REINVENTING RTS FOR VR

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Lead Designer – Hidden Path Entertainment

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WHO'S THIS GUY?

- Made some stuff
- 25 years
- Yadda yadda

HIDDEN PATH® ENTERTAINMENT

BRASS TACTICS

WHO'S THIS GUY?

I AM OLD

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BRASS TACTICS

BRASS TACTICS

THE PITCH

KIT HARINGTON

THE PITCH

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PILLARS

- Familiar RTS Gameplay
- Innovation in Interaction
- A Tangible Play Space

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PROTOTYPE PLAN

- Limited team
- Unity Engine for Prototype
  - Unreal Engine for Production (!)
- Demonstrate “Real-Time Strategy in VR”
- Embrace Oculus Touch
- Generous time to explore
  - Thanks Oculus!

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BRASS TACTICS

BRASS TACTICS

THE PLAY SPACE

PLAY SPACE OBJECTIVES

- Reasonable map size
  - For ~20–30 minute battle
- Physical feel
- Minimal discomfort
- Blue sky!
  - (See https://youtu.be/jWQBvDByjHo for videos)

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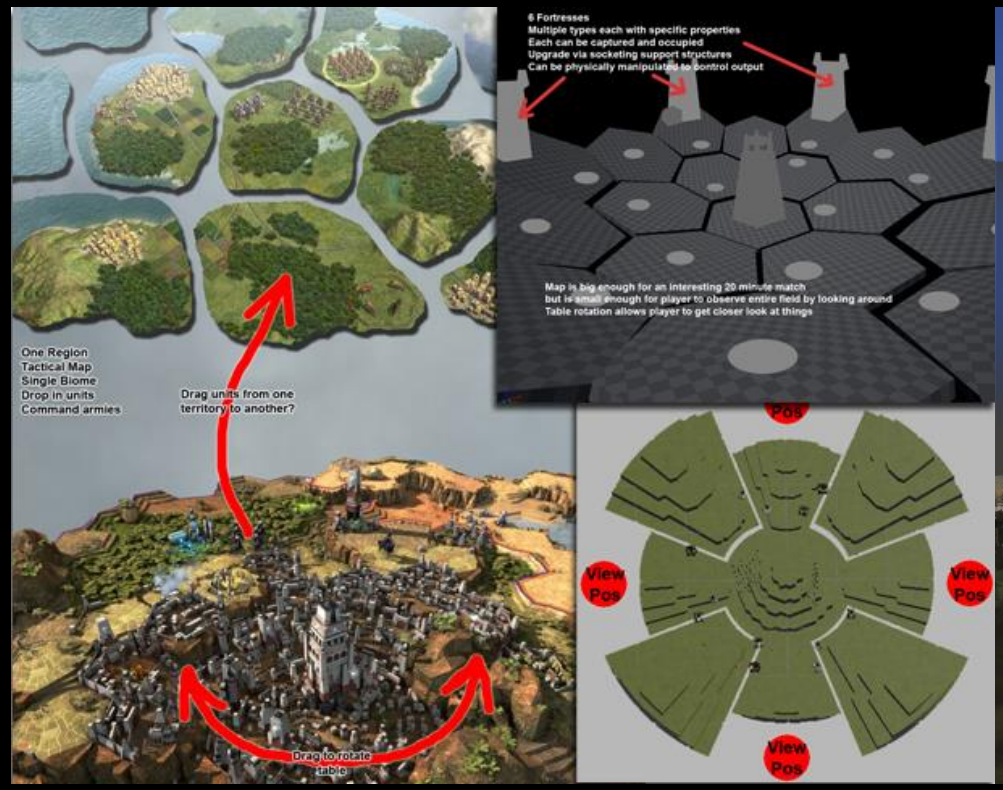
BRASS TACTICS

