## Cultivation

1. Irrigation
   1. Watering Amount (Volume)
      1. Total Amount
      2. Amount per Event
      3. Number of Events
   2. Watering Frequency (Timing)
      1. Duration Between Events
   3. Watering Strategy (Crop Steering)
      1. Drybacks
      2. Leachate
      3. Flushing
      4. Stacking EC
      5. Combination of all Irrigation Strategy
   4. Watering Method
      1. Hand Watering
      2. Drip Emitters
      3. Flood Table
      4. Hyrdo
      5. Aero
2. Plant Work
   1. Planting
      1. Seeds
      2. Clones
   2. Transplanting/Up-Potting
      1. Clones into Pots
      2. Smaller to Bigger growing Mediums
   3. Defoliating
   4. Skirting
   5. Lollipopping
   6. Tipping/Topping
   7. Training (LST)
      1. Tie Wraps
      2. Support Posts
      3. Trellacing
   8. Moving Between Areas
      1. Clones from Moms to Propagation Area
      2. Clones to Transplants
      3. Transplants to Veg
      4. Early Veg to Late Veg(Continue Down) or Moms(Repeat from Step i.)
      5. Late Veg to Early Flower
      6. Early Flower to Mid Flower
      7. Mid Flower to Late Flower
      8. Late Flower to Harvest
      9. Harvest to Dry Room
      10. Dry Room to Curing Room
      11. Curing Room to Finished Material
3. IPM
   1. Mixing Pesticides
   2. Scouting
      1. Pests
         1. Visual Plant Inspection
         2. Sample Removal and Inspection Under Microscope
            1. Leaf Samples
            2. Stem Samples
            3. Growing Medium Samples
      2. Diseases
      3. Deficiencies
      4. Viruses
   3. Spraying
   4. Drenching
   5. Applying Beneficials
   6. Sticky Tags
4. Growing Conditions
   1. Temperature
      1. Ambient
      2. Growing Medium
      3. Leaf Surface
      4. Day/Night Variance
   2. Humidity
      1. Ambient
      2. Growing Medium
      3. Leaf Surface
      4. Day/Night Variance
   3. Light
      1. Intensity
         1. Brightness
         2. Height
         3. Electrical Capacity
         4. PPFD
      2. Spectrum
         1. PAR
         2. Color
      3. Type
         1. LED
         2. HPS
         3. HID
         4. Fluorescent (CFL)
      4. Schedule
         1. 18/6
         2. 12/12
         3. 24/0
         4. 0/24
         5. Players Own Choice
      5. Bleed
   4. Air Flow & Ventilation
   5. CO2
   6. VPD
   7. Spacing
      1. Bench to Bench
      2. Plant to Plant
   8. Microclimates
      1. Against Wall
      2. Near A/C or Heater Vent
      3. Light Block from Equipment
      4. Plant Structure
5. Growing Medium
   1. Soil
   2. Coco Coir
   3. Rockwool
   4. Hydroponics
   5. Aeroponics
   6. Volume
   7. Additives
   8. Stage Transplant
6. Fertigation
   1. Fertilizer Type
      1. Liquid
      2. Powder / Granular
         1. Water Soluble
         2. Top Feed
      3. Organic
   2. Chemical Composition
      1. NPK Values
      2. Macro and Micro Values
      3. Additives
   3. Mixing
   4. Dosing
   5. Spraying
   6. Applying
   7. Feeding
   8. Cleaning & Sanitizing
      1. Tanks
      2. Filters
      3. Mixers
      4. Piping
      5. Pumps
      6. Hoses
      7. Equipment & Tools
7. Propagation
   1. Cutting
   2. Prepping
   3. Sticking
   4. Maintaining
8. Harvesting
   1. Remove Support
   2. Chop Plant Down
   3. Hang Plant on Dry Rack
   4. Final Defol
   5. Begin Drying & Curing Process
9. Cleaning & Sanitizing Areas
   1. Dry Clean
      1. Sweep
      2. Vacuum
      3. Leaf Blower
   2. Wet Clean
      1. Wash & Wipe Down Grow Area
         1. Tables/Benches/Floor
         2. Walls
         3. Lights
         4. Support Structures
         5. Plumbing
         6. HVAC
         7. Lighting
         8. Equipment
      2. Pressure Clean (For Larger Facilities)
         1. Tables/Benches/Floor
         2. Walls
         3. Lights
         4. Support Structures
         5. Plumbing
   3. Sanitize
      1. Growing Area
         1. Tables/Benches/Floor
         2. Walls
         3. Lights
         4. Support Structures
         5. Plumbing
         6. HVAC
         7. Lighting
         8. Equipment
      2. Irrigation Systems
         1. Drippers (if applicable)
         2. Flushing of Lines
         3. Filters
      3. HVAC
         1. Filters
         2. Drain Pans
         3. Ducting
      4. Drying & Curing Rooms
         1. Floors
         2. Walls
         3. Roof
         4. Racks
         5. Equipment
10. Data Collection & Analysis
    1. Collection
       1. Electrical Conductivity
          1. EC or PPM Meter
             1. Sample Growing Medium
             2. Sample Leachate
             3. Sample Pour Through
       2. Moisture Content
          1. VWC% Meter
             1. Sample Growing Medium
       3. pH
          1. pH Meter
             1. Sample Growing Medium
             2. Sample Leachate
             3. Sample Pour Through
       4. Temperature
          1. Temperature Meter
             1. Sample Growing Medium
             2. Sample Leachate
             3. Sample Pour Through
       5. Crop Details
          1. Name
          2. Date Planted
          3. Current Week of Growth
          4. Location
          5. Notes
       6. Macro & Micro Nutrients
          1. Spectrometer
             1. Sample Growing Medium
             2. Sample Leachate
             3. Sample Pour Through
       7. Chlorophyll Levels
          1. Chlorophyll Meter
             1. Leaf Sample
11. Due to the complexity and need for extreme detail & thoroughness I have decided to leave the breeding simulation and mechanics to be planned in its own entire document.

