

Light

Up



# Growth House

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Nowadays, cities transformation needs to be simple, relying on common ideas from different parties in order to achieve sustainability.

That idea has already been brought to the Danish context, where participatory design became part of the policy for urban transformations, which facilitates the creation of simple elements of architecture or landscape with a huge impact in the communities.

One of such elements is Growth House — an urban device designed to facilitate green learning process and mindset change for the establishment of future sustainable generations, by its incorporation in educational institutions and organizations.

In this respect, the Growth House offers possibility to involve different stakeholders that can perform activities related with gardening, teaching, food farming and so forth, that increase the livability and economic growth in neighborhoods.

**LIGHT UP THE NEIGHBORHOOD  
THROUGH GROWTH HOUSE**

# THE GROWTH HOUSE

## The Growth House is a multipurpose device:

- For learning sustainability by practice;
- For reinforcing the community sense regarding the use of public spaces within schools, institutions or neighborhoods;
- For enhancing the development of small economies in communities or organizations using education and food production as the main attractor;
- That is economically viable, due to its easy way of construction, mobile character, low cost materials and self-efficient energy;
- That catalyzes the value of the place and leads to a gentrification of the district.



# LIGHT UP VISION

Light UP is an association that seeks the opportunities for initiatives in neighbourhoods that contribute to the creation of sustainable reality and increase of living quality through cross-disciplinary design and boost of the economic growth.\*

Starting from establishment of local networks will allow meeting specific demands of local communities that can vary from area to area and adapting the function and the program.



Back to basics: Focusing on communities will allow creating low-tech solutions. In this respect, we are creating local multifunctional spot that can be replicated in other institutions or neighbourhoods.

By multiply implementation of Growth House, adapted to its environment and communal needs, we will create a network of local interventions with global impact.

\* *Democratic design Hernandez A. 2016*

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## Growth House invites to do sustainability instead of being sustainable.

Although, the Growth House is unique in design, it can be adapted to the place and enhance its own identity.

Growth House invites to do sustainability instead of being sustainable, focusing on the practice of sustainability by using activities related with plant cultivation gardening, urban farming, food farming and others. It will introduce nature to school environment, and create spaces for different users inside the city where nature is part of the experience.

The Growth House is characterized by flexible interior design: there are used mobile 'Growth boxes' and benches. All interior elements can be moved and organized depending on the activities that will take place.

Two facades can be opened in order to invite more people inside ( if the weather conditions allow for it) 70% of the materials used in the project are recycled.

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The GH project offers a greenhouse, where people can grow food, enjoy sustainable activities and workshops throughout the year. Educators are provided with innovative tools to engage them in sustainable activities.

# ENHANCE LOCAL GROWTH!

The local-socio-economy perspective attempts to create community sense based on educational activities related with nature that can develop second economies in the future, contributing to the economic growth of the area and hence low-tech investment.

## Global-economy perspective of Growth House, new business opportunities:

- For temporary uses in public areas or plots, where building costs are too high / building application process are lengthy / there is limited resources / areas need gentrification: it start it's progressive transformation and eventually increases real estate value;
- Investors can use the growth house to build in areas where is not allow it to do it, due to natural events of quality of earth, to create events, helping to the development of urban areas. This kind of initiative can also benefit small investors, offering a decreased amount of taxes for new venture if they offer to renovate areas or starting processes of urban regeneration in degraded spaces (performative events);
- On private plots for temporary use, such as companies and institutions
  - to activate those / bring new function / meet space constrains. GH allows for fast and cost-effective extension of sqm of functional area (without lengthy building permit application process);
- Investment in preparatory education for success of future high tech / sustainable projects in the city, leading to changed mind-sets of communities;
- Rent of GH space for related activities;
- Periodical use of facility by different collaborating institutions due to its mobile character;
- Space for food production.

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Growth House provides a local-socio-economy perspectives and global-economy investment opportunities.

