Sometimes the cost of installing a landscape plan can be quite shocking for those not familiar with all the elements of a landscape. When one breaks down the various expenses involved in a job, the total costs appear much more reasonable. This unit presents one method of calculating landscape costs.

**Objective:**

Calculate costs for a landscape plan.

**Key Terms:**

- area measurements
- bid
- contingency costs
- cost summation
- estimate
- estimate sheet
- linear measurements
- overhead costs
- profit
- specifications
- volume measurements
- yard

**Determining Landscape Prices**

When a designer meets with a client to show a proposed landscape plan, both parties must also be ready to discuss the price of installing that plan. After all, the client wants a job well done at a reasonable cost, and the landscaper must charge enough to earn a fair profit.

**ESTIMATES AND BIDS**

The initial price presented to a client is an *estimate*, or an approximate cost for the work to be done. The estimate includes the cost of materials and labor. The estimate may change throughout the design process as unforeseen problems arise. A designer becomes more skilled at giving a client an accurate estimate as he or she becomes more familiar with the landscape industry and gains more experience.
If more than one company is competing for a client’s business, a bid is given rather than an estimate. A bid is a fixed price based on the landscape work to be done. Companies try to outbid each other, and once the client chooses a design, the bid cannot change. Often the low bidder wins the job. The landscaper must be careful not to submit a bid so low that the company loses money or fails to make a fair profit.

**SPECIFICATIONS**

The landscape designer has a very specific idea about how the finished landscape should look. The designer must describe all the details of the plan to make sure the landscape is installed as designed. Also, by knowing the details of the plan, the designer can make an accurate estimate for the job.

**Specifications** are written descriptions of the landscape materials and the work, along with a time schedule for a project. Some specifications that must be provided are the size and number of plants, the types of paving materials, and instructions for installing decks, amending soil, and applying mulch. The more detailed the specification sheet, the more accurate the landscape.

**PREPARING AN ESTIMATE SHEET**

The preparation of an estimate can be made easier with a landscape construction estimate sheet. An estimate sheet is a form for calculating prices. Computer spreadsheets can be used to speed the preparation of estimates. Recorded on the estimate sheet are material costs, labor costs, overhead costs, contingency costs, and profit.

**Material and Labor Costs**

List the anticipated costs for materials and labor in detail. Include the wholesale costs of the materials to be purchased and the actual wages the employees will be paid.

Calculate the amount of time required to complete a job. Labor is measured in hours. In preparing the estimate sheet, approximate how many hours it will take an individual or a crew to do a specific function. Calculations must be made for all phases of the planting plan in order to estimate the total amount of time the job will take to complete.

**FIGURE 1.** The landscaper must do a good job for the client at a reasonable price, yet charge enough to earn a fair profit.
**Overhead Costs**

**Overhead costs** are the costs of operating the business. These include mortgage or lease payments, legal fees, insurance, office expenses, utilities (power, water, heat, phone lines), and any maintenance of equipment. Overhead costs are usually calculated at 20 percent of the material and labor costs.

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### LANDSCAPE CONSTRUCTION ESTIMATE SHEET

<table>
<thead>
<tr>
<th>Description</th>
<th>Quantity</th>
<th>Material Unit Cost</th>
<th>Total Material Cost</th>
<th>Total Labor Cost ($15.00/hr.)</th>
<th>Total Material and Labor Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Plant List</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acer saccharum ‘Green Mountain,’ 3” B&amp;B</td>
<td>3</td>
<td>$275.00</td>
<td>$825.00</td>
<td>$90.00</td>
<td>$915.00</td>
</tr>
<tr>
<td>Fothergilla gardenii, 3-gal. container</td>
<td>12</td>
<td>16.00</td>
<td>192.00</td>
<td>60.00</td>
<td>252.00</td>
</tr>
<tr>
<td>Sod</td>
<td>235 yd.</td>
<td>2.10</td>
<td>493.50</td>
<td>180.00 (12 hours)</td>
<td>673.50</td>
</tr>
<tr>
<td>Hedera helix ‘Thorndale,’ 3” pot</td>
<td>300</td>
<td>0.58</td>
<td>174.00</td>
<td>45.00</td>
<td>219.00</td>
</tr>
<tr>
<td><strong>Construction Materials</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Finish grading of site</td>
<td></td>
<td></td>
<td>525.00</td>
<td>525.00</td>
<td></td>
</tr>
<tr>
<td>Brick pavers, 6 cm</td>
<td>1,230</td>
<td>1.61</td>
<td>1,980.30</td>
<td></td>
<td>1,980.30</td>
</tr>
<tr>
<td>Sand, construction grade, 2” deep</td>
<td>3 tons</td>
<td>5.00</td>
<td>15.00</td>
<td></td>
<td>15.00</td>
</tr>
<tr>
<td>Gravel, grade 8, 3” deep</td>
<td>4 tons</td>
<td>6.00</td>
<td>24.00</td>
<td></td>
<td>24.00</td>
</tr>
<tr>
<td>Landscape fabric, 3’ H 50’ roll</td>
<td>3 rolls</td>
<td>9.95</td>
<td>29.85</td>
<td></td>
<td>29.85</td>
</tr>
<tr>
<td>Patio installation</td>
<td>300 sq. ft.</td>
<td></td>
<td>900.00 ($3.00/sq. ft.)</td>
<td>900.00</td>
<td></td>
</tr>
<tr>
<td>Florida cypress mulch, 4” deep</td>
<td>10 yd.</td>
<td>36.95</td>
<td>369.50</td>
<td>90.00</td>
<td>459.50</td>
</tr>
<tr>
<td><strong>Subtotal Costs</strong> (total material and labor costs)</td>
<td></td>
<td></td>
<td>$4,103.15</td>
<td>$1,890.00</td>
<td>$5,993.15</td>
</tr>
<tr>
<td><strong>Overhead Costs</strong> (total material and labor costs × 20%)</td>
<td></td>
<td></td>
<td></td>
<td>$1,198.63</td>
<td></td>
</tr>
<tr>
<td><strong>Contingency Costs</strong> (overhead + total material and labor costs × 10%)</td>
<td></td>
<td></td>
<td></td>
<td>$719.18</td>
<td></td>
</tr>
<tr>
<td><strong>Cost Summation</strong> (total material and labor costs + overhead + contingency)</td>
<td></td>
<td></td>
<td></td>
<td>$7,910.96</td>
<td></td>
</tr>
<tr>
<td><strong>Profit</strong> (cost summation × 20%)</td>
<td></td>
<td></td>
<td></td>
<td>$1,582.19</td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong> (cost summation + profit)</td>
<td></td>
<td></td>
<td></td>
<td>$9,493.15</td>
<td></td>
</tr>
</tbody>
</table>

