to take up a varying proportion of the total floor, though the south-side retail use would be semi-permanent.







### WILHELMINA PLEIN

This square has been recently renovated and awarded for its design. It is the 'twin' public square that will provide a gathering and information space for Lwd 2018. Similarly to the Oldehove proposals, any design that seeks to deal with the extra demands for 2018 will need to accommodate the current weekly and yearly programs of the city – particularly for market day.

This is also a square aligned to history with the new Freisland Museum at the eastern end and the Courthouse at the other. Whilst the square is currently well activated with cafés on the northern side and some shelter space under the portico of the Museum, it is not as accommodating to informal gatherings and social interaction across the open expanse of the square as it could be. The seating and the tree-plantings are well used on calm sunny days but the inflexibility of the seating restricts some functions and this furniture is ignored – mostly unavailable – when the market is in operation.



The facades on the southern side (with car access along that alignment) are not conducive to occupation.

Both concepts for pop-up changes to the square are designed to draw people in to its centre, to invite inhabitation and to improve the function of seating furniture, and provide informal cafe spaces during market days.

Hanging solar sails link the streets between Oldehove and Wilhelmina squares to guide visitors moving between these two spaces. These translucent sails maintain sunlight penetration all year round but partially protect travelers from the rain and wind.

### SITE 2B - PROPOSAL 01: THE UMBRELLA SCHEME

This concept uses commercially available retractable umbrellas [see: <http://www.soto-architects.com/medinah-mosque-courtyard-umbrellas/>] as a device to provide shelter, to signify the gathering function of



the square and to provide a sense of intimate space across the square. The height of the umbrellas is lower than the height of the Friesian Museum portico, giving a more graduated elevation and visual connection between the Museum and the square.

Fixed seating furniture has been replaced with wheeled modular units to provide more flexibility – they can be moved out the way for large gatherings and can accommodate different seasonal patterns of use.

Alternative parking plans for the market stalls were investigated showing that there are other market design layouts that could accommodate most of the current mobile stalls and work with the umbrella placement and seating as well as provide spaces where people can eat produce on market day. Such market parking plans could greatly improve the quality of the civic experience between and around the market stalls. Currently the stalls are simply lined up in rows, army style, without regard for efficient use of the



existing seating or good site lines or creating delightful 'break-out' spaces to encourage people to stay longer and enjoy the food and location. The square becomes an expression of the Leeuwarden community that values the civic importance of the market by offering a more thoughtfully designed experience.

#### **SITE 2B - PROPOSAL 02: THE GRASSY KNOLL SCHEME**

The second proposal begins with a way to create a realignment of the axis of the square for strongly centred sightlines to the historically significant courthouse building.

These sightlines existed in the square before it was redesigned with the addition of the new building complex to the south. This new axis is achieved by the creation of two grassed areas to the north east and south west, designed so that they are suited to sitting-out in summer. These grassy mounds slope towards the square and provide additional space to enjoy the produce on market days. A new alignment of the market van-stalls creates more space for eating produce.

A retractable weather-shade roof is explored as an alternative to the umbrellas. Various forms of exhibition, play, and events can be accommodated across the square with pop-up facilities.



# GHOST BUSTER BUILDINGS



## SITE 3 - GHOST-BUSTER BUILDINGS

In 2018 Leeuwarden will exhibit its innovative creativity and social attitudes to Europe and the world. A key role of the Cultural Capital program is to provide ideas and examples of solutions to emerging and entrenched challenges facing Europe. The Cultural Capital program will give Leeuwarden a platform to lead a Europe wide discussion about the challenges of climate and social change. Cities are a focus of great hope for the future - that they will be the cohesive and creative force for the development of a post-fossil fuel existence. Presenting Leeuwarden as a coherent integrated city and a destination to live work and recreate will be central to this discussion and leadership.

Two centuries of development based on the exploitation of fossil fuels have left us with legacies we must rapidly transcend. We have cities, built infrastructure and systems of provision of essential services (such as energy, water, food, transport,



shelter, and information) with an embedded dependence on large flows of carbon-based energy. In a remarkably short period this dependency must come to an end if we are to deal with the impacts of climate change and peak oil.

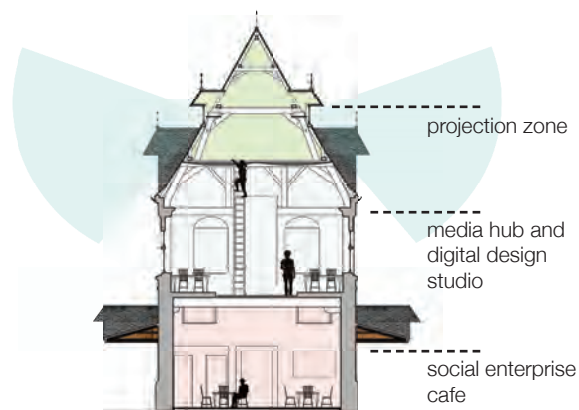
Cities currently account for around 75% of global energy demand and 75% of greenhouse gas production; they are the structural engines of the form of economic growth that now threatens our future prosperity. With the necessary 'de-carbonisation' of our energy systems, with new climate conditions and extreme weather events (drought, floods, very hot days, very cold days) all cities face a period of great transformation if they are to continue to provide for the needs of their inhabitants. Compared to the historical period over which cities have developed, this period of transformation will be very rapid indeed; the International Energy Agency talks of the necessity of 'radical' transformation within the next fifteen to twenty



years. Much of the vitality necessary to meet these challenges can be found in the dynamism of cities, where the density and diversity of social interactions is now understood to be a precondition for both social and technical innovation.

