NET 0 BUILDING

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NET 0 ENERGY

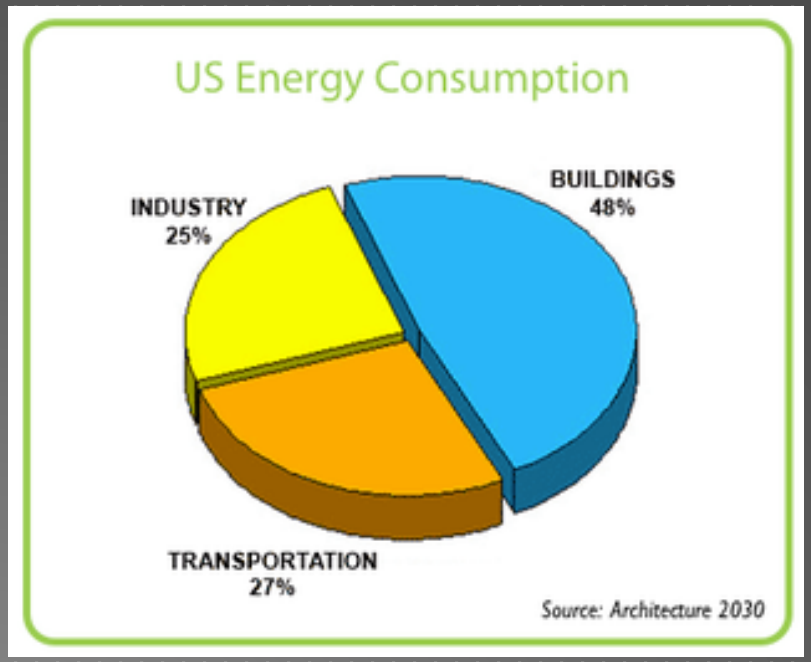
- What is it?

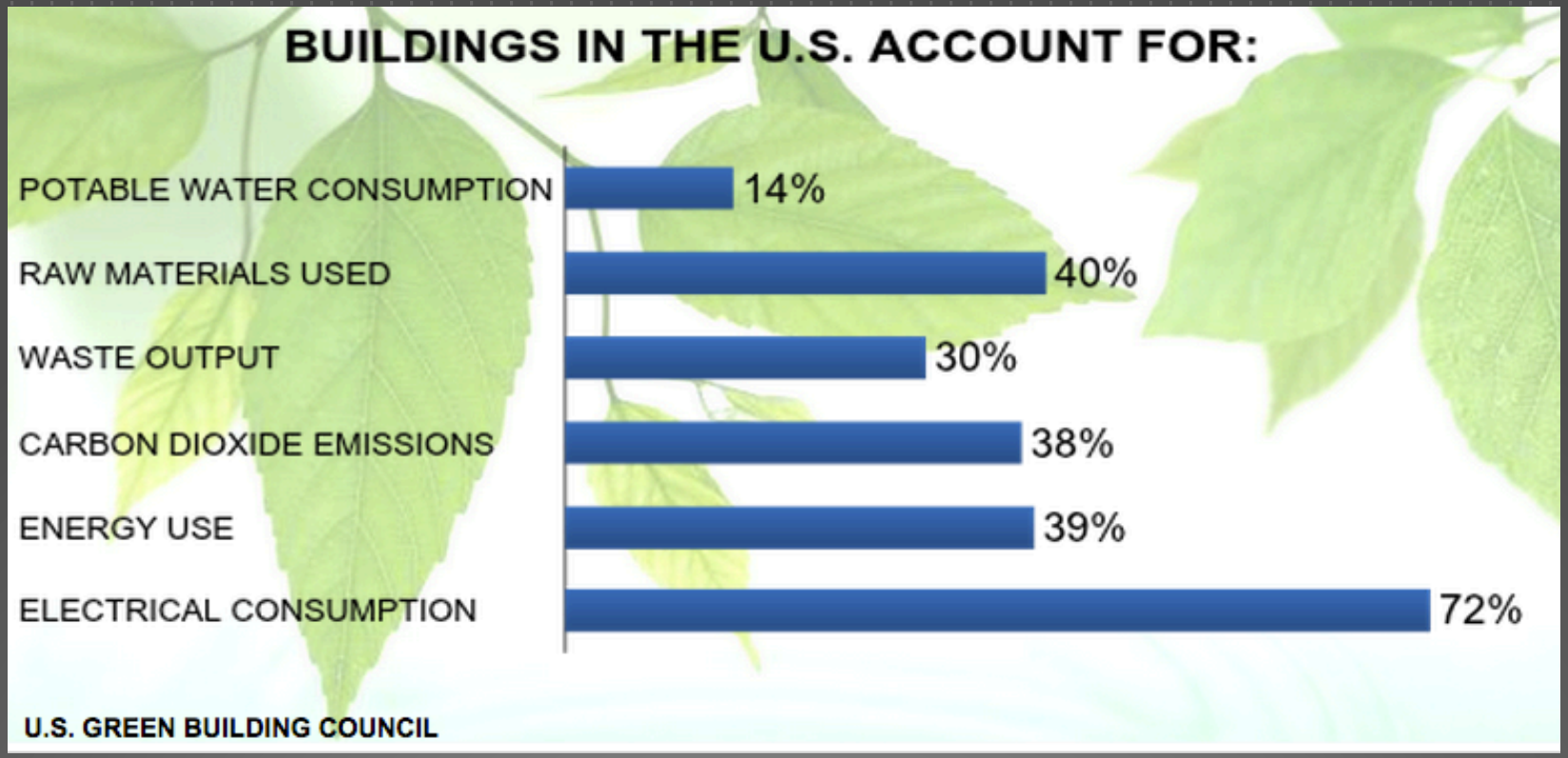
- ✓ The concept of *reducing* energy consumption *to 0 or near 0 level*
- ✓ Generate as much energy as it consumes
- ✓ Results - *0 or near 0 net energy bill*

