Budget Approach PMGT501

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Budget Approach to Sustainable Home Construction Project

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Determining an Accurate Budget

The Sustainable Home construction project is based on a budget not to exceed $1,000,000. This budget was derived from an initial top-down estimate by the corporate managers. (Larson & Gray, 2014, p. 134) While this top-down method was the main input in developing the budget other key elements were utilized creating the budget for this construction project. Since the design was not yet finalized it was logical to utilize a top-down approach to determine the estimated project cost. (Larson & Gray, 2014, p. 135) In Table 1 below is an example of the top-down estimate for the Sustainable Home Construction project.

Once the initial project plan was developed and key requirements determined then research from the National Association of Home Builders (NAHB) would provide accurate cost estimates as the project developed. The cost estimate for a single family home in 2013 was just under $250,000.

The U.S. Green Building Council defined a LEED house, “Leadership in Energy & Environmental Design” (Unknown, n.d.). Would provide specific building criteria and allow for the estimate to be modified meeting the project objective. The budget would become more accurate as the project progressed. (Larson & Gray, 2014)

The time-phased work report in Table 2 is a break down by primary tasks from the project plan and shows Name of key task, remaining cost, actual cost, cost or (estimated cost) with Actual Cost of Work Performed (ACWP), Budgeted Cost of Work Performed (BCWP), and Budgeted Cost of Work Scheduled (BCWS) to provide for accurate tracking of each deliverable and if it is under cost or over cost as compared to the project estimate. This tracking takes into account cost of resources paid. The information in table 2 would provide accurate budget

tracking as the project progressed allowing for adjustments and changes when each high level task was reported.

When utilizing Microsoft Project 2013 the team can also track the variance over time utilizing the report option. The variance over time in Microsoft Project 2013 allows for viewing "Cost and schedule variances for the project based on status date. If CV is negative then, the project is over budget. If SV is positive then the project is behind schedule"

Table 1 Sustainable Home Construction Project Cost Estimate

WBS	Task Name	Duration	Resource Names	Cost
1	**Sustainable Home Construction Project**	**180 days**		**$681,157.52**
1.1	**Project Initiation**	**2 days**		**$78,040.00**
1.2	**Project planning**	**47 days**		**$72,680.00**
1.2.1	**Design**	**47 days**		**$67,680.00**
1.2.2	Permitting	30 days	County Government, Permit Fees[1]	$5,000.00
1.2.3	Design complete	0 days		$0.00
1.3	**Executing**	**127 days**		**$524,037.52**
1.3.1	**Foundation**	**22 days**	**Foundation Materials[1]**	**$17,120.00**
1.3.2	**Geothermal Heat pump ground unit**	**11 days**	**Geothermal Materials[1]**	**$53,900.00**
1.3.3	**Framing**	**17 days**	**Framing Materials[1],Roofing Materials[1],Trusses[1]**	**$139,476.40**
1.3.4	**HVAC system**	**13 days**	**HVAC Materials[1]**	**$14,160.00**
1.3.5	**Electrical**	**9 days**	**Electrical Materials[1]**	**$21,455.20**
1.3.6	**Plumbing**	**11 days**	**Plumbing Materials[1]**	**$22,191.20**
1.3.7	**Communication systems wiring**	**10 days**	**Communication System Materials[1]**	**$23,000.00**
1.3.8	Interior structure ready for drywall	0 days		$0.00
1.3.9	**Solar system**	**4 days**	**Solar Panel Materials[1]**	**$25,600.00**
1.3.10	**Exterior finish**	**30 days**		**$57,800.56**
1.3.11	**Interior**	**69 days**		**$119,454.16**
1.3.11.1	**Drywall**	**18 days**	**Drywall Materials[1]**	**$19,040.00**

1.3.11.2	**Interior finish carpentry**	**18 days**	**Interior Finish Materials[1]**	**$16,400.00**
1.3.11.3	**Interior painting**	**11 days**	**Paint (Int)[1]**	**$12,200.00**
1.3.11.4	**Kitchen and bathroom cabinetry**	**14 days**	**Cabinets[1]**	**$20,380.00**
1.3.11.5	**Appliances and fixtures**	**22 days**		**$23,574.16**
1.3.11.6	**Finish flooring**	**7 days**		**$27,860.00**
1.3.11.7	Interior complete	0 days		$0.00
1.3.12	Structure complete (Interior and Exterior)	0 days		$0.00
1.3.13	**Landscaping**	**26 days**	**Landscaping Materials[1]**	**$29,880.00**
1.4	**Monitoring and control**	**129 days**		**$4,480.00**
1.5	**Closing**	**3 days**		**$1,920.00**
1.5.1	Final inspection and acceptance by owners	3 days	Customer, PM	$1,920.00

Table 2: Cost of all top level tasks

Name	Remaining Cost	Actual Cost	Cost	ACWP	BCWP	BCWS
Lot purchased	$75,000.00	$0.00	$75,000.00	$0.00	$0.00	$0.00
Contract signed, Project started	$3,040.00	$0.00	$3,040.00	$0.00	$0.00	$0.00
Design	$67,680.00	$0.00	$67,680.00	$0.00	$0.00	$0.00
Permitting	$5,000.00	$0.00	$5,000.00	$0.00	$0.00	$0.00
Design complete	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Foundation	$17,120.00	$0.00	$17,120.00	$0.00	$0.00	$0.00
Geothermal Heat pump ground unit	$53,900.00	$0.00	$53,900.00	$0.00	$0.00	$0.00
Framing	$139,476.40	$0.00	$139,476.40	$0.00	$0.00	$0.00
HVAC system	$14,160.00	$0.00	$14,160.00	$0.00	$0.00	$0.00
Electrical	$21,455.20	$0.00	$21,455.20	$0.00	$0.00	$0.00
Plumbing	$22,191.20	$0.00	$22,191.20	$0.00	$0.00	$0.00
Communication systems wiring	$23,000.00	$0.00	$23,000.00	$0.00	$0.00	$0.00
Interior structure ready for drywall	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Solar system	$25,600.00	$0.00	$25,600.00	$0.00	$0.00	$0.00
Exterior finish	$57,800.56	$0.00	$57,800.56	$0.00	$0.00	$0.00
Interior	$119,454.16	$0.00	$119,454.16	$0.00	$0.00	$0.00
Structure complete (Interior and Exterior)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Landscaping	$29,880.00	$0.00	$29,880.00	$0.00	$0.00	$0.00
Final inspection and acceptance by owners	$1,920.00	$0.00	$1,920.00	$0.00	$0.00	$0.00

References

Unknown. (n.d.). *U.S Green Building Council*. Retrieved November 12, 2014, from U.S. Grenn Building Council Web site: www.usgbc.org/leed

Larson, E. W. & Gray, C. F. (2014). *Project management: The managerial process.* (6th ed.). New York, NY: McGraw-Hill Education.

Taylor, H. (2014). Cost of constructing a home. National Association of Home Builders. Retrieved from http://www.nahb.org/generic.aspx