The Ghost-Buster Buildings program presents a distributed set of sites throughout central Leeuwarden to illustrate how reusing empty buildings can address many of the challenges facing cities in a very integrated way: reinstating and conserving existing resources, increasing density and livability, providing well situated low cost accommodation for innovative business start-ups and their staff along with associated hospitality infrastructure. This program is focused on meshing with the West Side site to provide accommodation and opportunities for local, European and leading international 3D printing workshops and companies to operate and collaborate through out 2018 to begin to build a new coherent industry platform in Leeuwarden.

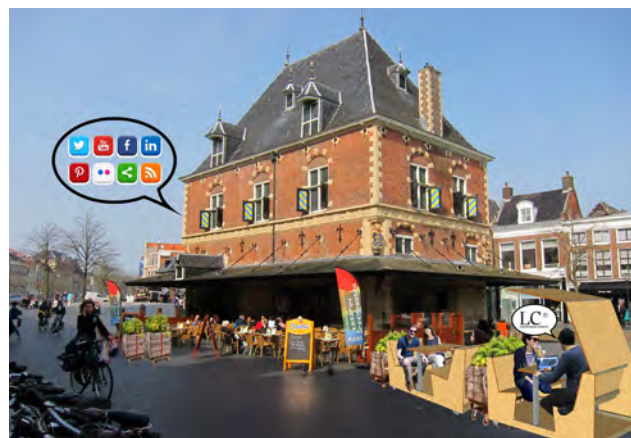




The program will auspice the ‘activation’ of up to 30 buildings in Leeuwarden to illustrate how a networked and programmatically driven approach can transform a city in a valuable and resilient way.

In Leeuwarden today there is a 30% vacancy rate in its commercial buildings. Many of these buildings are conveniently located in the heart of the city or close to it. In 2018 millions of tourists will visit Leeuwarden as part of the Cultural Capital program. It is estimated that currently Leeuwarden has only 996 hotel beds. Leeuwarden’s unoccupied commercial buildings – ‘ghost buildings’ – are a valuable resource that can be brought in to serve as temporary accommodation and for related activities in 2018. Currently these empty buildings act as a ‘black hole’ in the city’s fabric, neither providing support for the development of Leeuwarden or contributing to the current street life of the city.

To undertake a program of building reactivation the first action is to catalogue all of the ghost buildings,



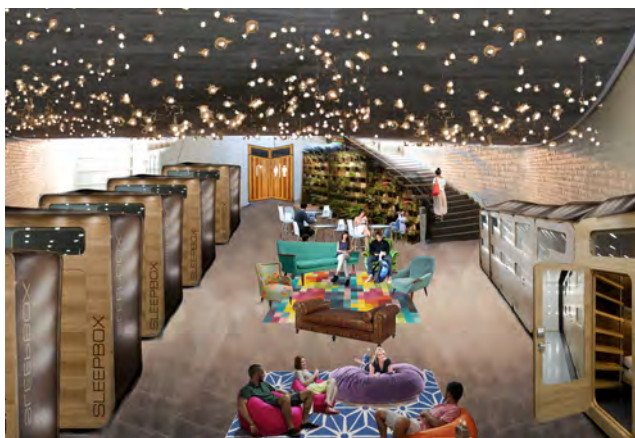
noting their floor area, number of floors, amenities, last use, age, ownership and the types of activity they are best suited to. Buildings can be mapped as a distributed set of sites for Cultural Capital use, the owners contacted and plans prepared for their temporary transformation and occupation. The use of these buildings will increase the life and activity in central Leeuwarden, creating a more vibrant centre and more accessible city. A program very like this actually already exists in Leeuwarden, operated by Carex, as a commercial business and supported by the local government. We propose that this already successful program be extended to bring greater focused impetus to the activation and revitalization of Leeuwarden. Empty buildings can be identified that have ideal characteristics to match the needs of the Leeuwarden 2018 program and that can provide ideal platforms for street based activities and programs that are to form part of the Cultural Capital program. The intention is to create a network of such buildings



that is interdependent, supporting new businesses, accommodation, hospitality, entertainment and exhibition venues for an emerging group of local and international innovators and entrepreneurs.

The long term consequences of the program are to introduce new activities and communities into the heart of Leeuwarden to create new cultural patterns that can support new emerging creative enterprises and industries. In order to explore and describe how the ghost-buster building program might work two such buildings, the old Friesian Museum and the Waag, are shown retrofitted to illustrate the kinds of design strategies that could be employed.