BLUE SKY MOCKUPS



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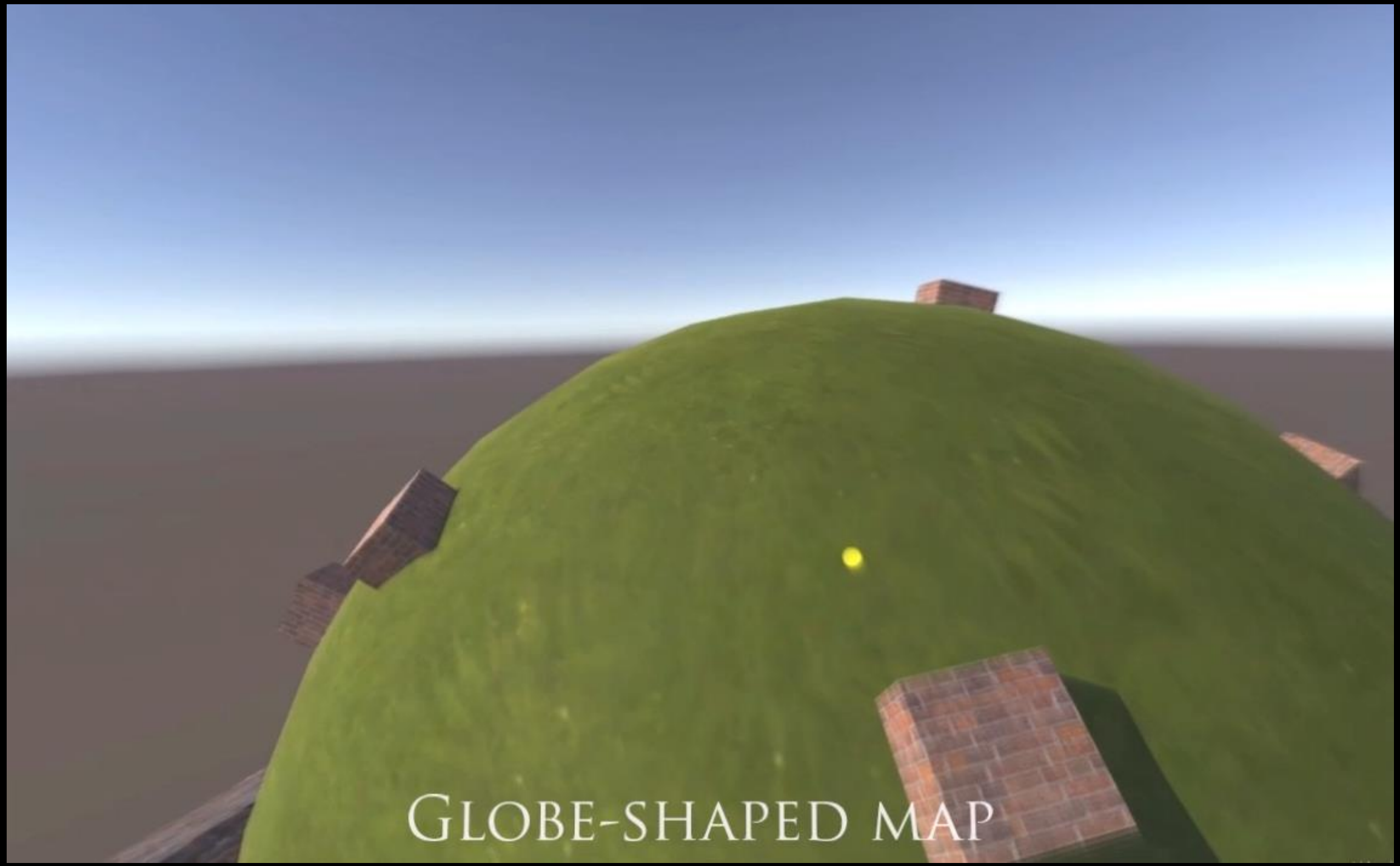
