For our Second Engineering Design Project, we were given the task of coming up with a better process for recycling metal pallets. The first thing we had to do was the Customer Needs Ranking and our Missions Statement; deciding as a group what was most important for our customers and who our target customers were. Using an AHP table.

<table>
<thead>
<tr>
<th>Small footprint</th>
<th>Cost effective</th>
<th>Needs</th>
<th>Location</th>
<th>Total</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (1/2)</td>
<td>1 (1/2)</td>
<td>2</td>
<td>3</td>
<td>6.88</td>
<td>0.17</td>
</tr>
<tr>
<td>2</td>
<td>4</td>
<td>5</td>
<td>16</td>
<td>4.07</td>
<td></td>
</tr>
<tr>
<td>1 (1/3)</td>
<td>1 (1/5)</td>
<td>1</td>
<td>1 (1/3)</td>
<td>1.6</td>
<td>0.007</td>
</tr>
<tr>
<td>1 (1/4)</td>
<td>1 (1/5)</td>
<td>3</td>
<td>1</td>
<td>4.78</td>
<td>0.007</td>
</tr>
</tbody>
</table>

1. Small footprint
2. Cost effective
3. Efficient
4. Easy to implement
5. Minimal disturbance of people

1. Low carbon footprint
2. Low waste output
3. Cost effective
4. Comparable to other methods
5. Lower initial cost
6. Efficient
7. More job opportunities
8. Positive view from the public
9. Low land footprint
10. Minimal disturbance of wildlife

Recycling Process Design Project

Mission Statement
Leigh Berneshch, Lauren Brennan, Kristen Einhoven, Tim McPawin, and Bill Smith

Project Description:
To create a more efficient recycling process design for old pallets.

Key Business Goals:
Process introduced by the Third Quarter of 2015.

Primary Market:
ArcelorMittal, the largest steel producing company in the U.S. and North America.

Secondary Market:
Other companies that would have old pallets that they are unsure of what to do with, government agencies, any company that is trying to incorporate more jobs into their field.

Assumptions:
Able to go through the recycling process multiple times. We would want to be sure that the process we chose would be the most efficient and leave the smallest carbon footprint.

Stakeholders:
ArcelorMittal, construction companies, and any other companies that would be able to use this process.
Next, we needed to come up with a few concepts for the different parts required.

We finalized our process and presented our idea.

Our highest process was A1B1C2, which references the table above. Column A is Material Acquisition, which we decided that using recycling services that already exist would be the best option as it does not require the company to provide their own services. B1 refers to the Rough Process which we decided that using a crucible furnace would be the most eco-friendly option. And finally, C2 refers to the storing of the unprocessed material, in blocks, to make it easier to store, only using it when we know what it will be used for.