### SITE 3A - THE WAAG

To create a physical hub or centre for the Cultural Capital event, Leeuwarden will need to establish an iconic, easy to find information centre that should also double as an event platform in its own right. In Leeuwarden, the Waag is an existing iconic building that was first built as a major hub for the exchange of information and goods. Currently this building is only partially occupied and this very important part of town is not being activated by the activities associated with this building. The Waag is to be retrofitted to become the centre for the Cultural Capital media team. Located in the most prominent local shopping area in Leeuwarden, the Waag is the perfect building to become the media centre for Lwd 2018. Centrally located on a major square beside a canal, the Waag is very easy to find and its architectural form suited to becoming a contemporary 'cultural light house' communicating the day to day Cultural Capital program information and new creative work.



The cultural Capital program needs to present as an interconnected series of events and initiatives that draw strong connections between local programs exploring the significance of Meinskip to the audience. The Waag hub is an ideal way to achieve this.

The ground floor café is transformed into a social enterprise café showcasing local produce, providing event information, free wifi and outdoor meeting and workspaces energizing the area around the base of the building. The upper level becomes the social media hub and digital design studio for local graphic and animation designers to develop new work around the themes of Leeuwarden's Cultural Capital program. The Cultural Capital media team have a high profile central location to operate from and the surrounding square gives them a large urban space to project information onto to communicate with tourists and creative workers in real time.



This work is then projected at night, from the upper most level, onto the surrounding buildings to create a constantly changing landscape of images and ideas in the Waag square. The building is seen as a showcase for the graphic design community in Leeuwarden who are already recognised as a significant local cultural and educational force.

### SITE 3B - THE OLD FRIESIAN MUSEUM

To provide an example of the occupation of currently empty buildings into spaces that will support the 2018 Cultural Capital program and provide new opportunities to activate Leeuwarden we present the old Friesian Museum. The old Friesian Museum and the adjoining outdoor spaces are transformed into a hospitality and entrepreneurial hub with accommodation and outdoor gardens for growing local food.

The space, already in partial use as a business incubator, is expanded to provide a range of related services to amplify opportunities for new start up businesses in Leeuwarden.

Short term accommodation pods have been installed in the tunnel-link under the road (and other upper floor spaces) and meeting and dining rooms installed in the ground floor space to create a hub for young entrepreneurs, short term residents and incubator staff to meet informally. The aim is to encourage interaction and spark innovation, responding to the field of ideas from Lwd2108. The unused laneway and the rear spaces (owned by the municipality and the province) have been transformed into pop-up urban agriculture gardens. These produce food for the kitchen and create relaxing outdoor spaces for the building occupants, visitors and the community. This introduction of urban agriculture is intended to showcase micro greenhouse technologies and to present a more diverse range of locally grown food. This is not merely to compete with or replicate the vast existing food production in the Netherlands but to extend and refine that footprint with locally grown fresh food for use in local cafes to create more unique dishes and reduce transport costs and pollution.

The re-development of the building provides an opportunity for local designers to develop modular prefabricated architectural solutions suited to refurbished buildings, to accommodate the needs of today's young mobile entrepreneurs with their technologies and social network preferences. The ghost-buster building program will provide a platform to exhibit and test new designs, placing Leeuwarden at the forefront of agile urban innovation.



The ghost-busting of the old Friesian Museum is introduced as an example to stimulate temporary redevelopment of other ghost buildings. The ghost-buster building list provides the data for the development of an organised program for a cluster of new amenities for Lwd2018.

Strategies and designs developed as part of this stage of the ghost-buster building program will be tested and further developed for a program beyond 2018 – for affordable housing and hotel space and to build facilities to attract creative people to the city for new business opportunities and networks.



# ENERGY EXPO



## **SITE 4 - SUSTAINABLE ENERGY AND SUSTAINABLE LIVING - WORLD EXPO**

(Part of the Sustainable Energy Culture Program of LWD18)

### **BACKGROUND**

In the coming half century the global economy will be shaped by innovation in renewable energy production and storage and in technologies and processes to improve energy productivity. These developments will be fundamental to the transformation of all cities.

There are characteristics of this future energy landscape that are already clear:

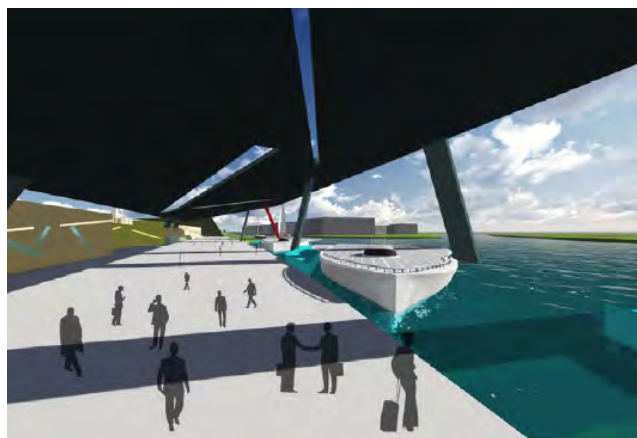
- energy production and consumption will be much more decentralised with a fundamental change to the role of existing distribution infrastructure. Electricity and (bio)gas grids for example will be required to open up to distributed supply and demand, to serve a true network function of load-sharing.
- although there will be a major shift to electricity as a dominant form of energy, there will be an increase in the diversity of forms of generation; the same will apply to bio-fuels. The characteristics of the energy system will vary greatly from city to city and region to region.
- although 'energy innovation' will involve new technology and new combinations of existing technology on the supply side, demand side 'energy culture' changes will be equally as important a focus for innovative new businesses to deliver 'energy productivity' and also for the organisation and management of patterns of sustainable consumption.
- the energetics of all the other core systems of provision of the city (water, food, waste, transport, information, shelter) means that there will have to be innovative changes across those systems (to make use of new forms of supply, to reduce consumption and so on).



In order to position Leeuwarden and its future economy within this new energy landscape, it is proposed that a major event within LWD18 is designed to focus on the sustainable energy culture for the city:

- to give a high profile to European (and even global) innovation for the formation of the new energy landscape (as it appears in 2018)
- to strengthen Leeuwarden's infrastructure for its renewable energy future
- to expand and consolidate local education, research and businesses, to address global needs and opportunities for a cities in a low carbon future and bring a working knowledge of global best practice to Leeuwarden

This sustainable energy culture program will focus on two interconnected events:



1. A Sustainable Energy and Sustainable Living world expo - on the site of to the west of the city in the The area designated as the Energy Campus for Lwd2018.
2. A global conference on Sustainable energy culture and the transformation of the city.

These are described in more detail below.

## WORLD EXPO

By 2018 it is likely that global innovation and development of renewable energy systems and energy storage will be thriving and a major source of economic growth. Changes to living patterns in cities that help reduce energy consumption - already a significant domain of action in any cities committed to a greenhouse and energy target - will have had another two years of establishment.

The world expo is planned to run for nine months of the LWD18 festival as a European/Global focus to showcase the best in established technologies, prototypes, research, education and future visions for the new non-fossil fuel energy landscape. This would include: renewable energy production; energy-storage systems; low-energy appliances; low/renewable energy transport systems; zero-carbon housing solutions; energy-recovery systems, and so on. It would also encompass: low-energy solutions for growing food, providing clean and recyclable water, recovering and reusing waste and so on an, particularly, a special focus on the use of information technology, data analysis, communications systems to support the low-energy, low-carbon city.

What will be unique about this expo is that it will be the first of its kind (ideally, the first of many) and that it is happening within a context of a year long celebration of all the cultural aspects of human life that is LWD18. To emphasise the logic and value of bringing together

# Leeuwarden *Sustainable Energy Expo*

01 April - 31 October 2018

300 companies, 15 countries

*Displays of the Solar Decathlon Challenge and the Small Solar House competition winners*

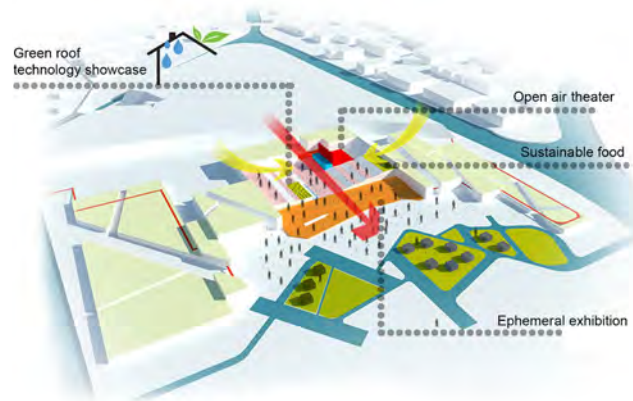
*Test drive the latest electric vehicles*

## See displays of:

- The Dutch rainmaker creating water from wind
- The Vortex bladeless wind generator
- The latest renewable energy products
- Photovoltaic roads and bicycle paths
- The latest battery technologies
- Information systems and apps
- Blue energy
- NHL and TU Delft research labs



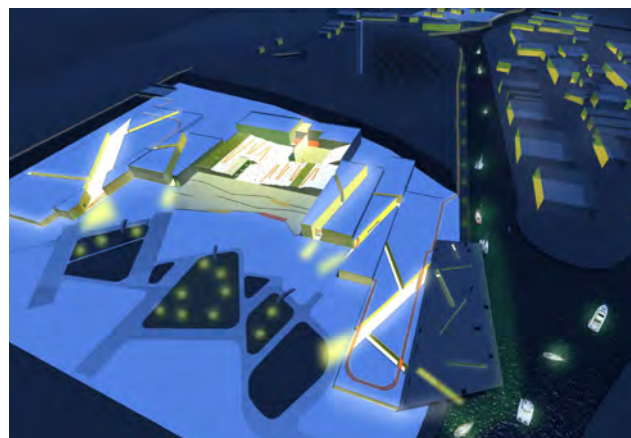




culture and technology, new goods and services, the arts and sciences of living sustainably, the Expo would also house the Sustainable Living/ Sustainable Culture Festival; a series of events over a three to four months celebrating, exploring and communicating new approaches to living in a new energy world. Central to this festival will be the global conference (see below).

