IWU Smart Homes Blueprint

15-Unit Constitutional Community Design
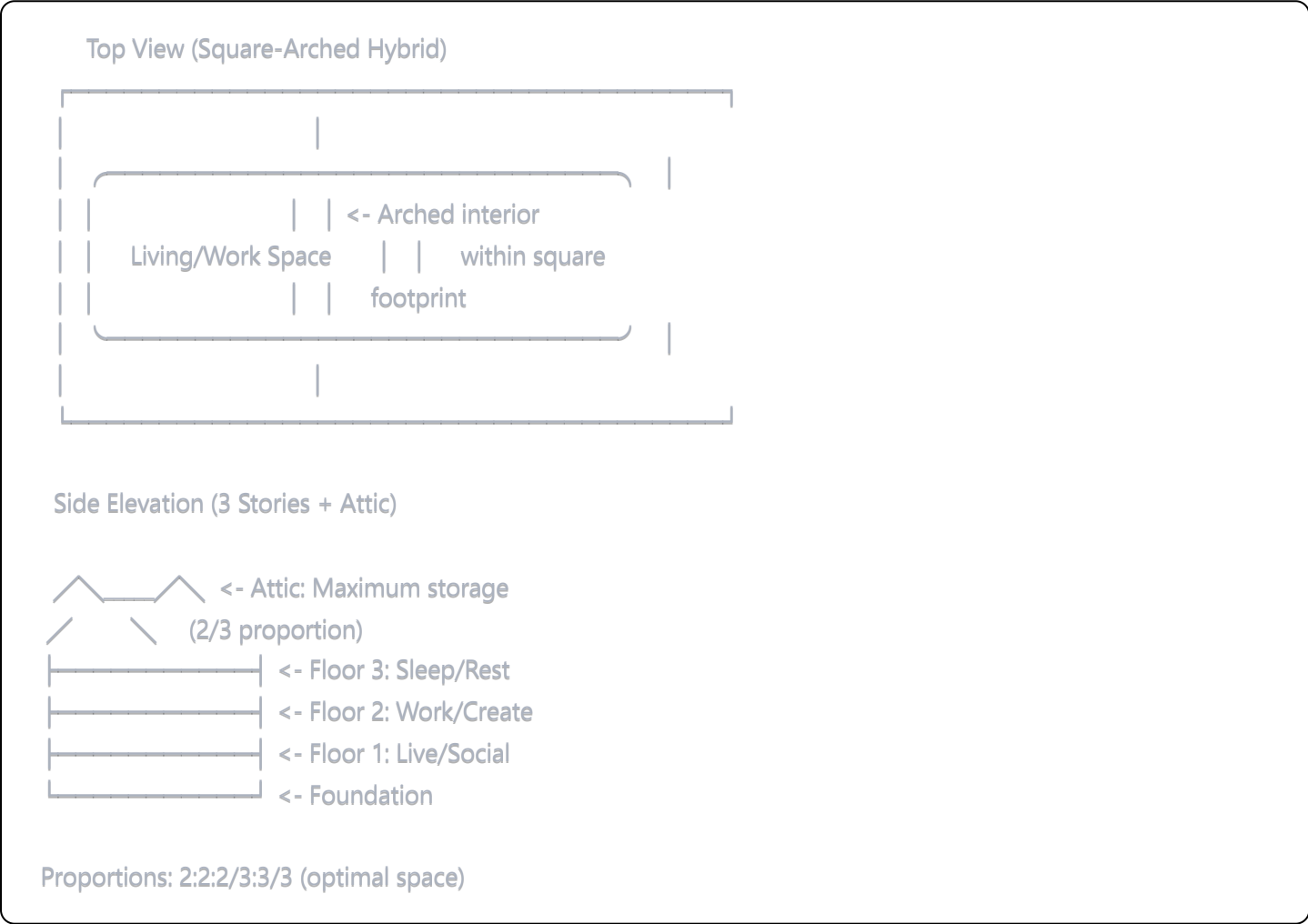
Document: Architectural & Governance Specification