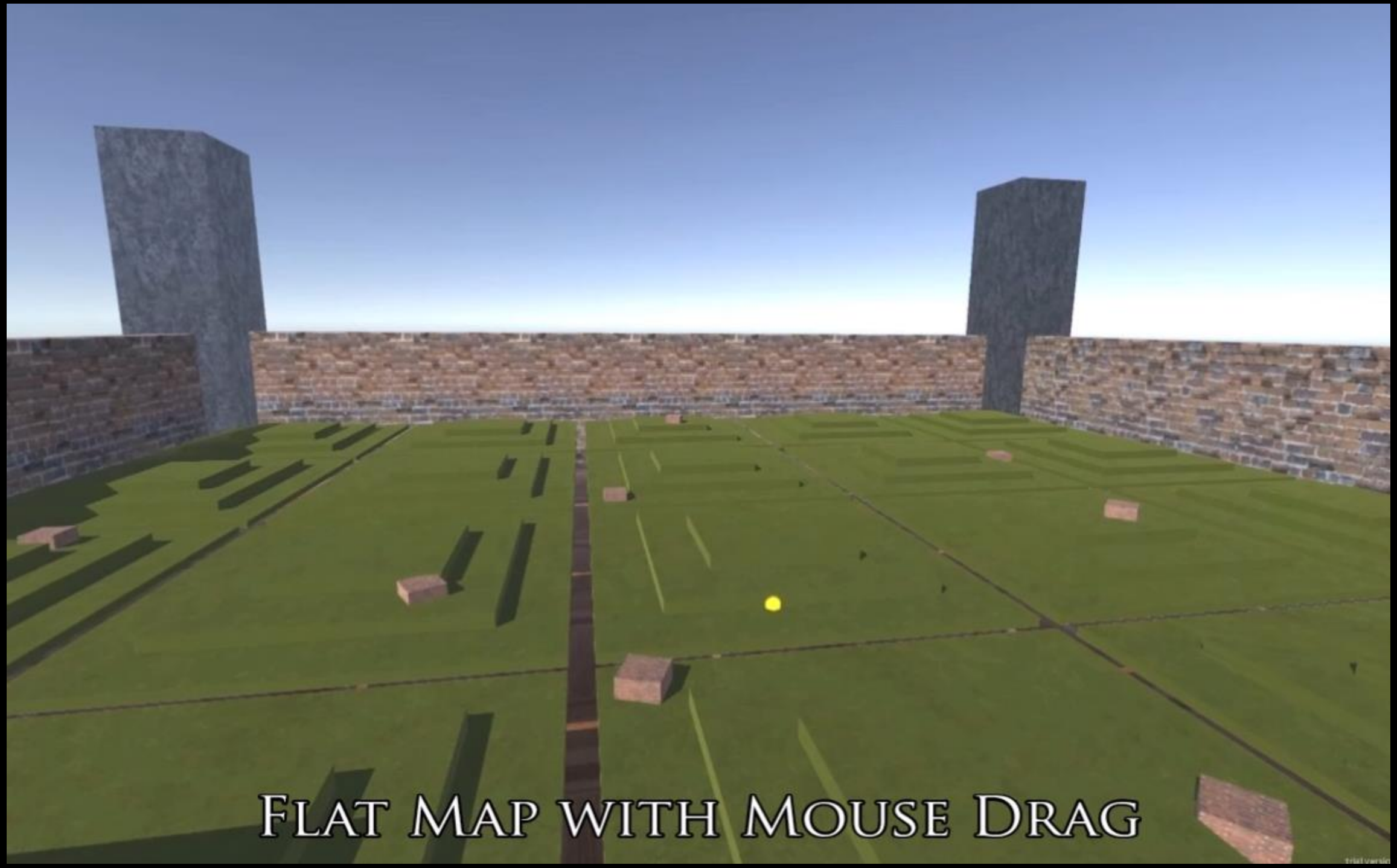
Bowl-Shaped Map With Proxy "Opponent"