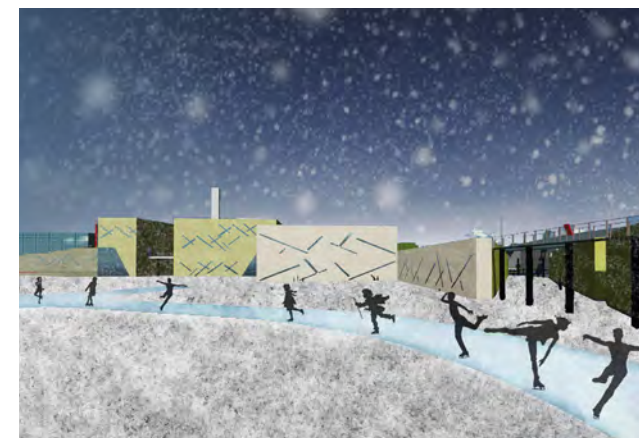
This site and its program signals the determination of Leeuwarden to creatively embrace the culture and business of the low-carbon economy.

The Expo builds on the enduring and important history of the Dutch horticultural festival Floriade, transferring its model into a new domain building also on the rich history of the 'great exhibitions', established to showcase to the world the advanced state of a nation's innovation and manufacturing. Floriade successfully shifted the focus to Dutch horticultural expertise and research. It attracts millions of visitors who associate the Netherlands with tulips, tomatoes and landscape, to explore innovative approaches to



thinking about plants and planting, to understand research and practice and to understand new trends and developments. Floriade uses the success of each event to create new open space and to fund new urban infrastructure for the city in which they take place.

The images above are only intended to depict the general idea of using the full site for the expo, with opportunities for outdoor as well as indoor exhibits and functions. To create global interest in the Expo in the years before its opening a series of pavilions will be designed and built as the result of an international competition with a challenging brief: they have to be prefabricated, low cost, high performance (in energy terms) and suited to alternative uses after 2018. These buildings – and the architects and engineers who designed them – will be the subject of a global marketing plan to build expectations about the Expo. In other outdoor areas, space is allocated for the installation of working systems for renewable energy



generation and for temporary structures for the Sustainable Living-Sustainable Culture festival, including a small outside amphitheater for presentations.

Using the Floriade model, all these interventions on the site are expected to remain as core infrastructure for future events and exhibitions and, in the case of renewable energy generation technologies, to continue to supply energy to the city. The plan is to recover much of the costs for infrastructure from the visitors to the Expo and Festival.

During 2018, the Energy Expo will attract visitors and artists to explore the most innovative and creative ideas for a low-energy, non-fossil fuel future. Across the site, Dutch and international companies, research institutions, communities and cities will present their new energy solutions so that visitors can understand how energy could be generated, used, distributed, saved and recovered within the city. The Expo themes will be explicitly linked to those of the wider Lwd2018

event, being part display, part education, part experimentation and in all ways a celebration of the culture of post-carbon, sustainable living.

The expo is carefully designed, programmed and managed so that it builds a legacy infrastructure for the city beyond 2018.

### THE BROAD PLANNING OF THE SITE

The site is accessed by boat or by bicycle from the centre of Leeuwarden. The canal access to either side of the site is a significant advantage; boat arrival could be designed to emphasise sustainable transport (solar/electric) as well as to add a sense of theatrical expectation. This should be explicitly linked to the Dutch Soar Boat Race.

A dense planting of vegetation at the western end of the site provides a barrier between the activity (and noise) of the site and the farms and villages beyond.

On the eastern end of the site (above the cap of an existing 20m high waste site) there will be an installation of one form of renewable generation carefully designed and constructed so that it is suited to the light-weight engineering demands of the capped waste-fill and so as to be an 'evident attractor' - a signpost - to people travelling on the ring road around the city. This a critical 'advertising' opportunity for the site that requires a creative intervention. In the (indicative) images for the site a 'forest' of 30 brightly coloured Vortex bladeless wind generators (each 13m high) has been constructed. At this time (2015) the Vortex system is one of the many new technologies for extracting energy from wind. If used, this would be

one of the first large scale installations of very low cost Spanish innovation, producing a total output (based on their estimates) of 150Kw of electricity in medium to strong wind conditions.

The low-carbon architectural competition has defined the technology and design for the light-weight, high-performance, pavilions set up against the wall of the waste site. It provides display booths, meeting rooms, education and research facilities (e.g. for NHL), linked to the boat arrival dock.

Outdoor areas include zones for solar and wind systems (and any other renewable electricity generation systems), for energy storage systems (larger than batteries, e.g. compressed air), for new food production systems, for demonstration housing systems and so on. Across the site the latest models of electric vehicles are used to transport people and goods.

