

Modular Rooftop Green Technologies

Theresa Bender (AE), Peter Carosa (CE), Tyler Kornacki (CE), Zach Rellstab (AREN/RBE) and Zack Zolotarevsky (AE) Professor Marja Bakermans (BBT) and Professor Bethel Eddy (HUA)

SQUARES

PROBLEM

The rapid expansion of humanity continues to destroy and replace natural ecosystems. Humanity must find a way to provide space for ecosystems to exist.

Create a market friendly modular roof system to provide missing ecosystem services.

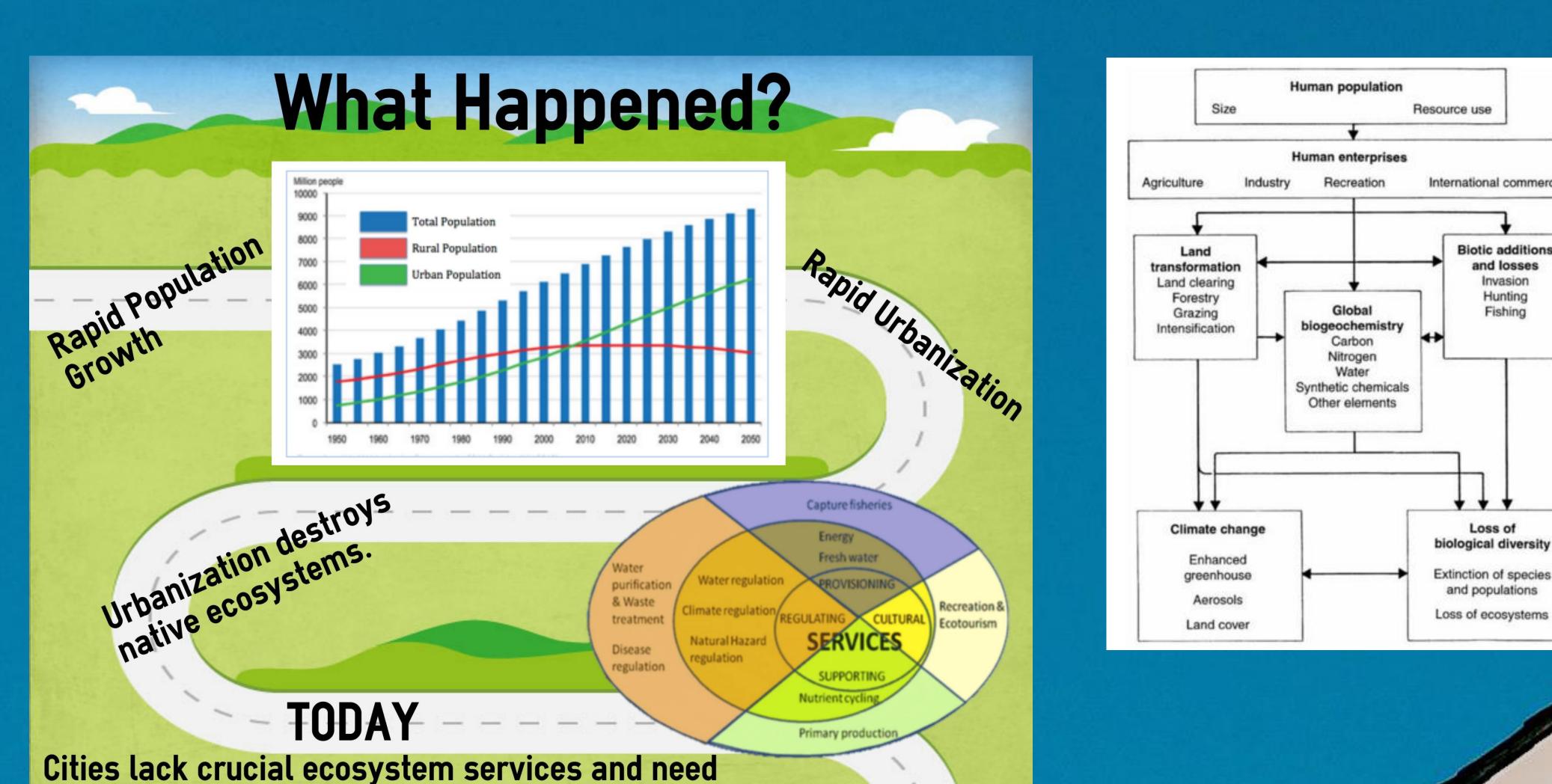
Rapid Population Growth



Turn This

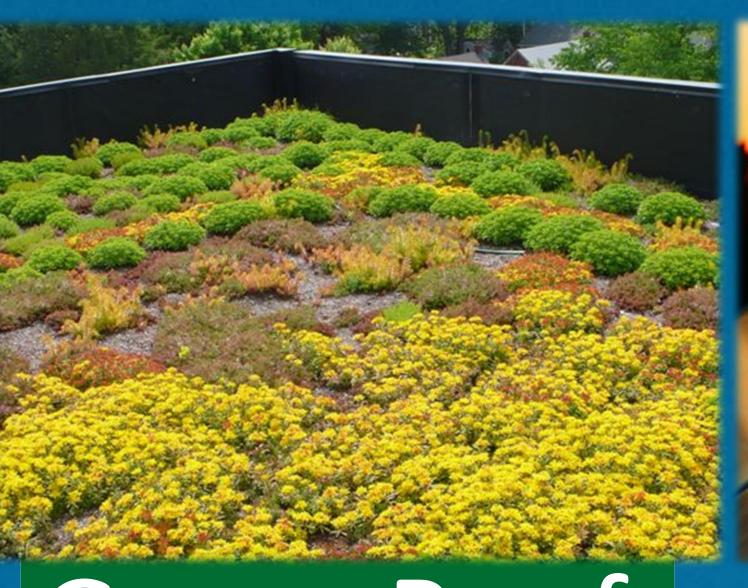


This Into



OPPORTUNITY

Rooftops provide valuable unutilized space which when used correctly can help mitigate and solve the problems associated with a lack of native ecosystems.



Green Roofs

Biodiversity Runoff Control \$65.00

Solar Panels

Renewable Energy Reduce Dependancy

\$500.00



Algae Farms

Pollution Control Nutritional Content \$375.00

The Design

- 1x1 meter
- 30cm high
- Central Drainage
- Interlocking Design

Interlocking Connections Central Drain Raised Grid System Drain System Connection

Acknowledgements

We would like to give a special thanks to Jordan Richie, Director of Education and Accreditation at Green Roofs for Healthy Cities and Andrea Saven, Technical Director at Columbia Green Technologies for