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## Building

1. Walls & Infrastructure
   1. Placement
      1. Any Direction
         1. Up / North / +Y
         2. Down / South / -Y
         3. Left / West / -X
         4. Right / East / +X
         5. Down / Lower / -Z
         6. Up / Higher / +Z
      2. Orientation
         1. Locked
            1. Walls = Vertical
            2. Roof & Floor = Horizontal
         2. Unlocked
            1. Rotatable
            2. Spinnable
      3. Any Location
         1. Conforming to Grid
         2. Conforming to Unlocked Playable Area
         3. Conforming to Physical Space Limitations
            1. Interference with Other Assets
   2. Size
      1. Height
      2. Width
      3. Length
      4. Thickness
   3. Material
      1. Strength
         1. Stability
         2. Durability
         3. Longevity
      2. Cost
      3. Apparence
         1. Cosmetic
      4. Illumination Properties
         1. Reflectiveness
         2. Transparency
         3. Absorption
      5. Insulating Properties
         1. Airflow
         2. Temperature
         3. Light
      6. Effeciency
2. Tables / Benches / Racks
   1. Placement
      1. Any Direction
         1. Forward / North / +Y
         2. Backward / South / -Y
         3. Left / West / -X
         4. Right / East / +X
         5. Down / Lower / -Z
         6. Up / Higher / +Z
      2. Orientation
         1. Locked
            1. Horizontal
         2. Unlocked
            1. Rotatable
            2. Spinnable
      3. Any Location
         1. Conforming to Grid
         2. Conforming to Unlocked Playable Area
         3. Conforming to Physical Space Limitations
            1. Interference with Other Assets
   2. Size
      1. Height
      2. Width
      3. Length
      4. Thickness
   3. Material
      1. Strength
         1. Stability
         2. Durability
         3. Longevity
      2. Cost
      3. Apparence
         1. Cosmetic
      4. Illumination Properties
         1. Reflectiveness
         2. Transparency
         3. Absorption
   4. Copy and Pastable
3. Plumbing & Irrigation Systems
   1. Placement
      1. Any Direction
         1. Forward / North / +Y
         2. Backward / South / -Y
         3. Left / West / -X
         4. Right / East / +X
         5. Down / Lower / -Z
         6. Up / Higher / +Z
      2. Orientation
         1. Unlocked
            1. Rotatable
            2. Spinnable
      3. Any Location
         1. Conforming to Grid
         2. Conforming to Unlocked Playable Area
         3. Conforming to Physical Space Limitations
            1. Interference with Other Assets
   2. Size
      1. Height
      2. Width
      3. Length
      4. Thickness
      5. Diameter
   3. Material
      1. Strength
         1. Stability
         2. Durability
         3. Longevity
      2. Cost
      3. Apparence
         1. Cosmetic
      4. Flow Properties
         1. Minimum Pressure
         2. Maximum Pressure
         3. Flow Rate
         4. Deviation
         5. Efficiency
   4. Copy and Pastable
4. Lighting
   1. Placement
      1. Any Direction
         1. Forward / North / +Y
         2. Backward / South / -Y
         3. Left / West / -X
         4. Right / East / +X
         5. Down / Lower / -Z
         6. Up / Higher / +Z
      2. Orientation
