

Queen Aerisilium

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Description

This document holds the design (GDD) for a game called *Queen Aerisilium* that was created during writing the Bachelor's thesis: Real-Time Strategy on Platform Game Design - by Silver Kirotar. The progress of developing the game can currently be seen [here](#). For a similar game to this, see the homepages of [Driftland: The Magic Revival](#), [Clonk](#), or [Banished](#).

Inspiration

The design of the mechanics and game elements for this game got inspiration mainly from two series of games: *Age of Empires* and *Clonk*.

Language options

These are the language options that should be in the game prior to publishing (not for the thesis). The idea is that the game would be understandable for the youth in Estonia, and otherwise be available in English for most of the world.

- Estonian
- English
- Russian

Requirements

The list of non-functional requirements for the game.

- 1) The game should support at least 4 players on a computer that satisfies the minimum requirements to run the game.
- 2) The game should support at least 50 units per player on a computer that satisfies the minimum requirements to run the game.

Game Design

Genre - Combination of Platform & RTS - real-time strategy on platforms (RTSoP).

Functional space of the game.

Discrete, 2D, and a huge rectangular map where most of the platforms are not connected, and should be connected in-game to become accessible for players to travel on these platforms.

Core gameplay mechanics.

- 1) Player starts with a small group of workers, main house, and some resources.
- 2) Player needs to gather resources to build houses and raise armies.
- 3) There is at least one opponent that might attack the player anytime.
- 4) Expanding on to the other platforms and defeat enemies on them if needed.
- 5) Defending the base or attacking the enemy.
- 6) Multiplayer.

Gameplay limitations.

- 1) Limited population.
- 2) Semi-limited resources – farming.
- 3) Greatly limited building space.
- 4) The ability to move on different platforms is greatly determined by the level's layout.

Possible player actions in the game.

- 1) Assign workers to build houses, mines, etc.
- 2) Assign workers to work (i.e. mining, woodcutting, farming)
- 3) Move characters around the world.
- 4) Assign characters to attack.
- 5) Assign characters to defend (i.e. moving archer into a tower).
- 6) Connect platforms by ordering workers to build a bridge between them.
- 7) Create (buy) units.
- 8) Assign workers to repair buildings.
- 9) Upgrade buildings, armour and tools.
- 10) Unlock new buildings and units.

Interactions between game objects.

- 1) A player attacks its enemy units.
- 2) A player attacks its enemy buildings.
- 3) A worker repairs its team's buildings.
- 4) A worker builds its team a new building.
- 5) A unit defends itself from the enemy.
- 6) A defensive building defends itself from the enemy.

Nondeterministic elements

- 1) Map generation.
- 2) Starting position.
- 3) Resource, treasure, and neutral camp spawns around the map.
- 4) Game AI.

Platforms (islands)

Platforms are the main game elements, where the gameplay takes place. They are basically individual floating islands. To travel between these islands, one must build a bridge between them, or use a scout.

The era of the game - the gameplay of the game takes place in the Middle Ages. The units and civilisations are related to the Medieval Period.

Civilisations - TBA¹

Fog of War² conceals the areas of map that the player has not yet discovered. It can be reduced by discovering the world by units or making buildings with a great line of sight (see Attributes). Already discovered areas will stay in the “fog” if there are no units or buildings nearby. This is also determined by distance of the line of sight. Although, the discovered areas in the fog will be outlined according to the last-known information.

¹ TBA - to be announced.

² https://en.wikipedia.org/wiki/Fog_of_war

Winning scenarios

Standard

You can choose between two winning scenarios, default is Conquest.

- 1) Conquest - Team win, all remaining enemies have surrendered.
- 2) Last Man Standing - All enemies have surrendered, winning team will turn on each other, last player (former team member) who is alive wins.

Custom

Can be used to create different game modes like: campaign³, adventure⁴ and deathmatch⁵.

- 1) Expansion - Conquering certain percentage of the land. The percentage could reduce depending on the number of players at the start of the game.
- 2) Custom objectives - Be first to fulfil all custom objectives.
- 3) Time Limit - Player with the best economic stance or score wins after time limit.
- 4) Score - The team or a player should achieve required score to win.
- 5) Cyclic - After every cycle that has passed, each player gets some amount of points depending on their economic stance or score, after final cycle, all points are added together, the player with highest amount of points win.

Combinations

All* winning scenarios can be combined with each other, with some restrictions:

- 1) Conquest and Last Man Standing cannot be combined.
- 2) Time Limit and Cyclic cannot be combined, Cyclic already has a time limit.

³ [https://en.wikipedia.org/wiki/Campaign_\(role-playing_games\)](https://en.wikipedia.org/wiki/Campaign_(role-playing_games))

⁴ [https://en.wikipedia.org/wiki/Adventure_\(role-playing_games\)](https://en.wikipedia.org/wiki/Adventure_(role-playing_games))

⁵ <https://en.wikipedia.org/wiki/Deathmatch>

Resources

All resources are limited and can be depleted. The starting amount of a specific resource that can be harvested from a resource's object is not currently defined, adjusting the exact amounts will be done by testing the game. Food is currently the only renewable resource, but needs wood to do so.

