**Game Design Document (GDD)**

**Project Title:** Stonewood

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**1. Introduction**

Stonewood is a peaceful RTS city-builder where players guide AI villagers to transform untamed wilderness into thriving settlements through strategic resource management and thoughtful building placement. Unlike combat-focused RTS games, Stonewood offers a zen-like experience focused purely on growth, creativity, and optimization.

**Executive Summary:** Players manage resources and AI workers to harvest materials and expand a village in a "Settlers-style" gameplay experience. The game emphasizes relaxing, meditative village building with intelligent worker AI that operates autonomously while allowing strategic player intervention.

**Key Features:**

* **Peaceful Focus:** No combat or conflict - pure city-building experience
* **Intelligent Worker AI:** Workers automatically seek resources but can be manually directed
* **Visual Feedback Systems:** Real-time progress bars, resource depletion, and worker activities
* **Intuitive Building System:** Simple B-key menu with visual placement and resource requirements

**2. Game Concept**

* **Platform:** PC (Windows)
* **Genre:** RTS / City Builder / Simulation
* **Perspective:** Top-down camera with mouse and WASD movement
* **Core Loop:** Build → Workers Spawn → Resources Gathered → Expand Village
* **Win/Loss Conditions:** Sandbox-style creative building (no formal win conditions)

**Target Audience:**

* **Primary:** Peaceful builders (ages 25-40) seeking relaxing creative gameplay
* **Secondary:** Strategy game enthusiasts who enjoy resource management without time pressure

**Unique Selling Points:**

* Automatic worker AI with manual override capabilities
* Visual resource depletion and regeneration system
* Construction progress bars providing satisfying build feedback
* Settlers-inspired gameplay with modern UX improvements

**3. Gameplay and Controls**

**Core Controls:**

* **Mouse:** Camera control and selection
* **WASD:** Camera movement across the game world
* **Left Click:** Select individual workers or buildings
* **Right Click:** Assign specific tasks to selected workers
* **B Key:** Toggle building menu (primary construction interface)

**Building Mechanics:**

* **Menu System:** B key opens right-side building panel with available structures
* **Resource Requirements:** Buildings display required materials (e.g., 15 wood for Mason)
* **Visual Preview:** Selected buildings show placement preview before confirmation
* **Construction Progress:** Buildings display progress bars during construction phase
* **Free Placement:** Buildings can be placed anywhere on suitable ground

**Worker AI System:**

* **Automatic Spawning:** Completed buildings automatically generate appropriate workers
* **Resource Seeking:** Workers autonomously find and harvest nearest available resources
* **Carrying System:** Workers visually transport resources back to their originating building
* **Manual Override:** Players can select individual workers and direct them to specific resources
* **Resource Depletion:** Workers automatically move to next available source when current depletes

**Resource Management:**

* **Wood Collection:** Lumber House workers chop trees and return with logs
* **Stone Collection:** Mason workers gather rocks and transport stone
* **Visual Feedback:** Resources visually diminish as workers harvest them
* **Counter System:** Left-side UI displays current resource totals
* **Building Requirements:** Structures require specific resource amounts to construct

**4. Game World, Levels, and Environments**

**Terrain Features:**

* **Clearings:** Open spaces suitable for building placement
* **Forests:** Dense tree areas providing renewable wood resources
* **Rocky Areas:** Stone deposits for construction materials
* **Natural Boundaries:** Terrain features that guide village expansion

**Building Types:**

* **Lumber House:** Spawns lumberjack workers, who gather wood, requires 5 wood to construct
* **Mason Building:** Generates stone-gathering workers, requires 15 wood to construct
* **Wells:** Water source buildings, generates water to keep up the village.

**Resource Types:**

* **Wood:** Primary building material harvested from trees by lumberjacks
* **Stone:** Construction resource gathered from rocks by mason workers
* **Water:** Resource to keep the village alive.

1. **Story and Narrative**

**Setting and Context:**

* Players are establishing a new village in an untamed wilderness
* Focus on peaceful expansion and harmony with natural resources
* No character dialogue or complex narrative elements
* Environmental storytelling through village growth and development

**Atmospheric Goals:**

* Create sense of peaceful accomplishment through village building
* Emphasize cooperation between player strategy and worker autonomy
* Visual progression from wilderness to thriving settlement
* Meditative gameplay experience promoting creativity over competition

1. **Art and Assets**

**Visual Style:**

* **Art Direction:** Low-poly, colorful, cartoonish aesthetic
* **Color Palette:** Warm, inviting colors promoting relaxation
* **Atmospheric Quality:** Storybook-like charm with clear visual hierarchy

**Required Asset Categories:**

**Character Assets:**

* Worker character models with basic animations (idle, walking, working)
* Carrying animations for resource transportation

**Assets:**

* Tree models
* Rock formations and stone deposits
* Terrain textures for clearings and natural areas