An agreement with the US government sees the 2018 Solar Decathlon hosted in this area of Leeuwarden – this is an international US Department of Energy competition for university and college teams to design and construct small modular houses that seamlessly integrate solar and energy efficiency technologies. These houses will be built and constructed in July 2018 in an area set aside near the pavilions.

Pathways connecting different areas of the site demonstrate different solar PV road, solar shaded bicycle paths and so on.

The Netherlands Blue Energy system is demonstrated at the edge of the southern canal and another area to the west is set aside for demonstrating and testing small wind generators suited to rooftops in urban

areas.

NHL and TUDelft have a domain for research and construction of new information technologies for smart residential and commercial building energy systems.

300 companies are expected to join the expo; over 100,000 people are expected to visit the site.



### THE SUSTAINABLE LIVING - SUSTAINABLE CULTURE FESTIVAL.

Melbourne provides a great model for this event - and a possibility to create a linked global event starting in Melbourne in February 2018 and 'moving' to Europe for Leeuwarden 2018. The Melbourne Festival is now 17 years old and has grown from a small on day market-like event into a major festival for the city. See: <http://www.slf.org.au>.

### INTERNATIONAL CONFERENCE:

#### "THE CULTURE OF SUSTAINABLE ENERGY AND THE RESILIENT POST-CARBON CITY"

This conference would take up the intersection of the relevant themes for the expo as part of Lwd18. It would be announced around the middle of 2016 to ensure that it gets a clear 'space' in the crowded set of energy related conferences. Although details and the precise focus would be set after a scan of other conferences broadly addressing the Expo theme, it is proposed that this conference take as its broad base:

- The transformation of cities for resilience in the face of a changing climate and a shift to non-carbon energy systems
  - Low-energy living and urban cultures
  - Sustainable energy systems and the European Cultural Capital program - the impact of the Leeuwarden agenda
  - Disruptive technologies, disruptive values, disruptive behaviours and disruptive cultures and their role in shaping the future low-carbon resilient city
- The urban energy 'prosumer' (involvement in producing as well as consuming) and the implications for wider social/cultural change
  - Sustainable energy culture and the urban commons - changing boundaries in private and public infrastructure
  - Sustainable energy culture and urban governance
  - Case studies in urban/city development



# THE WATER EXPO

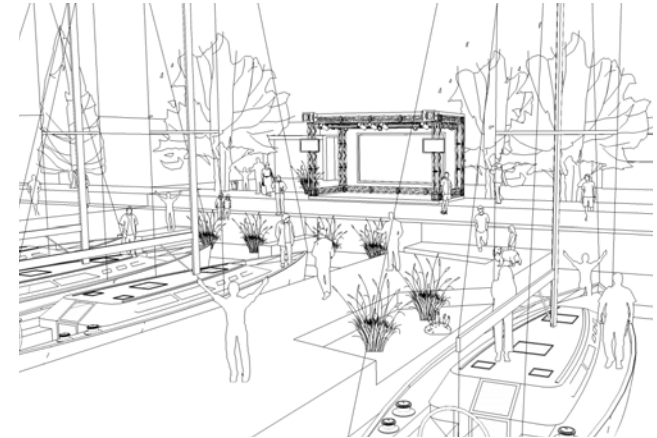


## SITE 5 - THE WATER EXPO

The Water Expo site and program is based on extending the existing investment in Leeuwarden around researching and managing water resources. Leeuwarden and Friesland are already internationally recognized as leaders in this field and the existing Wetsus Water Campus is testament to that. This project seeks to make a connection between that world leading research and the current understanding of that science by the general public. This project seeks to address the participatory and educational mandates of the Leeuwarden 2018 Cultural Capital program. The Water Expo will bring the public in to experience the way water is managed in the Netherlands and how climate change is bringing new challenges and opportunities for the Dutch and the wider European community and how they can contribute. This site will provide an introduction to other projects about water that are being developed across Leeuwarden and provide a venue to connect up the themes into a bigger picture.



Core to the project is to present the experience to visitors of the reality that the Netherlands is already sitting below sea level and that livability in the Netherlands is only possible through a very large sophisticated technological infrastructure. The central role of the canal network and how it can contribute in new ways in the future will be addressed. A constructed wetland will illustrate the role of biological systems in water purification and management. The project is set in stages, the first being the landscaping and a light weight infrastructure to support the site activities for the Cultural Capital program. The second stage is to build a permanent conference centre on the site to support the Wetsus Water Campus and provide a more publicly directed program to educate and garner broader interest. The site will host the Embassy for Water.



## WATER EXPO: STAGE 1

The Wetsus Water Campus building is an internationally praised architectural symbol of Leeuwarden as the capital of water technology. The Water Expo project responds to the continued growth in water innovation and international collaboration at the Wetsus campus and for water as a major focus for Lwd2018. For 2018 the site will be landscaped as a water experience expo. It will celebrate Leeuwarden's history with water – with the conquering of the oceans, the formation of villages based on Terpen, the development of canal systems, water based transport, the technology of water purification – and the future of water as a critical issue with climate change.

