Ember Shield

Red B
80% of wildfire house fires are due to embers
- FEMA.gov
Customer Needs

- Robust
- Structurally Stable
- Easy to Use
- Affordable
# Product Contract

<table>
<thead>
<tr>
<th>Customer Need</th>
<th>Product Attribute(s)</th>
<th>Engineering Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Robust</td>
<td>Resistance to embers</td>
<td>$\geq 1200, ^\circ C$</td>
</tr>
<tr>
<td></td>
<td>Wind Resistance</td>
<td>$\geq 12, \text{m/s}$</td>
</tr>
<tr>
<td>Structurally Stable</td>
<td>Maximum freestanding height</td>
<td>$&gt; 36, \text{ft}$</td>
</tr>
<tr>
<td>Easy to use</td>
<td>Time to Deploy</td>
<td>$&lt; 10, \text{man hours}$</td>
</tr>
<tr>
<td></td>
<td>Weight</td>
<td>Per Module: $&lt; 5, \text{kg}$</td>
</tr>
<tr>
<td>Affordable</td>
<td>Cost</td>
<td>$&lt; $4000$</td>
</tr>
</tbody>
</table>
Mockup Concepts

40 → 4 → 2 → 1
Ember Shield

Ember shield prevents home fires
Deployment  Testing
Deployment Testing
Full Home Assembly

1. Measure House Perimeter
2. Lay inflatable poles and fireproof tarps
3. Inflate vertical poles
4. Release and inflate roof sections
Mockup Findings

Module Weight: 3 kg
Module Height: 1 story
Module Deployment: 25 sec
Full Home Assembly: ~5 hr 20 min
Business Plan

Ship crates to disaster

Sell to homeowners

Onsite assistance
Future Developments

**Scale up** to 3 stories

**Secure** corners

**Transition** between stories

**Improve** deployability