2. A SENSIBLE LIST

“A PROBLEM WELL STATED IS A PROBLEM HALF-SOLVED.”

CHARLES KETTERING

© Lifehack Quotes
2. A SENSIBLE LIST

A Sensible List

• Pete = Crazy Person
• Work Breakdown Structure (WBS)
• A Sensible List
• Why This Matters
• Organization Schemes
• WBS Examples
2. A SENSIBLE LIST

Pete = Crazy Person
2. A SENSIBLE LIST

Pete = Crazy Person
WHAT IS A WBS?

- A Work Breakdown Structure (WBS) is a decomposition of a project into smaller components.
- 100% Rule
- The magical number seven, plus or minus two
- Mutually Exclusive Elements
2. A SENSIBLE LIST

WBS Examples

WBS LEVEL 1:
1. Bicycle_ 100
  1.1 Frame Set_ 15
  1.2 Crank Set_ 5
  1.3 Wheels_ 30
  1.4 Braking System_ 5
  1.5 Shifting System_ 5
  1.6 Integration_ 35
  1.7 Project Mgt_ 5

WBS LEVEL 2:

WBS LEVEL 3:
1. Bicycle
  1.1 Frame Set
    1.1.1 Frame_ 7
    1.1.2 Handlebar_ 2
    1.1.3 Fork_ 3
    1.1.4 Seat_ 3
  1.2 Crank Set_ 5
  1.3 Wheels
    1.3.1 Front Wheel_ 13
    1.3.2 Rear Wheel_ 17
  1.4 Braking System_ 5
  1.5 Shifting System_ 5
  1.6 Integration
    1.6.1 Concept_ 3
    1.6.2 Design_ 5
    1.6.3 Assembly_ 10
    1.6.4 Testing_ 17
  1.7 Project Mgt_ 5

Read about industry impacts on our blog at www.petefowler.com
WBS Examples

WBS AS OUTLINE FOR SCOPE, BUDGET AND SCHEDULE

The WBS is the core of integrated Project Management and the Scope, Budget, and Schedule must always refer back to the WBS

Read about industry impacts on our blog at www.petefowler.com
## WBS Examples

WBS AS OUTLINE FOR SCOPE, BUDGET AND SCHEDULE

<table>
<thead>
<tr>
<th>Scope</th>
<th>Budget</th>
<th>Actual</th>
<th>Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Item 1</td>
<td>$ XXX</td>
<td>$ XXX</td>
<td>Plan/Actual</td>
</tr>
<tr>
<td>2. Item 2</td>
<td>$ XXX</td>
<td>$ XXX</td>
<td>Plan/Actual</td>
</tr>
<tr>
<td>3. Item 3</td>
<td>$ XXX</td>
<td>$ XXX</td>
<td>Plan/Actual</td>
</tr>
<tr>
<td>4. Item 4</td>
<td>$ XXX</td>
<td>$ XXX</td>
<td>Plan/Actual</td>
</tr>
<tr>
<td>5. Item 5</td>
<td>$ XXX</td>
<td>$ XXX</td>
<td>Plan/Actual</td>
</tr>
<tr>
<td>6. TOTAL</td>
<td>$ X,XXX</td>
<td>$ X,XXX</td>
<td></td>
</tr>
</tbody>
</table>

And compare performance to plan.
Why This Matters

DURING CONSTRUCTION

• Scope of Work
• Request for Proposal incl. Bid Forms and Schedule of Values
• Bid Analysis
• Contracting
• Insurance Information

• Scheduling
• Payment Processing
• Change Order Processing
• Quality Assurance Inspections
• Project Closeout
Why This Matters

IN LITIGATION

• Defect List
• Reports of All Experts
• Expert Responsibility Matrix: Who is testifying about what
• Scope of Repair
• Cost Estimates, Bids & Cost Comparisons
• Progress Schedule for Construction / Repairs
• Payment Schedule for Construction / Repairs
• Allocation of Responsibility
• Trade Contractor “Claim Packages”
Organizational Schemes

1. By Importance
2. Room-by-Room
3. SB800
4. Who Did the Work: Masterformat
5. Building Elements: Uniformat (PFCS Standard)
UNIFORMAT (PFCS STANDARD)