helping us research our project by allowing us to interview them. We would also like to thank Professor Bakermans and Professor Eddy, as well as our PLA's, for providing us with the educational opportunity and guiding us through the project.

References

to find a way account for the missing services.

(n.d.). Retrieved December 6, 2015, from http://4vector.com/i/free-vector-green-vs-polluted-city_133074_Green_Vs_Polluted_City.jpg Grass on the roof. (n.d.). Retrieved December 5, 2015, from https://www.flickr.com/photos/kafka4prez/41572747 Green roof. (n.d.). Retrieved December 6, 2015, from https://www.flickr.com/photos/arlingtonva/4898122949 Photovoltaik. (n.d.). Retrieved December 5, 2015, from https://www.flickr.com/photos/pink_dispatcher/483756270 Physical Properties of Acrylite FF. (n.d.). Retrieved December 1, 2015, from http://www.sdplastics.com/acryliteliterature/1121DFFPhysicalProperties[1].pdf Ruan, R. (n.d.). Mass Culture of Algae from Waste Water for Biofuels Production. Retrieved December 8, 2015, from http://mrec.org/files/2011/02/09-MREC-Urban Sprawl, Jaipur, India. (n.d.). Retrieved December 7, 2015, from https://www.flickr.com/photos/ru/boff/8176133206

What in the World Is Algae Farming? (n.d.). Retrieved December 6, 2015, from http://solar.calfinder.com/blog/news/what-in-the-world-is-algae-farming/