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Appendix A: Cost Analysis

Use of fabric formwork for concrete columns, would result in savings for project owners, builders and contractors. Since in this study comparison was made between cardboard and fabric formwork, a cost evaluation was adapted from the industry to show the amount of savings when the two techniques are being employed [1]. This case study reviews cost analysis of column forms for a project in Aldergrove, BC. As seen in Table A1 and A2, the analysis compares the overall cost of a non-permeable commercially available column fabric formwork called Fast-Tube™ (Figure A1) to conventional cardboard formworks and Geotex 315ST used in this thesis. As seen in Table A2, comparing to cardboard formwork, cost analysis shows 72.2% reduction in cost for Fast-Tube™ and 89.8% for Geotex 315ST.

Table A1: Project detail used for cost analysis

Project Details	mm	inch
Column diameter	254	10
Column height	1520	60
Number of columns	24	

Table A2: Project detail used for cost analysis

Item	Fast-Tube™	Cardboard	Geotex 315ST
Form purchase length m [ft]	36.56 [120]	2.44 [8]	78.64 [258] (Roll of 5.33m/17.5' width)
Total linear length required m [ft]	36.56 [120]	58.52 [192]	7.62 [25]
Waste per column [%]	0	38	0
Price per linear foot	$0.95	$1.69	$1.57 (per column/17.5 sqf)
Purchase price	$113.69	$323.76	$39.25
Volume of column forms m [ft^3]	0.023 [0.815]	1.89 [67]	0.023 [0.815]
Delivery cost	$ -	$26.32	$ -
Setup time [min/column]	same	same	7
Stripping time [min/column]	0.5	3	0.5
Stripping cost	$4.17	$25.00	$4.17
Disposal cost	$ -	$49.33	$ -
Total cost	**$117.86**	**$424.41**	**$43.42 ***

** Plus cutting and assembly time for handmade formed columns*

Table A3: General assumptions used for cost analysis of the project

	General Assumptions
Volume of column forms	Assumes every 2nd cardboard tube is nested inside the first
Delivery cost	$0.01/m^3 [$0.39/ft^3], local courier, 30 minute delivery
Disposal cost	$0.04/m^3[$1.48/ft^3], assumes full truckload pricing, stripped cardboard volume is 1/4 of original
Purchase price	Contractor price, Vancouver, BC for Fast-Tube™ and Winnipeg, MB for Geotex 315ST
Disposal	Fast-Tube used as an under-slab membrane, Geotex 315ST used as geotextile, cardboard goes to landfill
Geotex 315ST Specs.	Rolls of 418 sqm [4500 sqf], 1.07 by 1.52 m [3.5' by 5'] of fabric needed to form each column



Figure A1a: Commercially available column fabric formwork called Fast-Tube™ on...



Figure A1b: Commercially available conventional cardboard formworks on a job...

See Also

Place text here.

References

[1] *Fab-Form Industries Ltd.* 2009. http://fab-form.com/ (accessed August 11, 2009).

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https://www.fabwiki.fabric-formedconcrete.com/doku.php?id=fabwiki:research:canada:delijani:appendix_a

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