*FIGURE 2. Sample estimate sheet.*
Contingency Costs

**Contingency costs** are added to all plans as insurance against unforeseen problems that would delay the completion of the landscape. Inclement weather is a common cause for work stoppage. Contingency costs vary from one firm to the next but are usually around 10 percent of the combined total of overhead plus material and labor costs.

Cost Summation

The addition of the material and labor, overhead, and contingency costs yields the *cost summation*.

Profit

A landscaper is entitled not only to charge a client for the materials, labor, and cost of operation but also to make a profit from the work. **Profit** is the amount of money the landscaper receives after deducting all costs of the project. Profit can be determined by multiplying the cost summation by 20 percent.

Total Cost

The total cost for a project is arrived at by adding the cost summation and the profit.

MATHEMATICAL MEASUREMENTS

Numerous mathematical calculations need to be performed to determine the landscape costs. They include linear, area, and volume measurements.

Linear Measurements

**Linear measurements** are the measurements made of a line. Most linear measurements are made in feet and stated as linear feet. A common linear measurement in the landscape is the length of edging needed for the planting beds. A scale is used to make measurements of linear feet. Multiple measurements are typically taken, which are added to get a total. Curving lines can be measured with a nylon string laid over the curving lines, straightened, and measured with a scale.

Area Measurements

**Area measurements** are the measurements made of a surface. They are two-dimensional measurements. The common units of area measure in the landscape industry are square feet and square yards. Sod required for a lawn is calculated by square yards (yards for short). Patio and deck surfaces and groundcover areas involve making calculations of square feet. Area measurements require the use of a scale and some basic geometry. Some examples follow.
Area of a rectangle or a square is equal to the length times the width.

\[ \text{Length} \times \text{Width} = \text{Area} \]

Length 10 ft. \times \text{Width} 5 ft. = 50 \text{ sq. ft.}

Area of a triangle is equal to \( \frac{1}{2} \) the base times the height.

\[ \frac{1}{2} \times (\text{base} \times \text{height}) = \text{Area} \]

\[ \frac{1}{2} \times (14 \text{ ft.} \times 5 \text{ ft.}) = 35 \text{ sq. ft.} \]

Area of a circle is equal to the radius squared times pi. The radius (r) is half the diameter of the circle, and pi is a constant at 3.14.

\[ r^2 \times \pi = \text{Area} \]

r = 6 ft.

\[ r^2 = 6 \text{ ft.} \times 6 \text{ ft.} = 36 \text{ sq. ft.} \]

\[ 36 \text{ ft.} \times 3.14 = 113.04 \text{ sq. ft.} \]

**Volume Measurements**

Volume measurements are the measurements of size or amount in three dimensions. The units of measure for volume in landscape applications are cubic feet and cubic yards. Cubic yards are called yards for short. A yard measures 3 feet long, 3 feet wide, and 3 feet high. Some materials measured by volume include soil, sand, gravel, and mulch. Determining the number of cubic yards of mulch needed to cover the planting beds is a frequent problem to be solved. Mulch is usually spread 2 to 3 inches deep but is sold by the cubic yard.

The volume measured is most often enclosed in a rectangle.

Volume of a rectangle is equal to the length times the width times the height.

\[ \text{Length} \times \text{Width} \times \text{Height} = \text{Volume} \]

8 ft. \times 4 ft. \times 3 ft. = 96 cu. ft.
Summary:

The initial price presented to a client is an estimate, or an approximate cost for the work to be done. The estimate includes the cost of materials and labor. If more than one company is competing for a client’s business, a bid is given rather than an estimate. A bid is a fixed price based on the landscape work to be done.

Specifications are written descriptions of the landscape materials and the work, along with a time schedule for a project.

An estimate sheet is a form for calculating prices. Recorded on the estimate sheet are material costs, labor costs, overhead costs, contingency costs, and profit.

Numerous mathematical calculations need to be performed to determine the landscape costs. They include linear, area, and volume measurements. Linear measurements are the measurements made of a line. Area measurements are the measurements made of a surface. Volume measurements are the measurements of size or amount in three dimensions.

Checking Your Knowledge:

1. How do estimates and bids compare?
2. What are specifications?
3. What costs are included in an estimate sheet?
4. How is labor determined?
5. How are linear, area, and volume measurements made?

Expanding Your Knowledge:

Using an estimate sheet, price out a plan you have made in class. Practice your measuring skills. Use wholesale catalogs to obtain prices for plant and hardscape materials. Is your estimate for the plan more or less than you expected?

Web Links:

Cost Estimating Process

Landscape Cost Components

How Much Do I Need?
http://www.a1organics.com/howmuch.html

Do It Yourself
http://www.icpi.org/homeowners/yourself.cfm