# ACTIVITIES

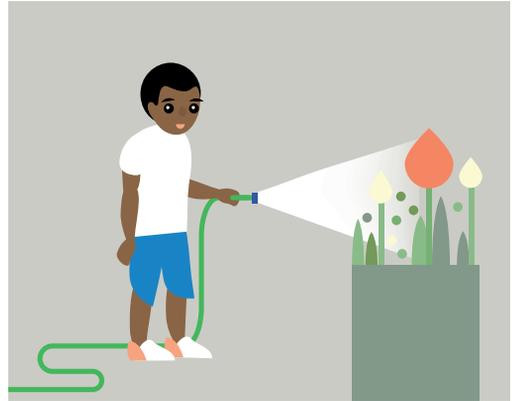
## Possible activities pthat Growth House offers:

### Classes



Classes of sustainable education / biology  
Adressing environmental challenges  
Climate control  
Recycling of materials  
Commnuity engagment

### Sustainable activities



Activities in breaks / after classes:  
Cultivation of plants  
Local food production  
Cooking classes

### Markets



Series of workshops for externals:  
Seasonal food production  
Sustainable living  
Food market

### Hubbing

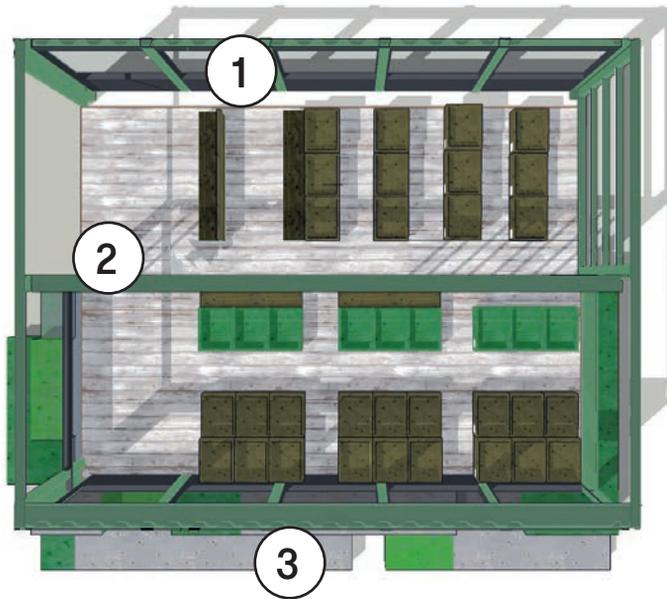


Health hubbing  
(Creation of space with clean air for  
rejuvenation)

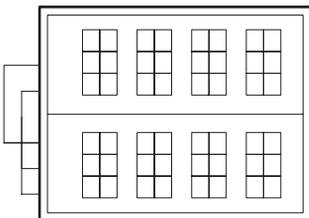
# INTERIOR

The Growth House incorporates inside different furniture that can be used for gardening or urban farming. The furniture are flexible to be moved and organized in the spaces depending on the activities that will take place.

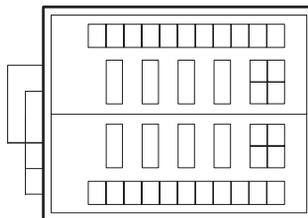
(1) Plant boxes in different heights for kids  
 (2) Green wall  
 (3) Wooden benches, boxes for storage and play



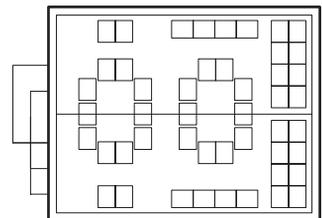
Use of boxes for plants allows flexible arrangement and temporary adaptation of greenhouse space to differ purposes:



