The Non-Renewable Spaceship
Friday Forum

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spinner tools syllabus methods of thought agu open model soc -¿ out -¿ health limeeffect sys reg toolbox extractor

Spaceship Earth What would you take with you on a spaceship? The need to set aside some non-renewables, in case weak sustainability doesn't suffice.

1: rectangle with area A, split into urban, ag, nature 2: roll it up into cylinder, with urban tower 3: add fossil fuel launcher on edges and bottom

$$R_w = \frac{V_p + V_a}{365.25 days} \implies V_w = N R_w T_w$$

V_p	water used by a person directly per year	5 m^3
V_a	water used by a person through agriculture per year	3000 m^3
T_w	time to process waste water	20 day
R_w	rate of water use by people	8.22 m^3/day
V_w	total volume of water onboard	1.645e5 m^3

Constants: V (volume of core), A (area of spiral)
Variables: C (radius of core), R (radius of ship), L (length of spiral), W (width of ship), Θ (angular length of spiral)

$$A = WL$$
$$W = 2R$$
$$V = \pi C^2 W$$
$$r(\theta) = \frac{H\theta}{2\pi} + C$$
$$R = r(\Theta)$$
$$L = \int_0^\Theta r(theta)d\theta$$

$$L = \frac{A \left(RootOf \left(\left(4\,AH\pi^2 + 4\,V\pi^2 \right) \_Z^6 - V^3 \right) \right)^2 \pi}{V}$$

move water to center? or build nuclear power plant at center (for weight and heat) calc gravity (+ centripital) at diff distances split up energy from nukes into heat, light, work

building costs and infrastructure maintenance workers and their
equipment