Aerium

Aerium is a highly advanced resource that makes the islands float. Small amounts of aerium can be mined from every island. Aerium is collected for levitational abilities to make travelling between islands easier. The exact opportunities for using aerium are currently unclear. It is mainly known to the common folk as being the root for the queen's name.

Food

Food is a basic resource which is mainly used to recruit units. It is also needed for some upgrades. Food can be harvested from renewable fields and random fields appearing throughout the game.

Wood

Wood is a basic resource which is mainly used for building. It is also needed for some units and upgrades. Wood can be harvested from trees (forests).

Stone

Stone is a basic resource which is mainly used for upgrading tools and fortifying buildings. It is also used for ammunition for the catapults. Stone can be mined from stone hills.

Iron

Iron is an advanced resource which is mainly used for creating advanced tools via upgrading or fortifying buildings. Iron ore can be harvested from iron deposits. Refining iron ore is automatic and so does not need any separate processing by the workers.

Population

Current population is a number on a player's population meter that measures the number of units the player currently has.

Population meter shows the fraction of current population out of current population limit.

Population limits

The main purposes of population limit:

- 1) Reduces performance issues.
- 2) Constrains players to think tactically (which units to create or even destroy).

Current population limit is the maximum number of units one player is currently limited to, this number is calculated by the corresponding houses and upgrades (see chapter Attributes about housing). Current population limit cannot exceed the overall population limit.

Overall population limit is the maximum number of units any player is finally limited to, the amount can be changed by the host of the server before starting the game.

Attributes

- 1) Attack (Att) - The value to define the offensive abilities of a building or unit.
- 2) Construction Time (CT) - Time it takes to construct a building or train a unit.
- 3) Cooldown (CD) - Time that units need to wait between hits.
- 4) Defence (Def) - The value to define the defensive abilities of a building or unit.
- 5) Garrison (Gar) - The amount of units that can fit inside the building.
- 6) Health (HP) - The value to define the durability of a building or unit.
- 7) Housing (Hs) - The number of housing needed for a unit or added by a building.
- 8) Line of Sight (LOS) - The distance that is visible by a building or unit.
- 9) Price (Cost) - Resources that are needed for creating a building or unit.
- 10) Range (Ran) - The attack range of a building or unit.
- 11) Research Time (RT) - Time it takes to research an upgrade.
- 12) Speed (S) - Moving speed of a unit.

Units

Construction time, speed, and cooldown values are not currently defined.

Archer

Archers are strong infantry warriors. Their main weapon is a bow. They can attack enemies from afar with a bow or at their elbow with a knife. Archers can shoot the arrows rapidly.

Attributes: (Att - 5, Def - 5, HP - 25, Hs - 1, LOS - 7, Ran - 6)

Catapult

Catapults (mangonel⁶) are siege weapons. They shoot stone projectiles to crush enemy units and buildings. Catapults are very effective at demolishing buildings. Their attacking style is AoE⁷.

Attributes: (Att - 12, Def - 5, HP - 60, Hs - 2, LOS - 7, Ran - 5)

Scout

Scouts are weak infantry units that are designed to discover new islands. Their main weapon is a sword.

Attributes: (Att - 2, Def - 2, HP - 10, Hs - 1, LOS - 8, Ran - 0)

Swordsman

Swordsmen are skilled infantry warriors. Their main weapon is a sword. Swordsmen have the greatest defence of all units and attack from all the infantry.

Attributes: (Att - 7, Def - 8, HP - 40, Hs - 1, LOS - 5, Ran - 0)

Worker

Workers (peasants⁸) are infantry units. They create and repair buildings or gather resources.

Attributes: (Att - 4, Def - 3, HP - 20, Hs - 1, LOS - 5, Ran - 0)

⁶ <https://en.wikipedia.org/wiki/Mangonel>

⁷ https://en.wikipedia.org/wiki/Glossary_of_video_game_terms#area_of_effect

⁸ <https://en.wikipedia.org/wiki/Peasant>

Buildings

Pricing, housing, and construction time values are not currently defined.

Town Hall

Town hall is the most important house, and thus every player should ensure its protection. If the units are garrisoned in the town hall, the building will shoot arrows at enemy units. Town hall is also meant to protect player's units at the start of the game.

- 1) Attributes: (Att - 5, Def - 8, Gar - 10, HP - 1000, LOS - 7, Ran - 4)
- 2) Starting building: Town Hall.
- 3) Spawns units: Worker.
- 4) Upgrades (age): Iron Age, *TBA*.
- 5) Upgrades (building): Castle.
- 6) Upgrades (unit): Iron Axe, Iron Pickaxe.