Optimal layout for plants cultivation and classes for small groups of pupils



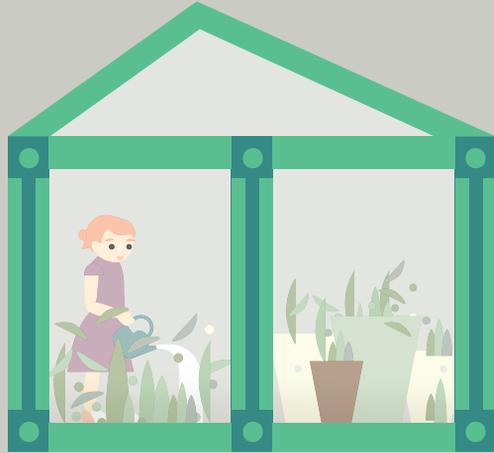
Layout for temporary arrangements / classes for bigger nr of pupils



Most efficient layout for plants cultivation

# ADAPTATION TO DIFFERENT USES

Greenhouse  
for kids  
growing plants



Workshops  
& classes



Food market

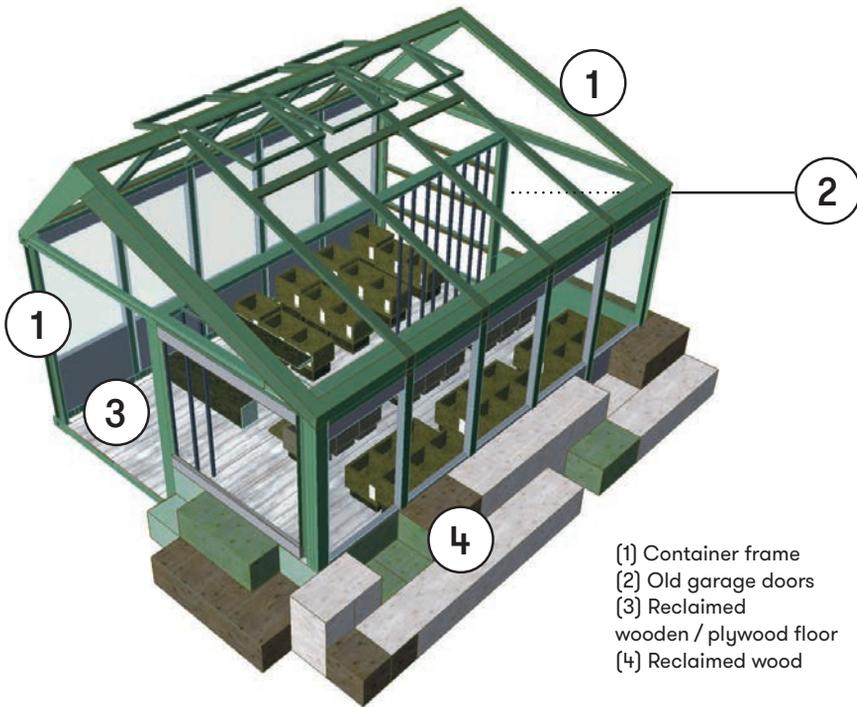


# STORY ABOUT RECYCLING

All the urban environments are facing problems with waste, we contribute to diminishing its quantity by reclaiming, reusing and upscaling old materials.

The base of Greenhouse is created from shipping container. Its steel frame with flooring provides stable and strong constructions that does not require foundations and allows easy transportation.

Boxes for storage and plants are made of wood coming from shipping crates and pallets.



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Mobile and light character of the structures allows for fast and cost efficient building process. GH can be easily replaced without the need for building permit.

# GROWTH BOXES

Growth box is a unit in which the plants are grown, it is made of recycled wood protected towards humidity and its easily movable (light and made on wheels) what allows great flexibility of interior layout and efficient use of space.

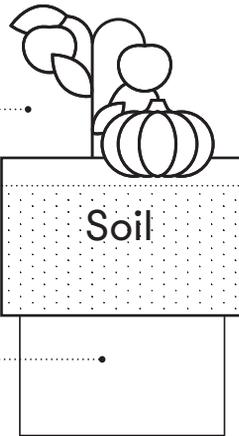
Plants growing in boxes

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Drawer for composting material in which heat is generated.