**Building Assets:**

* Lumber House model
* Mason building
* Progress bar visual elements

**Building placement preview materials UI Assets:**

* Resource counter icons (wood, stone, water)
* Building menu panel with structure icons
* Construction progress indicators
* Worker selection and task assignment visual feedback

**7. User Interface (UI) and User Experience (UX)**

**Interface Layout:**

* **Left-Side HUD:** Resource counters with clear iconography
* **Right-Side Panel:** Building menu accessed via B key
* **Central Viewport:** Main game world with minimal UI overlay
* **Context Menus:** Building-specific information and controls

**User Experience Goals:**

* **Intuitive Discovery:** B key building system easily discoverable
* **Clear Feedback:** Visual progress bars and resource changes
* **Minimal Complexity:** Simple controls with powerful underlying systems
* **Satisfying Interactions:** Smooth building placement and worker management

**Specific UX Features:**

* **Building Requirements Display:** Show resource costs before placement
* **Construction Progress:** Visual bars indicating building completion status
* **Worker Activity Indicators:** Clear visual feedback for worker actions
* **Resource Depletion Visualization:** Trees and rocks show harvesting impact

**Menu Systems:**

* **Main Menu:** Game start, options, and exit functionality
* **Pause Menu:** In-game options and save system access
* **Building Menu:** Primary construction interface with category organization
* **Options Menu:** Audio, visual, and control customization

**8. Audio Design**

**Musical Design:**

* **Calm Medieval Loops:** Peaceful instrumental tracks promoting relaxation
* **Dynamic Audio:** Music adapts to village activity and growth
* **Seamless Transitions:** Smooth audio flow supporting meditative experience

**Sound Effects:**

* **Spatialized Audio:** 3D positioned sounds enhancing world immersion
* **Work Sounds:** Wood chopping, stone striking, resource collection
* **Construction Audio:** Building placement and progress feedback
* **Ambient Sounds:** Nature atmosphere (birds, wind, distant water)
* **UI Audio:** Satisfying click sounds and menu navigation feedback

**Audio Implementation:**

* **Resource Gathering:** Distinct sounds for different harvesting activities
* **Worker Movement:** Footsteps and movement audio for worker characters
* **Environmental Audio:** Atmospheric sounds supporting peaceful gameplay
* **Feedback Systems:** Audio cues for successful actions and building completion

1. **Monetization**

**Business Model:** No monetization planned

**Distribution Strategy:** Student portfolio showcase and learning demonstration

1. **Multiplayer Features**

**Multiplayer Support:** Single-player experience only

**Design Philosophy:** Focus on personal creative expression and meditative gameplay rather than competitive or collaborative multiplayer systems

1. **Testing and Quality Assurance**

**Core Testing Priorities:**

* **Building Placement Logic:** Ensure collision detection and placement validation
* **Worker AI Behavior:** Test autonomous resource seeking and manual override systems
* **Resource Flow Accuracy:** Verify correct resource collection and storage
* **UI Responsiveness:** Confirm building menu and selection systems function smoothly

**Performance Validation:**

* **Construction Progress:** Ensure progress bars accurately reflect building status
* **Resource Depletion:** Test visual feedback systems for harvesting
* **Worker Pathfinding:** Validate collision-aware movement and task completion
* **System Scalability:** Test performance with multiple workers and buildings

**User Experience Testing:**

* **Control Intuitiveness:** Verify B key building system discoverability
* **Visual Clarity:** Confirm resource requirements and building feedback are clear
* **Gameplay Flow:** Test satisfying progression from building to resource collection

**12. Marketing and Promotion**

**Target Audience Definition:**

* **Primary Audience:** City-building game enthusiasts seeking relaxing experiences
* **Secondary Audience:** Strategy game fans interested in peaceful resource management
* **Demographic Focus:** Players aged 25-45 who value creativity over competition

**Distribution Strategy:**

**Portfolio Showcase:** Primary focus on demonstrating game development skills

**13. Budget and Resources**

**Development Team:**

* **Developer:** Solo development
* **Project Scope:** Educational and portfolio-focused development

**Technical Resources:**

* **Engine:** Unreal Engine 5 for advanced rendering and development tools
* **3D Modeling:** Blender for custom asset creation
* **Audio Tools:** AI-generated music and sound effect libraries
* **Version Control:** Git for project and asset management

**Asset Strategy:**

* **Mixed Approach:** Combination of custom-made assets and marketplace resources
* **Quality Focus:** Prioritize visual consistency over asset complexity
* **Scalable Pipeline:** Efficient asset creation process for future expansion

**14. Appendices**

**Future possible features roadmap:**

* Basic day-night cycle
* Speed controls (1x / 2x / pause)
* Building upgrades and tier systems
* Extended Resource Chains

**Design Philosophy:**

* **Player Agency:** Balance between automatic systems and manual control
* **Visual Communication:** Prioritize clear feedback over complex mechanics
* **Peaceful Gameplay:** Maintain stress-free, creative experience throughout development
* **Educational Value:** Document development process for learning demonstration