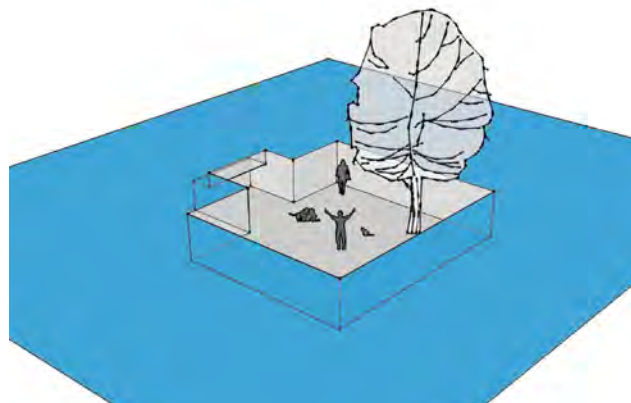
In stage one (completed for 2018) a new wetland will be built to create diverse water landscapes with healthy water systems based on new technologies. The public will experience directly the sensation of living 'below sea level' in the Netherlands in the Blue

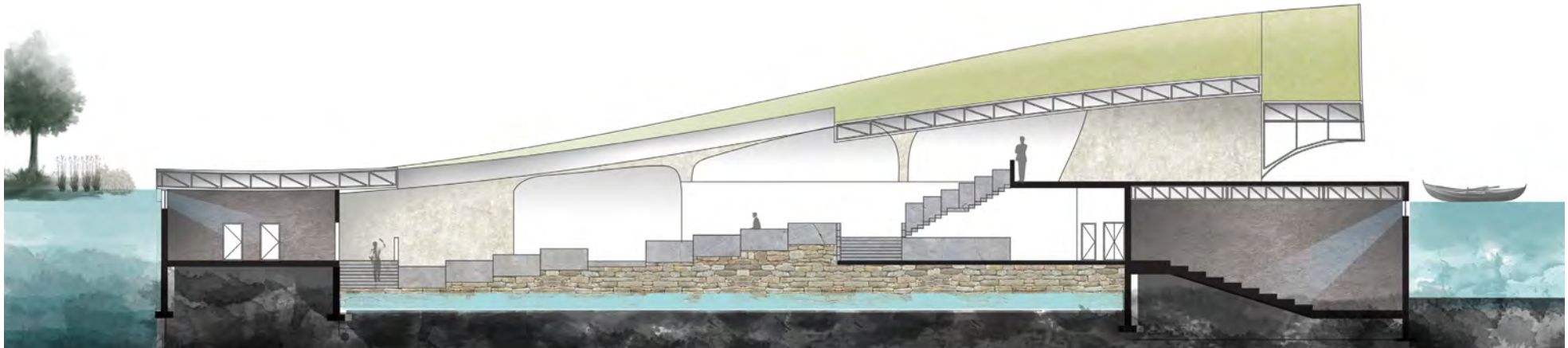


Corridor exhibition space. A floating stage will be set up for events and concerts that will be accessible from land and via the canal. It will also act as a floating market. This aspect of the design harks back to the history of the site when it was a garden and market. The events devised at the Water Expo are all specifically aligned with the water theme and will not duplicate events at other sites.

Responding to the national policy of “Make Room for Water” the existing canal will become the centre of a new public open space with a renewed ecosystem, healthy animal habitats, water filtration service, efficient water use and flood prevention. The expo will focus on vegetative water filtration processes.

Technology and systems being researched and tested in De Weilen and will be displayed as part of this new expo park for the education of Lwd2018 visitors. This expo site will provide a haven for nature lovers, bird-watchers and the display of water art. New canals cut into the site will anticipate the development of stage two of the project – 2018- 2028. Boardwalks across and around the site will match the planning for the design of this stage 2 development.





#### WATER EXPO: STAGE 2 (2018-2028)

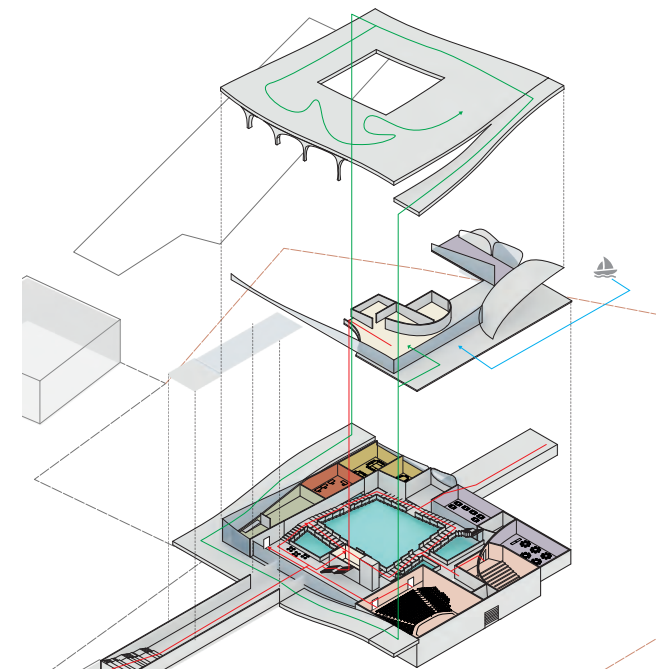
With the Wetsus Water Campus acting as 'hub' for a worldwide network of water technology and with the stimulus of the Water Expo Lwd2018, there will be a growth in demand for related conferences, scientific meetings and water tourism and events. A new conference centre is planned as Stage 2 of the development to accommodate this future activity.