         1. Unlocked
            1. Rotatable
            2. Spinnable
      3. Any Location
         1. Conforming to Grid
         2. Conforming to Unlocked Playable Area
         3. Conforming to Physical Space Limitations
            1. Interference with Other Assets
   2. Size
      1. Locked
   3. Material
      1. Strength
         1. Stability
         2. Durability
         3. Longevity
         4. Bulb
            1. Durability
            2. Longevity
      2. Cost
      3. Apparence
         1. Cosmetic
      4. Lighting Properties
         1. Type
            1. LED
            2. HPS
            3. HID
            4. Fluorescent
         2. Ballast
         3. Wattage
            1. Input
            2. Output
         4. Spectrum
            1. Color
         5. PAR Level
         6. PPFD Level
         7. Heat Properties
         8. Efficiency
         9. Electrical Connections
            1. Wiring Together (Daisy Chain)
            2. Power Supply
            3. Electrical System as a Whole
   4. Copy and Pastable
5. HVAC & Airflow
   1. Placement
      1. Any Direction
         1. Forward / North / +Y
         2. Backward / South / -Y
         3. Left / West / -X
         4. Right / East / +X
         5. Down / Lower / -Z
         6. Up / Higher / +Z
      2. Orientation
         1. Unlocked
            1. Spinnable
      3. Any Location
         1. Conforming to Grid
         2. Conforming to Unlocked Playable Area
         3. Conforming to Physical Space Limitations
            1. Interference with Other Assets
   2. Size
      1. Locked
   3. Material
      1. Ducting
         1. Strength
            1. Stability
            2. Durability
            3. Longevity
         2. Cost
         3. Apparence
            1. Cosmetic
         4. Illumination Properties
            1. Reflectiveness
            2. Transparency
            3. Absorption
         5. Insulating Properties
            1. Temperature
         6. Air Flow Rate
            1. Minimum Flow
            2. Maximum Flow
            3. Number and Placement of Vents

Input

Output

* + - * 1. Efficiency
    1. A/C & Heater Units
       1. Strength
          1. Stability
          2. Durability
          3. Longevity
       2. Cost
       3. Apparence
          1. Cosmetic
       4. Illumination Properties
          1. Reflectiveness
          2. Transparency
          3. Absorption
       5. Water Connections
          1. Input
          2. Output
       6. Air Flow Rate
          1. Minimum Flow
          2. Maximum Flow
          3. Number and Placement of Vents

Input

Output

* + - 1. Electrical Connections
         1. Power Usage

Wattage

Input

Output

* + - * 1. Wiring Together (Daisy Chain)
        2. Power Supply
        3. Wiring into Electrical System as a Whole
        4. Efficiency
    1. Ventilation Fans
       1. Strength
          1. Stability
          2. Durability
          3. Longevity
       2. Cost
       3. Apparence
          1. Cosmetic
       4. Illumination Properties
          1. Reflectiveness
          2. Transparency
          3. Absorption
       5. Air Flow Rate
          1. Minimum Flow
          2. Maximum Flow
          3. Minimum Speed
          4. Maximum Speed
          5. Efficiency
       6. Electrical Connections
          1. Power Usage