Version: 1.0

Purpose: Define smart home clusters with integrated IWU councils

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1. ARCHITECTURAL SPECIFICATION

Individual Home Design

```
Top View (Square-Arched Hybrid)

 _____
|              |                         |
|              |                         |
|    _____     |
|   |                  |   |  <- Arched interior
|   |  Living/Work Space  |   |   within square
|   |                  |   |    footprint
|   |_____|    |
|              |                         |
|              |                         |
|_____|_____|


Side Elevation (3 Stories + Attic)


     /\    /\    <- Attic: Maximum storage
    /  \  /  \    (2/3 proportion)
   |_____|   <- Floor 3: Sleep/Rest
   |_____|   <- Floor 2: Work/Create
   |_____|   <- Floor 1: Live/Social
   |_____|   <- Foundation

Proportions: 2:2:2/3:3/3 (optimal space)
```
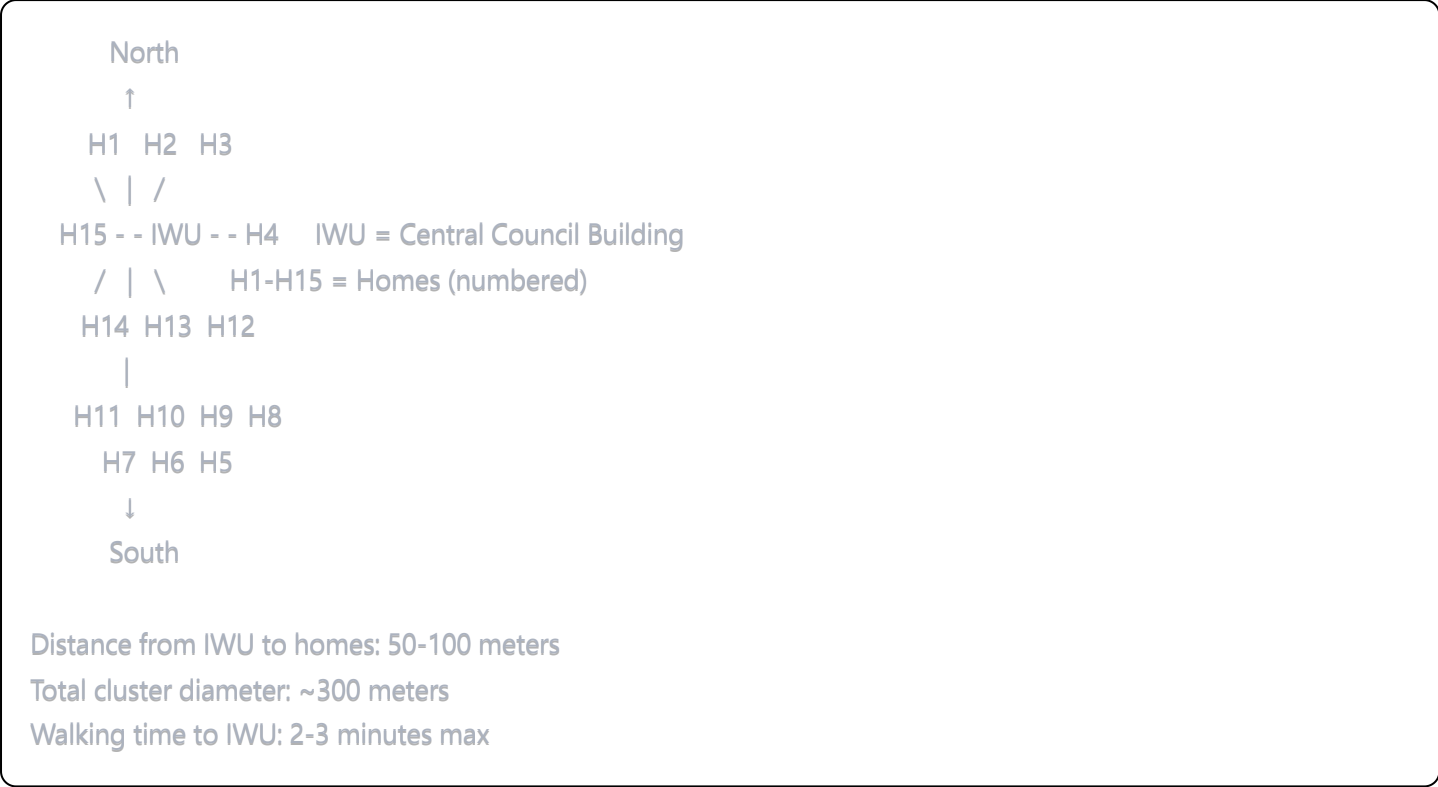
Space Allocation Per Home