Globe-shaped map

Cylindrical "Barrel" map

Fixed Position Map


Flat Map with Mouse Drag

Simple Turntable

TURNTABLE RESULTS

- Pro: Player remains outside the map
- Con: Map is limited in size
- Pro: Map center is tempting as focal point
  - Con: BUT not a great place for gameplay

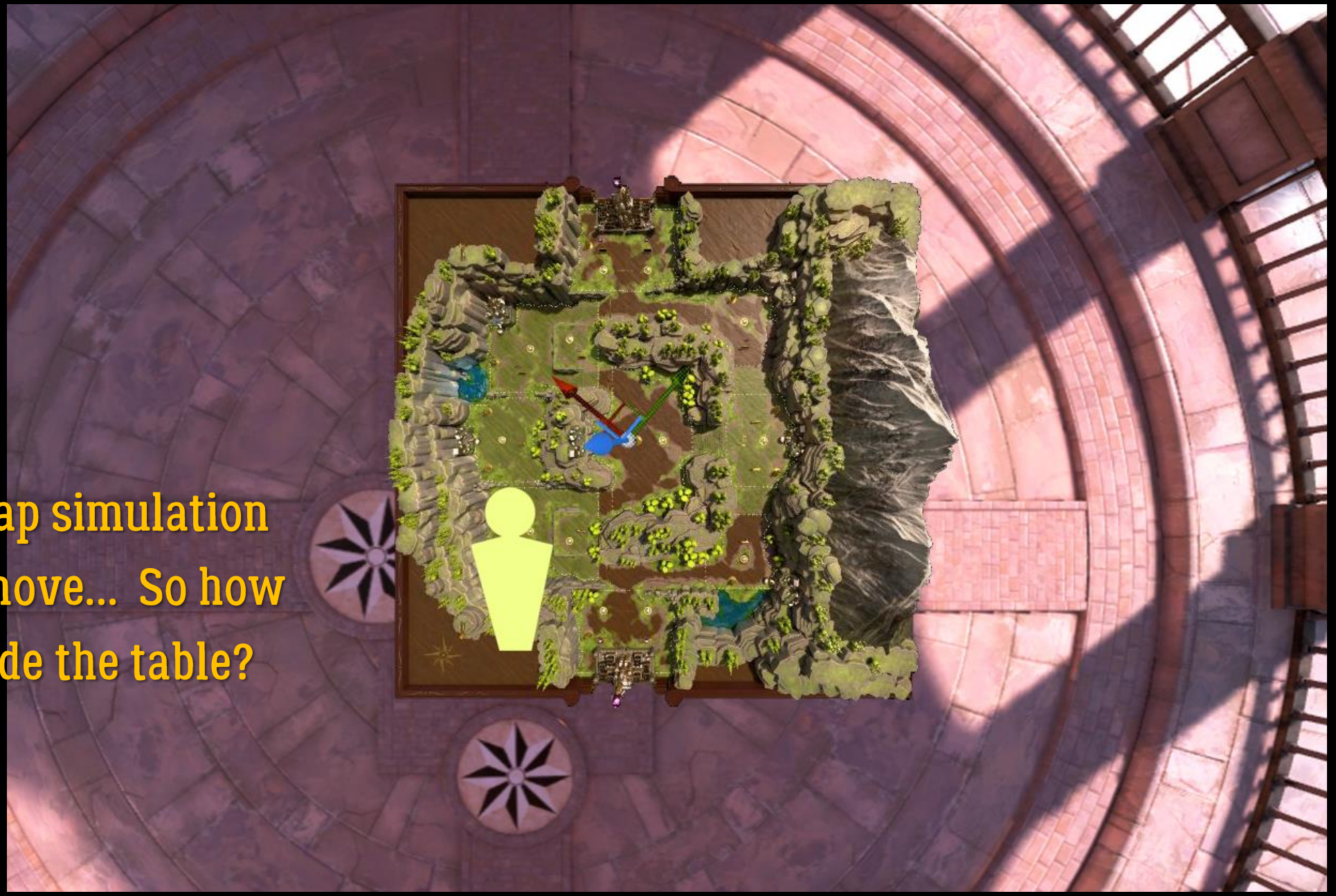
Oculus Touch Turntable

TWO-HANDED SMOOTHED MAP DRAGGING

Six-inch Dragging "Hook"

12-inch Dragging Hook (High Sensitivity)

SIDEBAR: PLAY SPACE AND "REALITY"



Q: The map simulation cannot move... So how do we slide the table?

