**Building Tech Brief**

Tom Black - September 22, 2023

| **#** | **Description** | **Author** | **Date** |
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| 0.1 | Initial revision | TB | 22-Sep-2 |

# **Goals**

Create a simple yet detailed building management system allowing for seamless connection between other systems including resource management and combat systems. Building is vital to this game as it is the foundation of most of the features.

Key goals include:

1. Create a smooth snapping grid system with a clear display of control.
2. Allow creation and destruction of buildings.
3. Multiple types of buildings include core, resource, combat, and defense buildings.

| **Core** | The Core Building will be the first building you create and will be where you create more workers. It will also be the building that must be destroyed to win the game. |
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| **Resource** | Resource Buildings will be buildings which you can place on resource deposits to harvest those resources, the resources will eventually run out. |
| **Combat** | Combat Buildings will be used to create combat units, there will be two types of Combat Buildings, the first will create low-level units and the second will create higher-level units. |
| **Defense** | Defense Buildings will attack nearby enemies and defend your base against attacks. They can also be used to slow down the enemies from reaching your core and can block the enemy units. |

# **Dependencies**

* **Resource Management:** using resources to build and returning them for destruction, also the resource buildings need to work with it.
* **Combat/Units:** Creating combat units from combat buildings and creating worker units from the core building, as well as destroying buildings in combat.
* **Audio:** sound effects for placing, destroying, working, attacking, grid snapping, etc…
* **Animations & Particle Effects:** Animations for buildings being built and destroyed, as well as particle effects to go along with it.
* **NPC AI:** NPC enemies need to build their bases.

# **Requirements**

1. Create Grid System
2. Create Parent & Child scripts for building classes
3. Add functions for building / destroying
4. Code all the necessary variables and features for the base class
5. Code the Core Building child script
6. Code the Resource Building child script
7. Code the Defense Building child script
8. Code the Combat Building child script

**Technical Approach**

I will use object-oriented programming to allow for clean code and the ability to have universal functions for all buildings, I will also use interfaces for universal things such as IDestroyable to allow for less repetitive code. I will also make useful functions that are easy to understand with comments for the other team members to use for their features.