Watchtower

Archers can climb the watchtower to shoot arrows at enemy units from a more secure spot. Watchtowers have the greatest line of sight.

- 1) Attributes: (Att - 0, Def - 10, Gar - 5, HP - 900, LOS - 8 (+2 with infantry), Ran - 0)
- 2) Starting building: Wooden Watchtower.
- 3) Upgrades (building): Portcullis⁹ (gate), Stone Watchtower, Fortified Watchtower.
- 4) Upgrades (unit): Hunting, Lenses.

Blacksmith

Blacksmith provides upgrades to the infantry units.

- 1) Attributes: (Att - 0, Def - 3, Gar - 0, HP - 500, LOS - 3, Ran - 0)
- 2) Upgrades (unit): Leather Armour, Chainmail, Gambeson¹⁰, Iron Sword, Iron Arrow.

⁹ <https://en.wikipedia.org/wiki/Portcullis>

¹⁰ <https://en.wikipedia.org/wiki/Gambeson>

Field (farm)

Farm provides food when it is operated by the workers. Needs to be reseeded, when the resource is depleted.

- 1) Attributes: (Att - 0, Def - 0, Gar - 0, HP - 200, LOS - 2, Ran - 0)
- 2) Upgrades (building): Fertilisation, Iron Farming Tools.
- 3) Toggle (button): Auto-Reseed.

Archery Range

Archery range is a training ground for the archers.

- 1) Attributes: (Att - 0, Def - 5, Gar - 5, HP - 600, LOS - 5, Ran - 0)
- 2) Spawns units: Archer.
- 3) Upgrades (unit): Longbow

Barracks

Barracks is used for training and accommodating the infantry soldiers.

- 1) Attributes: (Att - 0, Def - 8, Gar - 10, HP - 600, LOS - 5, Ran - 0)
- 2) Spawns units: Scout, Swordsman.
- 3) Upgrades (unit): Arson.

Workshop

Workshop is used for creating siege weapons. Available in the Iron Age (see Upgrades).

- 1) Attributes: (Att - 0, Def - 10, Gar - 0, HP - 500, LOS - 3, Ran - 0)
- 2) Spawns units: Catapult.

Upgrades (technologies)

Pricing, research time, and the influenced attribute values are not currently defined.

Upgrades:

- 1) Arson - Warriors and scouts deal more damage to the buildings.
- 2) Castle - (req¹¹: IA) Increases the health, attack and defence of the town hall.
- 3) Chainmail - (req: Leather Armour, IA) Increases the defence of military infantry units.
- 4) Fertilisation - (req: IA) Increases the yield of farming products in the field.
- 5) Fortified Watchtower - (req: Stone Watchtower, IA) Increases the health and the defence.
- 6) Gambeson - (req: Leather Arm., IA, Chainmail) Increases the defence of the swordsmen.
- 7) Hunting - Increases the line of sight of the infantry units.
- 8) Iron Age (**IA**) - All buildings gain additional health. New upgrades are available.
- 9) Iron Arrow - (req: IA) Increases the damage of the archers.
- 10) Iron Axe - (req: IA) Increases the woodcutting speed.
- 11) Iron Farming Tools - (req: IA) Increases the farming speed on a field.
- 12) Iron Pickaxe - (req: IA) Increases the mining speed.
- 13) Iron Sword - (req: IA) Increases the damage from a sword for all infantry units.
- 14) Leather Armour - Increases the defence of the military infantry units.
- 15) Lenses - (req: Hunting, IA) - Increases the line of sight of the infantry units.
- 16) Longbow - Increases archers' attack range.
- 17) Portcullis (gate) - Blocks enemy units from going through the watchtower.
- 18) Stone Watchtower - Increases the health and the defence.

Other:

- 1) Auto-Reseed: Reseeding the field is automatic, but costs more than manually.

¹¹ req - Required upgrades which need to be completed before the player is able to buy this upgrade.

In-game controls

Players are mainly using their mouse to move around and click on objects. Players should be able to rebind most of their keys. Below are the ideas for mapping the keys.

Mouse controls

Left click – select units and buildings (box and regular selection).

Middle click (mouse wheel clicks) – player's preferred value for default zoom.

Mouse wheel – zoom-in and zoom-out.

Right click – move, Attack or Collect here.

Keyboard controls

Arrow keys – move screen accordingly to the keys (up, down, left, right)

Enter – start chatting with people, taunt, or enter cheat codes.

. (dot) – select an idle worker using a key shortcut.

, (comma) – select an idle warrior using a key shortcut.

M – map overlay.

C – detailed information about selected character or building.

Del – demolish selected building or kill selected unit.

L – select unit who recently started fighting/defending itself.

Key Combinations

Double Left click – select all nearby units (player's own units only) of same type.

Double L – select units who recently started fighting/defending themselves.

Shift + Left click – select multiple units using shift selection.

Shift + . (dot) – select all idle workers using a key combination.

Shift + , (comma) – select all idle warriors using a key combination.