


Sustainability Assessment Software

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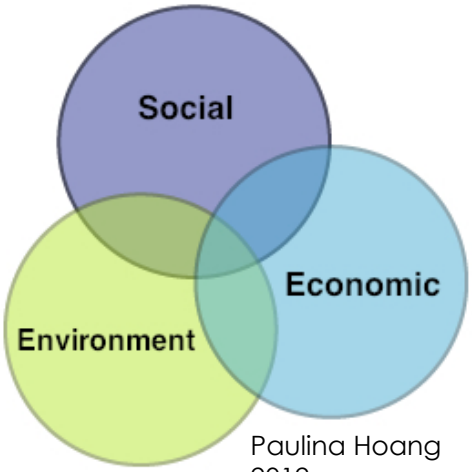
http://www.vernonenvironmental.com/Environmental_Sustainability.asp
http://www.myglobalvision.com/2010/06/g8g20-security-bill-what-do-you-think/
http://www.ralcorp.com/About%20Us/sustainability/social/
http://currengroup.com/web-design/gears/

Background

- What is Sustainability to us?
- What is the need for sustainable assessment?
- What is the final deliverable?



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Construction

Life

End of Life

Sustainability=ƒ (Enviromental, Social, Economic)

Picture 1: http://4photos.net/photosv2/Construction____Evolution_of_t_1274765113.jpg
Picture 2: Courtesy of Dr. Bradley Striebig
Picture 3: http://www.barrysbest.net/OminousWeather/images/WasteManagementMackNorcross.jpg

What is an Indicator?

- A metric to quantifiably measure sustainability

Table 1: Sample of Indicators for Construction Phase

Environmental	Social	Economic
Amount of CO_2 from transportation	Number of local workers hired	Cost of Material
Amount of water used	Inconvenience of Location	Cost of Transportation

Sustainability Matrix

	Environmental	Social	Economic
Construction	x_A	x_B	x_C
Life	x_D	x_E	x_F
End of Life	x_G	x_H	x_I

Indicator Equations

Environmental

Construction

X_A = Composite Value

1: Total CO_2 emissions from construction vehicles
2: Total CO_2 emissions from transportation of materials
3: Total water usage during construction

$$x_A = f(y_1, y_2, y_3) \quad (1)$$

y = normalized indicator value

$$y_1 = \frac{X_1 - X_{min}}{X_{max} - X_{min}} \quad (2)$$

w = weight

$$x_A = \Sigma yw = y_1w_1 + y_1w_2 + \ldots + y_nw_n \quad (3)$$

$\Sigma w_i = 100\%$

Future Work

	Environmental	Social	Economic
Construction	0.81	0.25	0.91
Life	0.54	0.12	0.32
End of Life	0.67	0.83	0.62

Questions?

- Current Progress
  - Established Indicators
  - Proposing Weights
  - Determining Scale
  - Excel/Access Coding
- Future Work
  - Creating the Interface
  - Testing the Software