Composting material: leaves, straw, grass clippings, food leftovers

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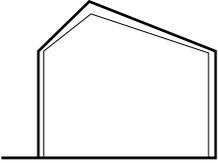
- Boxes can be temporarily moved outside (during warm season in order to harvest more sun)/ to gain more space for events taking place inside the Growth House/ during markets (customers can pick fruits and vegetables themselves which limits waste of unsold goods);
- Concept of growing plants in the boxes adds to overall mobility of the GrowthHouse structure;
- Growth box introduces organic heating technology which contributes to energy saving and makes the Growth House self sufficient;
- Heating is generated through composting process which takes place at the bottom section of Growth Box and provides required temperature for the plants in cold season. In this way the adequate environment is provided only at the needed spot, which significantly saves energy for heating up all space of greenhouse.



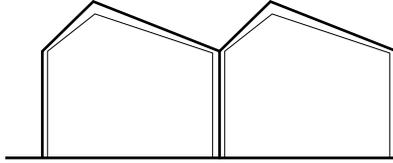
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## Design options

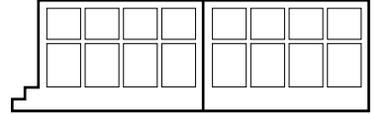
Growth House can be multiplied according to the needs of investor and users, in order to create bigger space that will allow extensive plant growing and accomodation of different activities for wider audience.



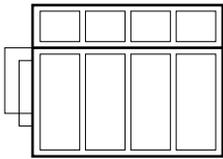
Single unit



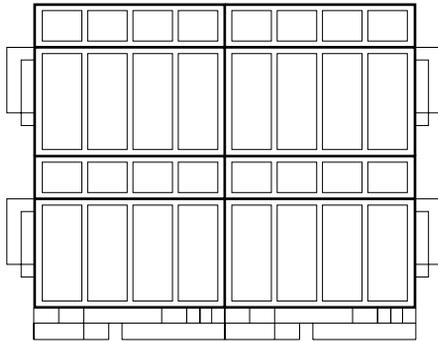
Double width unit



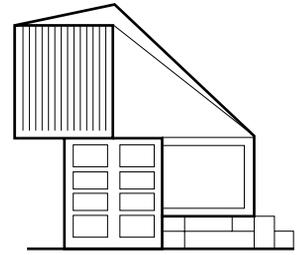
Double length unit



Single unit



4 unit solution

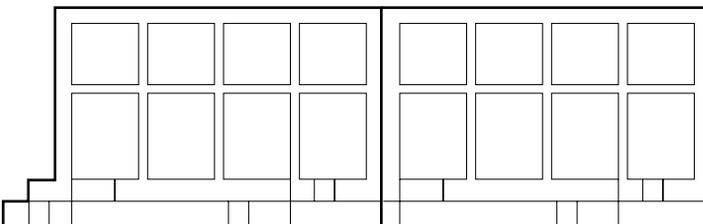


3 unit solution in 2 levels

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## Placement

Green Class House can be realized as independent structure or element adjacent to the school building depending on area plan and school building design. Compact form assures cost and energy efficient building that can easily fit to many plots. The GH can also be multiplied adding others in any of its sides. Can be also organized in different spatial configurations.

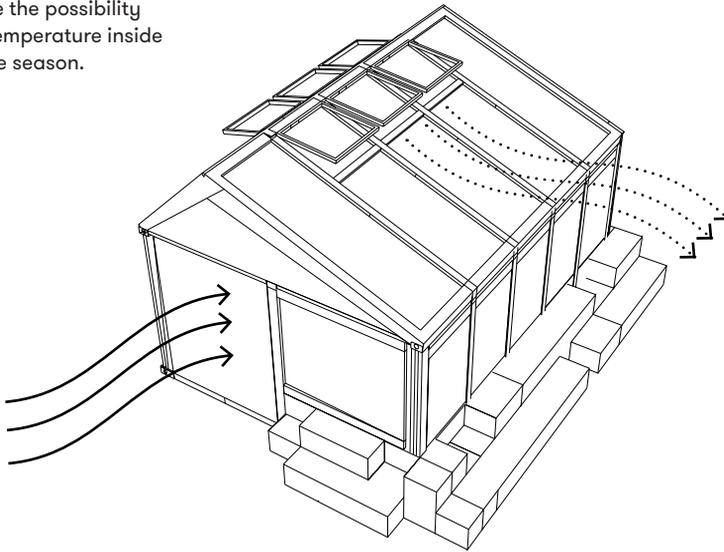


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## Indoor climate

Greenhouse project supports passive heating and cooling solutions by harvesting solar heat gains and providing cooling in summer through natural ventilation and use of chimney effect. Additional heat will be generated in cold season through composting process which takes place in plant boxes.