- **Floor 1**: Community/Kitchen/Social (live)
- **Floor 2**: Tech workspace/Office (work)
- **Attic**: Storage/Personal archive
- **Total**: ~1,200 sq ft per unit
- **Accessibility**: Lift option for neurodivergent needs

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2. CLUSTER LAYOUT - 15 HOMES + CENTRAL IWU

Radial Design Pattern

```
        North
         ↑
    H1   H2   H3
     \   |   /
   H15 - - IWU - - H4    IWU = Central Council Building
     /   |   \        H1-H15 = Homes (numbered)
    H14  H13  H12
          |
    H11  H10  H9  H8
      H7  H6  H5
          ↓
        South


Distance from IWU to homes: 50-100 meters
Total cluster diameter: ~300 meters
Walking time to IWU: 2-3 minutes max
```

Central IWU Council Building Features

- **Ground Floor**: Community hall, meeting spaces
- **Floor 1**: Council chambers, admin offices
- **Floor 2**: Tech hub, shared workspace
- **Basement**: Infrastructure (servers, utilities)
- **Size**: 2,500 sq ft (larger than homes)

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3. GOVERNANCE STRUCTURE

Constitutional Radius System

```
  ┌─────────────────────────────────┐
  │   17.5 MILE AVERAGE RADIUS    │  │
  │ ┌─────────────────────────┐ │  │
  │ │   15-20 MILE MAX RANGE    │ │  │
  │ │ ┌─────────────────┐ │ │  │
  │ │ │  IWU JURISDICTION  │ │ │  │
  │ │ │  (15 HOME CLUSTER)  │ │ │  │
  │ │ └─────────────────┘ │ │  │
```

Council Operations

- **Local Issues**: Resolved at cluster IWU council

- **Inter-cluster**: Network of IWU councils collaborate

- **Coverage**: Each council serves 15-20 mile radius

- **Response Time**: 24 hours for urgent matters

- **Meetings**: Weekly community gatherings

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4. SMART HOME TECHNOLOGY INTEGRATION

