UT Seay

Design option comparison

11/9/2020

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Report Summary

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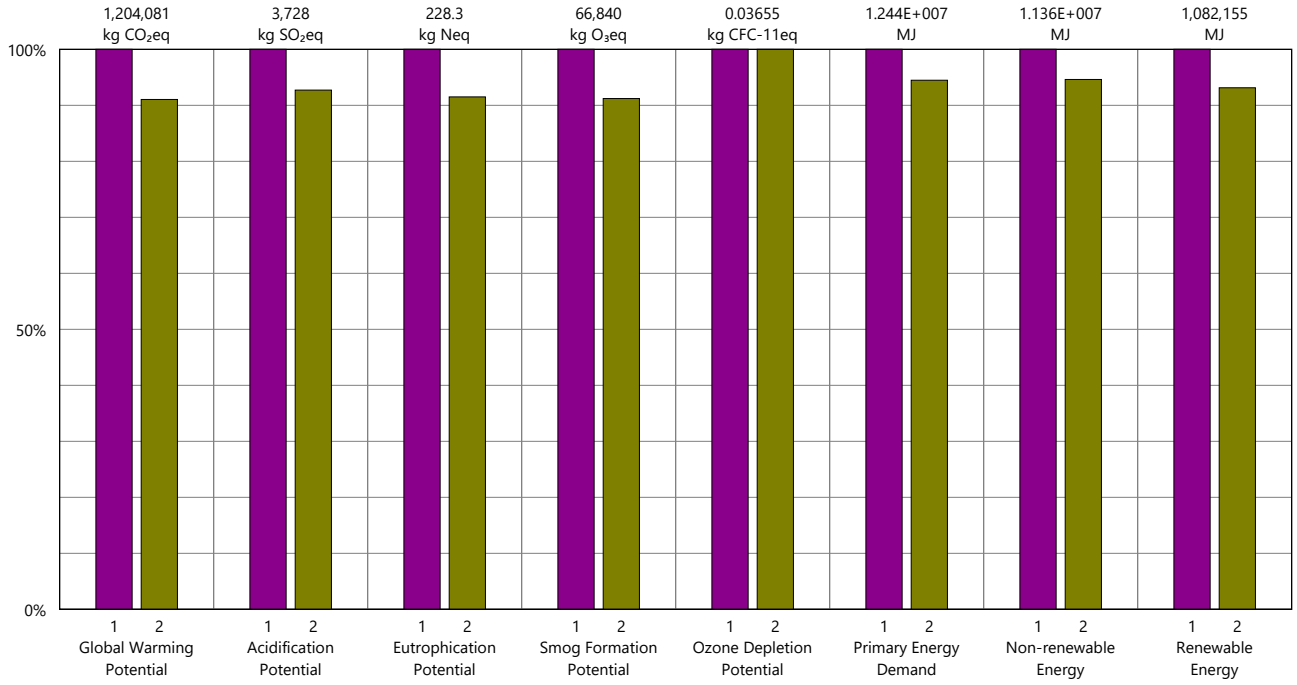
Author	MartinTorres-WPM
Company	Walter P Moore
Date	11/9/2020
Project	UT Seay
Location	108 E Dean Keeton St, Austin, TX 78712
Gross Area	34856 ft^2
Building Life	60 years
Boundaries	Cradle to grave, inclusive of biogenic carbon; see appendix for a full list of materials and processes

Goal and Scope of Assessment
Final WBLCA comparing baseline and proposed with changes to the concrete mix design. (1) NRMCA South Central regional averages, (2) Mixes from construction submittals including CarbonCure

Summary page from design option comparison. See following pages for summaries from individual runs.



Legend

Design Options
- Design Option 1 (primary)
- Design Option 4

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Goal and Scope of Assessment
Baseline with NRMCA South Central regional average concrete mixes

Summary page from Tally run for Reference building showing lifecycle stage breakdowns.