Wattage

Input

Output

* + - * 1. Wiring Together (Daisy Chain)
        2. Power Supply
        3. Wiring into Electrical System as a Whole
    1. Auxiliary Fans
       1. Strength
          1. Stability
          2. Durability
          3. Longevity
       2. Cost
       3. Apparence
          1. Cosmetic
       4. Illumination Properties
          1. Reflectiveness
          2. Transparency
          3. Absorption
       5. Air Flow Rate
          1. Minimum Flow
          2. Maximum Flow
          3. Minimum Speed
          4. Maximum Speed
          5. Efficiency
       6. Electrical Connections
          1. Power Usage

Wattage

Input

Output

* + - * 1. Wiring Together (Daisy Chain)
        2. Power Supply
        3. Wiring into Electrical System as a Whole
  1. Copy and Pastable

1. Humidifiers & Dehumidifiers
   1. Humidifiers
   2. Placement
      1. Any Direction
         1. Forward / North / +Y
         2. Backward / South / -Y
         3. Left / West / -X
         4. Right / East / +X
         5. Down / Lower / -Z
         6. Up / Higher / +Z
      2. Orientation
         1. Unlocked
            1. Spinnable
      3. Any Location
         1. Conforming to Grid
         2. Conforming to Unlocked Playable Area
         3. Conforming to Physical Space Limitations
            1. Interference with Other Assets
   3. Size
      1. Locked
   4. Strength
      1. Stability
      2. Durability
      3. Longevity
   5. Cost
   6. Apparence
      1. Cosmetic
   7. Illumination Properties
      1. Reflectiveness
      2. Transparency
      3. Absorption
   8. Air Humidifying Rate
      1. Minimum Flow
      2. Maximum Flow
      3. Efficiency
   9. Water Connections
      1. Input
      2. Output
   10. Electrical Connections
       1. Power Usage
          1. Wattage
          2. Input
          3. Output
       2. Wiring Together (Daisy Chain)
       3. Power Supply
       4. Wiring into Electrical System as a Whole
   11. Copy and Pastable
2. Dehumidifiers
   1. Placement
      1. Any Direction
         1. Forward / North / +Y
         2. Backward / South / -Y
         3. Left / West / -X
         4. Right / East / +X
         5. Down / Lower / -Z
         6. Up / Higher / +Z
      2. Orientation
         1. Unlocked
            1. Spinnable
      3. Any Location
         1. Conforming to Grid
         2. Conforming to Unlocked Playable Area
         3. Conforming to Physical Space Limitations
            1. Interference with Other Assets
   2. Size
      1. Locked
   3. Strength
      1. Stability
      2. Durability
      3. Longevity
   4. Cost
   5. Apparence
      1. Cosmetic
   6. Illumination Properties
      1. Reflectiveness
      2. Transparency
      3. Absorption
   7. Air Flow Rate
      1. Minimum Flow
      2. Maximum Flow
      3. Efficiency
   8. Water Connections
      1. Input
      2. Output
   9. Electrical Connections
      1. Power Usage
         1. Wattage
         2. Input
         3. Output
      2. Wiring Together (Daisy Chain)
      3. Power Supply
      4. Wiring into Electrical System as a Whole
   10. Copy and Pastable
3. Electric System
   1. Source
      1. Grid
         1. Simple Connection to Existing “World” Grid
            1. Cost

Correlated to Time of Day

* + - * 1. Limited Supply
    1. Generator
       1. Placement
          1. Any Direction

Forward / North / +Y

Backward / South / -Y

Left / West / -X

Right / East / +X

Down / Lower / -Z

Up / Higher / +Z

* + - * 1. Orientation

Unlocked

Spinnable

* + - * 1. Any Location

Conforming to Grid

Conforming to Unlocked Playable Area

Conforming to Physical Space Limitations

Interference with Other Assets

* + - 1. Size
         1. Locked
      2. Strength
         1. Stability
         2. Durability
         3. Longevity
      3. Cost
      4. Apparence
         1. Cosmetic
      5. Electrical Properties
         1. Wattage
         2. Efficiency
         3. Maximum Output
         4. Average Output
      6. Electrical Connections
         1. Input
         2. Output
         3. Wiring Together (Daisy Chain)
         4. Wiring into Electrical System as a Whole
      7. Environmental Impact
         1. Heat
         2. Pollution

Air

Water

Soil

* + - 1. Copy and Pastable
    1. Solar Panels
       1. Placement
          1. Any Direction