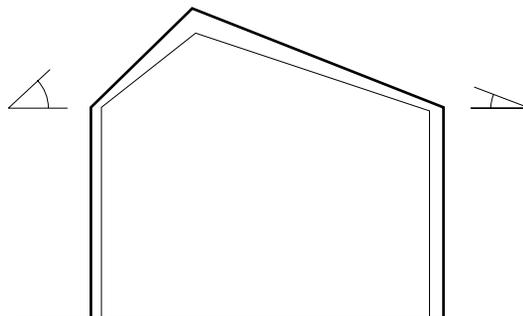
All its facades can be opened too in order to create the possibility to regulate the temperature inside depending on the season.



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## Solar exposure

Greenhouse roof slope guarantees high sun exposure that contributes to cultivation of plants growing inside and passive solar heat gains, which is the main heat source of building. Roof pitch can be however adjusted for sites with a lot of obstructions.



## Growth House value:

- offer of extracurricular instructive activities (possibility of extra income)
- appealing learning program promoting sustainable education
- additional school/institutional space
- healthy green spot in built city environment, activation of outdoor (possible unused) space

**Growth House is a self-sufficient off-grid structure which harvests from nature.**



- Uses natural ventilation
- Passive cooling and passive solar heat
- Reuses rainwater for growing plans
- Organic heating
- Solar lamps
- Maintenance is easy however requires some of the work of children which is a part of educational scope.

**Light UP is a group of young entrepreneurs that are developing the creative solutions allowing investors to make safer, more profitable and at the same time sustainable ventures.**

**Our concept is based on spotting business opportunities that promote sustainable energy transformation and improve livability in the cities.**

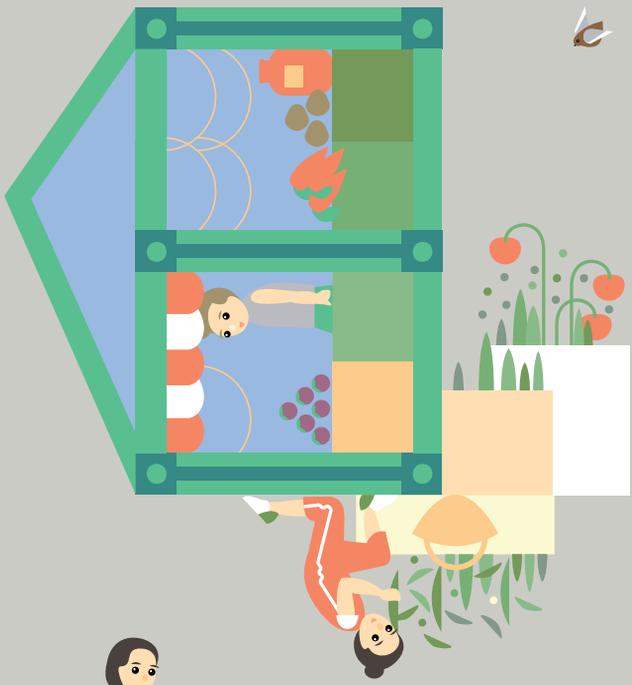


[lightupgroup.eu](http://lightupgroup.eu)

fb: [lightupgroup.eu](https://www.facebook.com/lightupgroup.eu)

email: [asz@lightupgroup.eu](mailto:asz@lightupgroup.eu)

tlf: +4521689447; +4550337937



lightupgroup.eu