Environmental Impact Totals	Product Stage [A1-A3]	Construction Stage [A4]	Use Stage [B2-B5]	End of Life Stage [C2-C4]	Module D [D]
Global Warming (kg CO_2eq)	1,036,569	29,188	114,708	108,497	-84,882
Acidification (kg SO_2eq)	2,820	335.9	371.9	405.5	-205
Eutrophication (kg Neq)	171.7	17.22	24.76	20.88	-6.32
Smog Formation (kg O_3eq)	47,623	8,302	4,595	8,056	-1,735
Ozone Depletion (kg CFC-11eq)	0.03439	9.564E-010	0.001625	6.380E-006	5.220E-004
Primary Energy (MJ)	9,907,824	413,874	1,427,646	1,499,914	-808,908
Non-renewable Energy (MJ)	9,153,009	405,432	1,198,869	1,401,884	-796,971
Renewable Energy (MJ)	756,219	8,356	230,066	99,751	-12,237
Environmental Impacts / Area					
Global Warming (kg CO_2eq/m^2)	320.1	9.014	35.42	33.51	-26.2
Acidification (kg SO_2eq/m^2)	0.8707	0.1037	0.1148	0.1252	-0.06336
Eutrophication (kg Neq/m^2)	0.05304	0.005317	0.007648	0.006447	-0.001952
Smog Formation (kg O_3eq/m^2)	14.71	2.564	1.419	2.488	-0.5358
Ozone Depletion (kg CFC-11eq/m^2)	1.062E-005	2.953E-013	5.017E-007	1.970E-009	1.612E-007
Primary Energy (MJ/m^2)	3,060	127.8	440.9	463.2	-250
Non-renewable Energy (MJ/m^2)	2,827	125.2	370.2	432.9	-246
Renewable Energy (MJ/m^2)	233.5	2.581	71.05	30.80	-3.78

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Goal and Scope of Assessment
Proposed building only with mixes from construction submittals including CarbonCure

Summary page from Tally run for proposed (as built) building showing lifecycle stage breakdowns.

Environmental Impact Totals	Product Stage [A1-A3]	Construction Stage [A4]	Use Stage [B2-B5]	End of Life Stage [C2-C4]	Module D [D]
Global Warming (kg CO_2eq)	929,914	27,717	114,708	108,817	-84,868
Acidification (kg SO_2eq)	2,583	300.0	371.9	407.0	-205
Eutrophication (kg Neq)	153.6	15.89	24.76	20.95	-6.31
Smog Formation (kg O_3eq)	42,429	7,589	4,595	8,085	-1,731
Ozone Depletion (kg CFC-11eq)	0.03439	9.134E-010	0.001625	6.380E-006	5.220E-004
Primary Energy (MJ)	9,235,412	394,301	1,427,646	1,505,393	-808,787
Non-renewable Energy (MJ)	8,555,641	386,087	1,198,869	1,407,008	-796,797
Renewable Energy (MJ)	681,833	8,154	230,066	100,113	-12,291
Environmental Impacts / Area					
Global Warming (kg CO_2eq/m^2)	287.2	8.559	35.42	33.60	-26.2
Acidification (kg SO_2eq/m^2)	0.7975	0.09264	0.1148	0.1257	-0.06333
Eutrophication (kg Neq/m^2)	0.04743	0.004908	0.007648	0.006471	-0.00195
Smog Formation (kg O_3eq/m^2)	13.10	2.344	1.419	2.497	-0.5345
Ozone Depletion (kg CFC-11eq/m^2)	1.062E-005	2.821E-013	5.017E-007	1.970E-009	1.612E-007
Primary Energy (MJ/m^2)	2,852	121.8	440.9	464.9	-250
Non-renewable Energy (MJ/m^2)	2,642	119.2	370.2	434.5	-246
Renewable Energy (MJ/m^2)	210.6	2.518	71.05	30.92	-3.80