



U.S. Department of Energy
Energy Efficiency and Renewable Energy

High Performance Buildings Through Integration



Integration

- **What is Integration?**



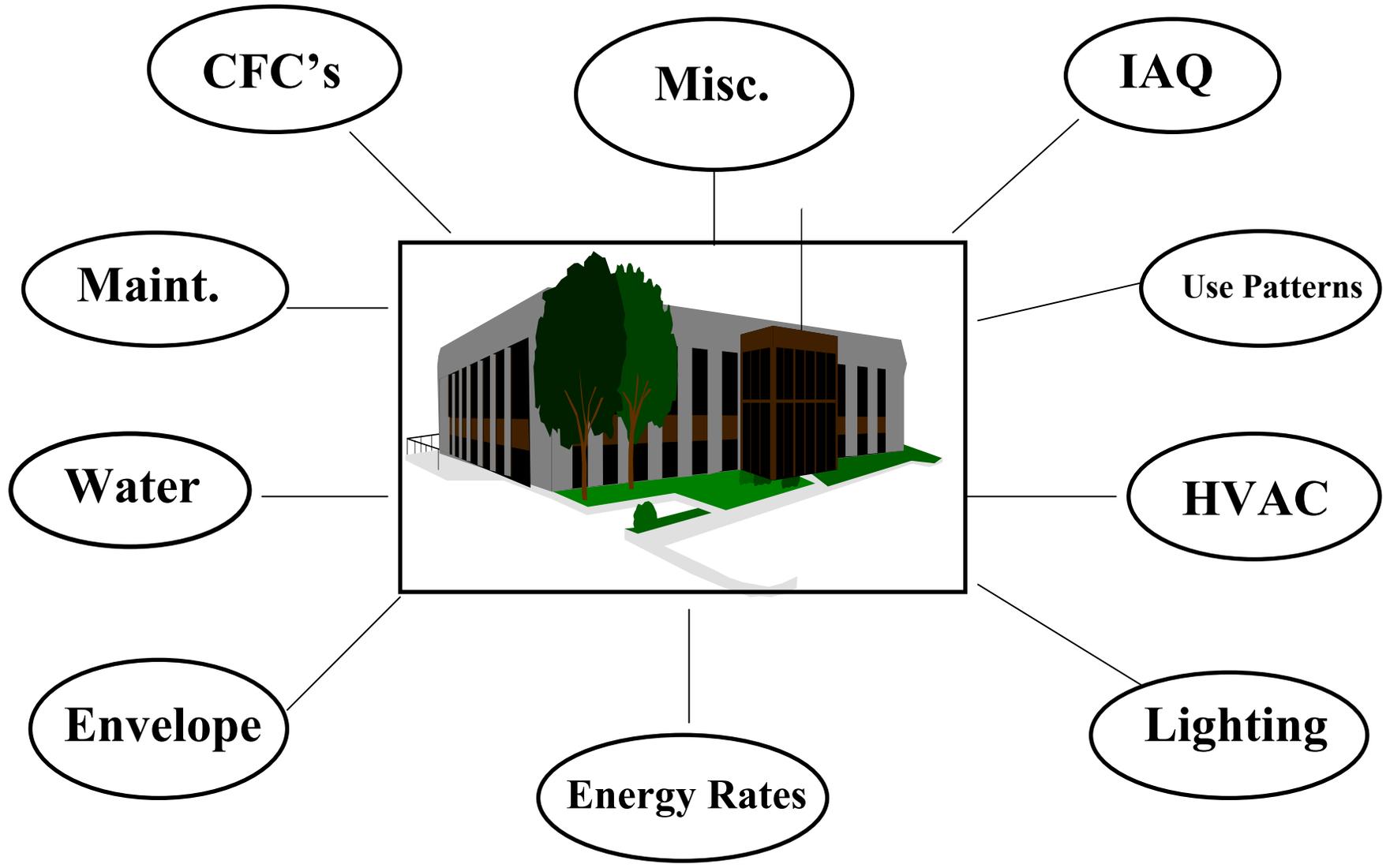
Definition

- **“To Make or Become Whole or Complete”**
- **“To Bring Parts Together Into a Whole”**



High Performance

- **What Is A High Performance Building?**





What Are The Benefits Of Building Integration

- Higher Efficiency
- Improved Comfort
- Reduced Operational Costs
- Longer Facility Life
- Others??????



What Are The Barriers To Building Integration

- **Procurement Process**
- **Paradigms**
- **Executive Support**
- **We Have Always Done Things This Way**
- **Creative Thinking**



U.S. Department of Energy
Energy Efficiency and Renewable Energy

Tools Available To Integrate For High Performance Buildings



L&M Growth vs Low Interest Rates

- L&M Growth At An Average Rate of 2-4%
- Municipal Funding Sources As Low As 3%

“ It is cheaper and in your best interest to implement high performance building applications now than to put them off for later”



ESPC

- **Self Funded Solutions From Energy and Operational Budgets**
- **Guaranteed Results**
- **Customer Maintains Complete Control**
 - Pricing
 - Contractors
 - Equipment



- **Example of High Performance Building Integration At It's Best**

University of Utah





U of U Goals

- **Retrofit 90 Plus Buildings**
- **Leverage Capital**
- **Self Fund a \$23 Million Dollar Central Plant**
- **Not Have It Impact Future Bonding**
- **Have Happy Customers With End Result**















U.S. Department of Energy
Energy Efficiency and Renewable Energy







U.S. Department of Energy
Energy Efficiency and Renewable Energy

Questions