Per-Home Systems

```javascript
```

```javascript
const SmartHomeConfig = {
  // Neurodivergent Support
  sensory: {
    lighting: "adjustable_spectrum",
    sound: "noise_cancellation_zones",
    temperature: "micro_climate_control",
    air: "HEPA_filtration"
  },

  // Live-Work Integration
  workspace: {
    sit_stand_desks: true,
    ergonomic_zones: true,
    collaboration_screens: true
  },

  // Cultural Tech
  interface: {
    nsibidi_display: true,
    voice_control: "multilingual",
    gesture_recognition: true
  },

  // Energy Systems
  sustainability: {
    solar_panels: "per_home",
    battery_storage: "Tesla_powerwall",
    water_recycling: true,
    waste_sorting: "automated"
  }
};
```
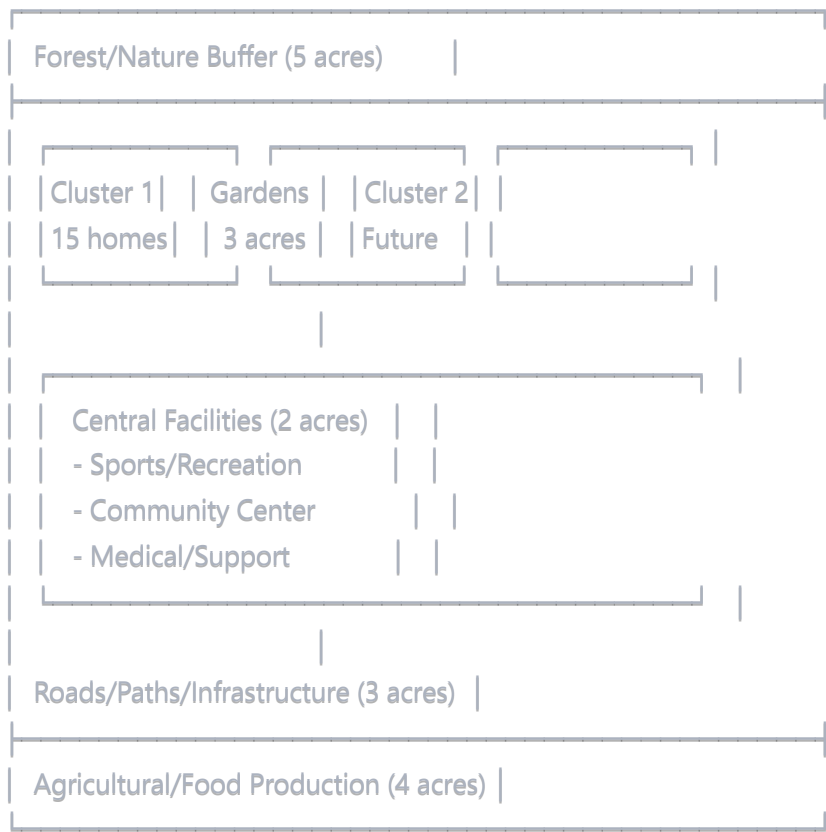
IWU Council Building Tech

- Quantum-ready fiber network
- Blockchain node for governance
- Community data center
- Emergency response systems
- Cultural archive servers

5. COMMUNITY LAYOUT (25 ACRES)

Land Use Distribution

```
Total: 25 acres (101,171 m²)

  ┌──────────────────────────────────────────────┐
  │  Forest/Nature Buffer (5 acres)        │      │
  ├──────────────────────────────────────────────┤
  │                                               │
  │   ┌──────┐   ┌────────┐   ┌────────┐   ┌──────┐ │
  │   │Cluster 1│ │Gardens │   │Cluster 2│        │
  │   │15 homes│  │3 acres │   │Future  │         │
  │   └──────┘   └────────┘   └────────┘          │
  │                                               │
  │                   │                     │     │
  │   ┌──────────────────────────────────┐  │     │
  │   │  Central Facilities (2 acres)  │  │       │
  │   │  - Sports/Recreation           │  │       │
  │   │  - Community Center            │  │       │
  │   │  - Medical/Support             │  │       │
  │   └──────────────────────────────────┘  │     │
  │                   │                           │
  │  Roads/Paths/Infrastructure (3 acres)  │      │
  ├──────────────────────────────────────────────┤
  │  Agricultural/Food Production (4 acres) │     │
  └──────────────────────────────────────────────┘

Building footprint: 15 homes × 400m² = 6,000m²
IWU Council: 500m²
Total built: ~6,500m² (1.6 acres)
Green space: 23.4 acres (93.5%)
```

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6. PHASED DEVELOPMENT PLAN

Phase 1: Foundation (Months 1-6)

- Site preparation
- Infrastructure installation
- First 5 homes + IWU council building
- Core utilities (power, water, network)

Phase 2: Expansion (Months 6-12)

