**Design for Durability Quick Reference Guide**

**How Long Is Enough?**
Not everything should last a long time. Choose a target lifetime appropriate to your product type.

**Before You Design...**

**No One Lives Forever**
Balance durability with end of life using disassembly, recycling, and other design-for-lifetime strategies.

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**Be Tough**

**Make Parts and Connections Physically Robust**
- Follow lines of force / avoid stress concentrations to make robust parts and assemblies
- Choose materials that resist fatigue and corrosion
- Reinforce the parts most likely to fail (see Lightweighting strategies)
- Predict & optimize performance with software tools like Finite Element Analysis

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**Wear Well**

**Attractive Finishes, Smooth Works**
- Choose hard materials to resist wear
- Choose materials that don’t resist wear but gain character with wear & weather
- Choose textures that hide scuffs
- Choose wear-resistant joints and connections (sealed bearings, self-lubricating bushings)

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**Encourage Maintenance**

**Enroll The User In Longevity**
- Make care instructions available, clear, & inviting
- Build maintenance instructions into the interface
- Provide maintenance tools
- Provide easy & affordable maintenance service

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**Stay Relevant**

**Survive Fashion And Lifestyle Changes**
- Classic aesthetics
- Timeless aesthetics, not fashion-driven
- Flexible use for changing user needs and scenarios