This centre – AQUA de STIJL – is designed to create a place for international business, knowledge institutes, governments within the water technology sector and even the general public to share knowledge. The design approach is to disguise the solid form of the building, allowing for the landscape to prevail; the major program of building is embedded into the ground - under water. The depth of these sunken facilities below the 'ground level' is the same as the height of sea-level above the ground plane of the city. This relationship between land and sea is thus

emphasised at an experiential level for all those who attend conferences.

An external continuous ramp from the boardwalks of stage 1 leads up a dyke (to protect the sunken facilities) to a new external public 'green' layer on the roof above the conference centre; this also ensures that the public domain does not interrupt the conference use.

For the conference centre, a glass facade provides visual exchange with people at the 'ground' level and as a wall against surrounding water. This water is now exceptionally clean due to the work conducted for stage 1. Inspired by the famous local artist, M. C. Escher, internal ascending and descend stairs (suggesting an infinite loop) are introduced in the centre of the building for circulation. Stairs connect people to the conference hall, restaurant, meeting room and gallery area.





# RECOMMENDATIONS

## GENERAL RECOMMENDATIONS

- All avenues should be explored for bringing European, national and corporate funding from additional sources to allow these project interventions to be realised.
- In pursuing the implementation of these projects should consideration be given to funding an additional round of Eco-acupuncture in 2016.

## WESTSIDE STORY (SITE 1B)

We recommend that a focus be made on a major infrastructural and landscaping change through opening up the canal along the waterside boundary of the 1B site as per the description in the text on page 9

- Secondly we recommend the acquisition of the existing warehouse sites for temporary pop up housing. The design of the pop up housing should be the result of a Europe wide design competition. This could be
- A clear wayfinding strategy should be implemented from the station to the Westside site to easily guide visitors to the site.

## MAKERS MARKET (SITE 1A)

We are aware that Leeuwarden is considering the housing of many hundreds of refugees in the city. We recommend strongly that building connections between this new population and the Makers Market program, as presented, will benefit the objectives of Lwd2018 and the future development of the city. We see this as a logical expression of the central idea of Mienskip and innovative way to integrate and seek the active participation of a new community into the wider citizenship of the City.

For this project to succeed there should be a full prospectus for the facility, its program, its role in the Lwd2018 prepared in the first half of 2016. This will be necessary to attract the sponsorship of the major corporations involved in the technology and systems of '3D' printing. A wide media campaign inviting makers and artists to come to contribute to the Lwd2018 event and the establishment of start up businesses for the city.

If the proposed building is not available for this project then alternatives need to be explored that meet the following criteria (considered essential to achieve the creative and innovative dynamic of the proposed program):

- Housing of the artist/makers/residencies should be as closely proximate to the production / lab / exhibition spaces as possible. The idea is to create a 24 hr creative hotel/workspace/ 'idea theatre'.

- Selection should make sure that there is visible adjacent outdoor space for the construction and display of prototypes, experiments, performances, events, to ensure that the facility and the maker community is highly visible.

## CAPITAL SQUARES

We strongly advocate for the City to take action to develop temporary interventions in the two spaces to make them successful as intimate community 'lounge rooms' and informal meeting places for all the Lwd2018 visitors and participants.

## ENERGY EXPO

- For this proposed program to succeed it will be critical that it attracts a combination of large public attendance (fee paying guests).
- To attract large audiences the program needs to quickly set up the 'attractors' (build the excitement and brand):
- A large number of high-profile exhibitors - this means businesses, innovation/research organisations along with their latest 'things' to be seen/played with/explored.
- The Sustainable Living Festival. (Use this to attract the participation of the community sector, small businesses, lobby groups, educational events etc).
- Commissioned projects from energy/solar (techno) artists
- Bring the solar decathlon 2018 (and any similar competitions already in existence)
- Provide some exciting link to the Dutch Solar Boat Race
- Select exciting globally emerging architectural and engineering firms to design the pavilions which become part of the 'must see things' (aiming to capitalise on established international media attention to innovative buildings and architecture)

## WATER EXPO

We are aware that there is an extant project for construction of a temporary facility on the water campus site. We are keen to engage with that project and the local community that it has drawn on. We could contribute to an approach that could merge the best of the two approaches in a way that maintains the strong community support and delivers a focus for water celebration during Lwd2018 that is cost-effective.