- Homes 6-10 construction
- Community gardens establishment
- Tech hub activation
- First residents move in

Phase 3: Completion (Months 12-18)

- Final 5 homes (11-15)
- Full facilities operational
- Agricultural systems active
- Community fully occupied

Phase 4: Optimization (Year 2+)

- Second cluster planning
- Inter-cluster networking
- Revenue generation scaling
- Model replication prep

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7. OPERATIONAL METRICS

Per-Cluster Economics

```
Initial Investment: £4.5M
- Homes (15 × £200K): £3M
- IWU Building: £500K
- Infrastructure: £750K
- Landscaping: £250K

Annual Operation: £450K
- Maintenance: £150K
- Utilities: £100K
- Council staff (3): £120K
- Programs/Support: £80K

Annual Revenue: £750K+
- Business rates: £300K
- Tech services: £350K
- Agricultural: £100K

Net Annual Profit: £300K+
ROI Period: 15 years
```

Social Metrics

- **Employment Rate Target**: 85% of residents
- **Community Participation**: 90% weekly

- **Support Access**: 100% within 24 hours

- **Energy Self-Sufficiency**: 70%

- **Food Production**: 30% of needs

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8. GOVERNANCE PROTOCOLS

IWU Council Structure (Per 15-Home Cluster)

```
┌─────────────────────────┐
│  Council Assembly       │
│  (All 15 households)     │
└─────────────────────────┘
         │
      ┌──▼──────────────┐
      │ Executive Team  │
      │ (3 elected)     │
      └─────────────────┘
         │
    ┌────┼──────────────┐
    │    │              │
    ▼    ▼              ▼
  Tech  Community     Support
  Lead  Coordinator   Officer
```

Decision Making

- **Daily Operations**: Executive team

- **Policy Changes**: 60% household vote

- **Major Investments**: 75% approval

- **Emergency Response**: Any executive can act

Inter-Cluster Coordination

- Monthly regional IWU meetings

- Shared resources/expertise

- Joint procurement power

- Unified tech platform

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9. ACCESSIBILITY & INCLUSION

Neurodivergent Design Features

- **Quiet zones** in each home

- **Sensory gardens** between clusters

- **Predictable routines** supported by tech

- **Visual schedules** on Nsibidi displays

- **Retreat spaces** for overwhelm

- **Clear wayfinding** throughout

Universal Design

- **No-step entries** where possible

- **Wide doorways** (36" minimum)

- **Adjustable fixtures**

- **Multiple communication modes**

- **Emergency alerts** (visual + audio)

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10. SUCCESS CRITERIA

Year 1 Targets

✓ 15 homes completed and occupied

✓ IWU council fully operational

✓ 50% employment achievement

✓ Basic services running

✓ Community protocols established

Year 3 Vision

✓ 85% employment rate

✓ Net positive revenue

✓ Second cluster in development

✓ National recognition as model

✓ Full food/energy autonomy progress

Year 5 Goals

✓ 3 clusters operational (45 homes)

✓ Regional IWU network established

✓ £1M+ annual surplus

✓ Replication in 5 other councils

✓ International best practice recognition

TECHNICAL APPENDIX

Construction Specifications

- **Foundation**: Reinforced concrete slab

- **Frame**: Sustainable timber/steel hybrid

- **Insulation**: Passivhaus standard

- **Windows**: Triple glazed, UV filtering

- **Roofing**: Solar-integrated tiles

- **Smart Systems**: CAT6 throughout

Utility Infrastructure

- **Power**: 3-phase + solar + battery

- **Water**: Mains + rainwater harvest

- **Sewage**: Eco-treatment + council connection

- **Internet**: Fiber to each home (1Gbps)

- **Heating**: Ground source heat pumps

"Every 15 homes needs IWU = Law. When problems arise, go to IWU council local."

Next Step: Submit with Section 202 demand as "Appendix A: Technical Specification"