HOW TO ACHIEVE NET 0?

- Renewable Energy Resources!
  - Solar
  - Wind Turbines
  - Geothermal
  - Daylight Harvesting
  - Rainwater Harvesting

WHY NET 0…


US Energy Consumption
BUILDINGS
48%
INDUSTRY
25%
TRANSPORTATION
27%
Source: Architecture 2030



- If not now, when?

IT IS RELEVANT

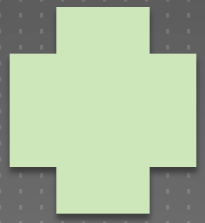
IT IS IMPACTFUL

PLAN

- Conduct in-depth research
- Design
- Budget for new building
- Implement construction.
- Evaluate outcomes
- Transform old buildings (long run)

PLAN

Strategic Design



Renewable Systems

STRATEGIC DESIGN

- **Student Services Building**
- Energy conservation techniques
  - LED lighting
  - Temperature control
  - Revolving doors
  - Occupancy- Vacancy sensors

STRATEGIC DESIGN

- Water conservation techniques
  - Faucet automatic sensors
  - Dual flush toilets
  - Low water flow urinals

RENEWABLE SYSTEMS

- Rain water collection
  - Irrigation
  - toilets
- Solar Shading
- Day light harvesting
  - Solar Panels
- Wind Turbines

TIMELINE

Our Baseline:

Bioengineering and Science Building

TIMELINE

Event	BSB Project Schedule	Net Zero Project Schedule
CIP Approval	02/09/2012	November 2014
BOR/Chancellor DD Approval	08/21/2013	May 2016
THECB Approval	10/24/2013	July 2016
Issue NTP Construction	12/02/2013	Sept 2016
Substantial Completion	10/01/2015	July 2018
Final Completion	11/02/2015	August 2018
Operational Occupancy	12/02/2015	Sept 2018

COST

Building	Square Feet	Total Cost (millions)
JSOM II	110,000	$25
Student Services Building	74,000	$27.5
Edith O'Donnell	155,000	$60
Proposed Net-zero Building	115,000	$65 ??

COST

- Solar Panels

System Size	50 kW	75 kW	100 kW	250 kW	500 kW	1,000 kW
System Area	3,846 sq. ft.	5,769 sq. ft.	7,692 sp. ft.	19,237 sq. ft.	38,462 sq. ft.	76,924 sq. ft.
List Price	$108,350	$158,400	$206,800	$489,750	$912,600	$1,808,300

COST

- Skystream 3.7 Wind Turbine

Generator alone

$5,400

Purchase and installation

$12 - $15k

Can recoup cost in

5-15 years

COST

- Water Tank

20,000 gallon tank

$14,621

CONCLUSION

- *Relevant* to our community
  - (Coppell & Irving Schools)
- *Savings*
  - on energy costs will be significant
  - on water cost also significant
- Benefits environment
- UTD *recognition*
  - Cutting edge and innovation
  - Tier One