Level 1 Structure

A. Substructure
B. Superstructure
C. Interiors
D. Services
E. Equipment & Furnishings
F. Special Construction & Demolition
G. Building Site work
H. Other
2. A SENSIBLE LIST

Organizational Schemes

UNIFORMAT (PFCS STANDARD)

A. Superstructure
   B 2010 Siding
      Leaks
      Incorrect Nailing
   B 2060 Exterior Paint
      Deteriorated Trim
      Delaminating
   B 3001 Roof
      Damage
      Leaks
      Missing Underlayment

B. Interiors
   C 3011 Interior Paint
      Inadequate Coverage
      Wrong Color
WBS Examples

ELEMENTS:

Buildings are composed of elements like foundations, walls and roofs.

A masonry wall is a building “Element.”

The bricks and mortar are the individual “components” of masonry walls.
Case Study

**ELEMENT LIST**

- **Substructure**
  - A1010 Foundations: Subterranean Concrete Walls and Columns
  - A2000 A Concrete Subterranean Parking Garage
  - A2000 B Parking Garage Insulation
  - A2000 C Garage Venting
- **Superstructure**
  - B1002 Masonry Panels
  - B2010 Exterior Enclosure: Exterior Gypsum Ceiling
  - B2013 Exterior Enclosure: Metal Cladding System
  - B2018 A Exterior Railings with Glass Railings at Decks
  - B2018 B Exterior Wall Accessories & Decorative Metal: Metal H
  - B2018 C Exterior Wall Accessories & Decorative Metal: Metal H
  - B2018 D Exterior Wall Accessories - Metal Louvers
  - B2020 Windows
  - B2030 Exterior Doors - Building Entry Doors
  - B2031 Exterior Doors: Garage Doors and Controls
- **Interiors**
  - C1020 Interior Doors
  - C2000 Stairs (Interior and Exterior): Metal Stairs
  - C3011 Interior Paint - Common Areas
  - C3021 Floor Finishes: Vinyl Flooring
  - C3024 Floor Finishes: Carpet at Common Areas
- **Services**
  - D1010 Elevators and Lifts
  - D2010 Plumbing Fixtures: Restroom Fixtures
  - D3000 A HVAC: Cooling Towers
  - D3000 B Elevator Cooling Unit
  - D3050 Natural Gas Fuel Distribution
  - D4000 A Fire Protection: Sprinkler System / Distribution
  - D4000 B Fire Protection: Fire Extinguishers / Defibrillator
  - D4050 A Fire Protection / Fire Alarm

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Case Study

**ISSUES LIST**

- **B1000 Structural Frame (incl. Floor, Wall and Roof)**
  - B1000 A: Floor sheathing, floor joists, rim joist and rim blocking damaged by water intrusion from tub/shower.
  - B1000 B: Lack of adequate framing below walls and floor joists in bathroom #2.
- **B2012 Exterior Enclosure: Masonry Veneer**
  - B2012 A: Lack of a drainage plane behind the brick veneer on the chimney to direct water out of the assembly.
- **B2013 Exterior Enclosure: Siding & Trim**
  - B2013 A: Exterior siding buried by the concrete flatwork and brick.
- **B2040 Exterior Wall Flashing & Sheet metal**
  - B2040 A: Exterior trim flashing at roof to wall did not direct water out of the building envelope.
  - B2040 B: Exterior sheet metal on chimney not properly installed into full bed of sealant.
- **B3001 Sloped Roofs**
  - B3001 A: Valley sheet metal on sloped roof has the roof tiles butted too close together which causes debris to clog the valleys.
- **B3004 Roof Flashing & Trim**
  - B3004 A: Sheet metal tile pan on the downhill side of the chimney, east and north, was covered by roof tiles and did not provide an area for debris and water to flow around the chimney.
- **C3015 Tile & Stone Assemblies (Incl. Showers)**
  - C3015 A: Water intrusion at the horizontal tile surfaces to the horizontal cast iron surfaces.
- **D2040 Rain Water Drainage**
  - D2040 A: Rain water overflowed the rain gutter above the laundry room exterior wall and entered the building envelope at the roof to wall.