Forward / North / +Y

Backward / South / -Y

Left / West / -X

Right / East / +X

Down / Lower / -Z

Up / Higher / +Z

* + - * 1. Orientation

Unlocked

Spinnable

* + - * 1. Any Location

Conforming to Grid

Conforming to Unlocked Playable Area

Conforming to Physical Space Limitations

Interference with Other Assets

* + - 1. Size
         1. Locked
      2. Strength
         1. Stability
         2. Durability
         3. Longevity
      3. Cost
      4. Apparence
         1. Cosmetic
      5. Electrical Properties
         1. Wattage
         2. Efficiency
         3. Maximum Output
         4. Average Output
      6. Electrical Connections
         1. Input
         2. Output
         3. Wiring Together (Daisy Chain)
         4. Wiring into Electrical System as a Whole
      7. Inverter & or Battery System
      8. Environmental Impact
         1. Heat
      9. Copy and Pastable
  1. Panel Boxes
     1. Routing
        1. Sources to Grow Facility
        2. Distribution Within Facility
     2. Breakers
        1. Minimum Wattage
        2. Maximum Wattage
     3. Placement
        1. Any Direction
           1. Forward / North / +Y
           2. Backward / South / -Y
           3. Left / West / -X
           4. Right / East / +X
           5. Down / Lower / -Z
           6. Up / Higher / +Z
        2. Orientation
           1. Unlocked

Spinnable

* + - 1. Any Location
         1. Conforming to Grid
         2. Conforming to Unlocked Playable Area
         3. Conforming to Physical Space Limitations

Interference with Other Assets

* + 1. Size
       1. Locked
    2. Strength
       1. Stability
       2. Durability
       3. Longevity
    3. Cost
    4. Apparence
       1. Cosmetic
    5. Electrical Properties
       1. Wattage
       2. Efficiency
       3. Maximum Output
       4. Average Output
    6. Electrical Connections
       1. Input
       2. Output
       3. Wiring Together (Daisy Chain)
       4. Wiring into Electrical System as a Whole
    7. Copy & Pastable
  1. Wiring
     1. Routing
        1. From Panel Boxes to Rooms
        2. Distribution Within Rooms
     2. Connecting
        1. Wiring to Wiring
        2. Wiring to Equipment
     3. Placement
        1. Any Direction
           1. Forward / North / +Y
           2. Backward / South / -Y
           3. Left / West / -X
           4. Right / East / +X
           5. Down / Lower / -Z
           6. Up / Higher / +Z
        2. Orientation
           1. Unlocked

Rotatable

Spinnable

* + - 1. Any Location
         1. Conforming to Grid
         2. Conforming to Unlocked Playable Area
         3. Conforming to Physical Space Limitations

Interference with Other Assets

* + 1. Size
       1. Width
       2. Length
       3. Thickness
       4. Diameter
       5. Electrical Capacity
    2. Strength
       1. Stability
       2. Durability
       3. Longevity
    3. Cost
    4. Apparence
       1. Cosmetic
    5. Electrical Properties
       1. Wattage
       2. Efficiency
       3. Maximum Output
       4. Average Output
    6. Electrical Connections
       1. Input
       2. Output
       3. Wiring Together (Daisy Chain)
       4. Wiring into Electrical System as a Whole
  1. Outlets
     1. Placement
        1. Any Direction
           1. Forward / North / +Y
           2. Backward / South / -Y
           3. Left / West / -X
           4. Right / East / +X
           5. Down / Lower / -Z
           6. Up / Higher / +Z
        2. Orientation
           1. Unlocked

Rotatable

Spinnable

* + - 1. Any Location
         1. Conforming to Grid
         2. Conforming to Unlocked Playable Area
         3. Conforming to Physical Space Limitations

Interference with Other Assets

* + 1. Size
       1. Locked
    2. Strength
       1. Stability
       2. Durability
       3. Longevity
    3. Cost
    4. Apparence
       1. Cosmetic
    5. Electrical Properties
       1. Wattage
       2. Efficiency
       3. Maximum Output
       4. Average Output
    6. Electrical Connections
       1. Input
       2. Output
       3. Wiring Together (Daisy Chain)
       4. Wiring into Electrical System as a Whole

1. Due to the complexity and need for extreme detail & thoroughness I have decided to leave the physics simulation and mechanics to be planned in its own entire document.