SIDEBAR: PLAY SPACE AND "REALITY"

A: We attach the room to the player's head and move them together.

MAP TAKEAWAYS

- Fast prototyping won the day
- Body interpenetration = a minor immersion hit…
  - BUT not worth sacrificing gameplay
- Let the player get close to what's interesting!
- An anchor backdrop aids comfort
- Use any trick you can!

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UNIT DIRECTION

UNIT DIRECTION OBJECTIVES

- Command fighting units
- Replace classic RTS mouse actions
  - Click/drag to select
  - Click to move
  - Attack move
- Feel physical and intuitive
- Blue sky!
  - (See https://youtu.be/rAzZE9oN_ks for videos)

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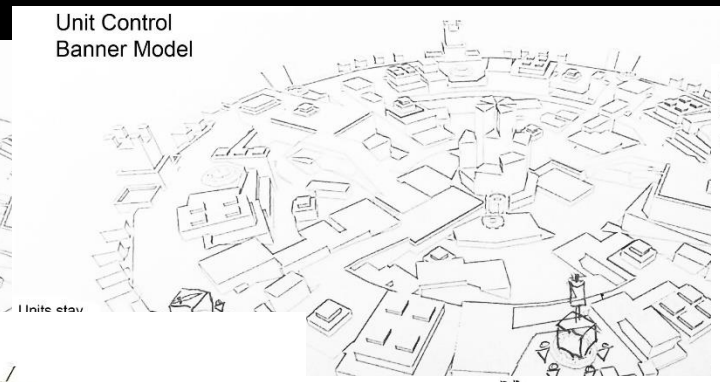
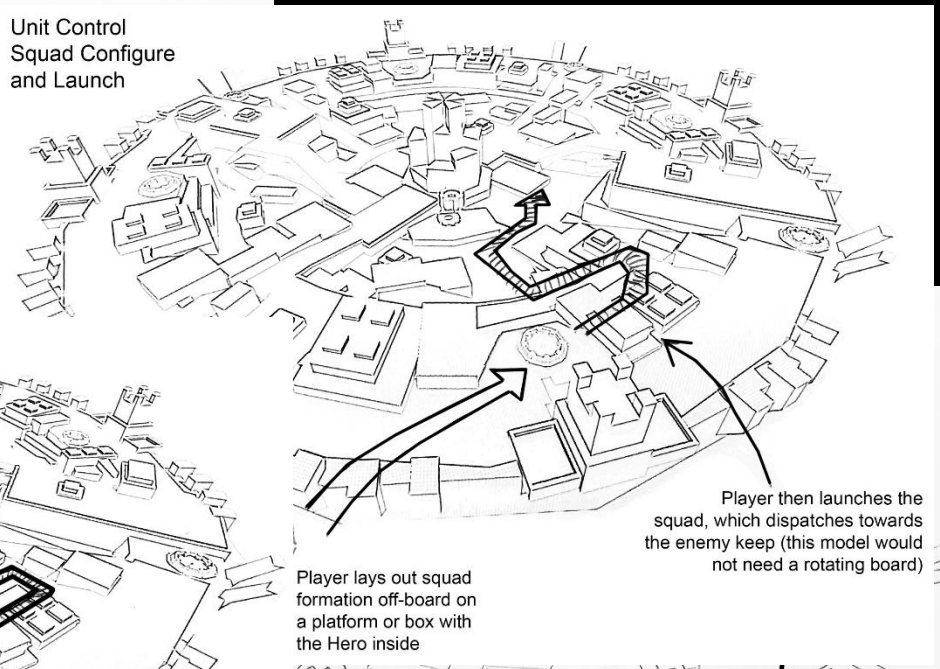
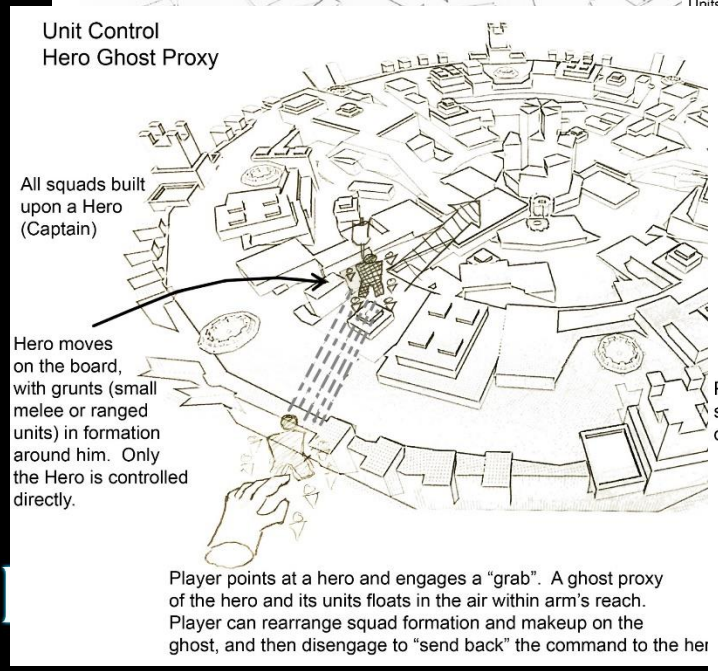
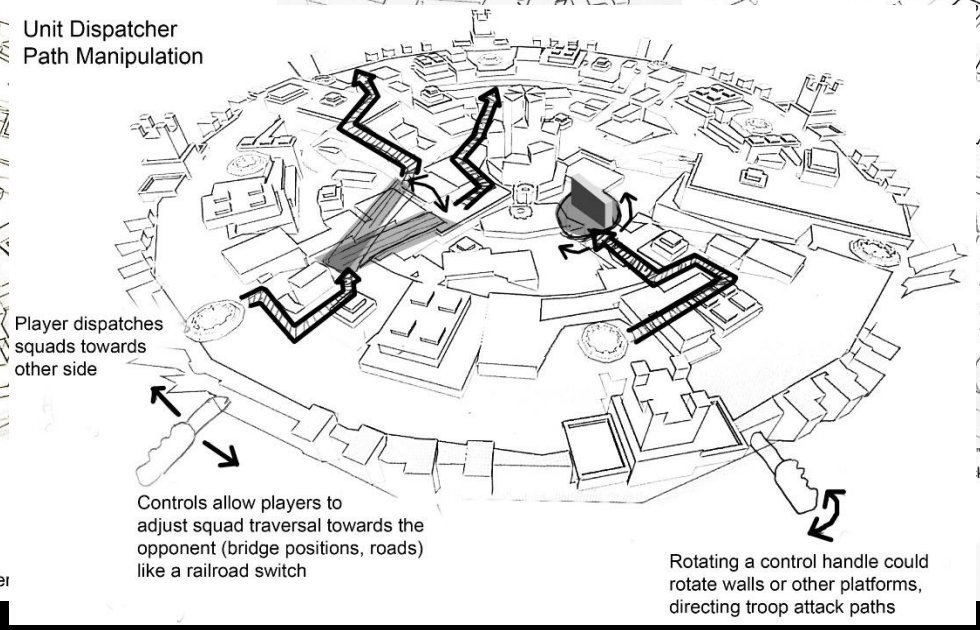
BRASS TACTICS

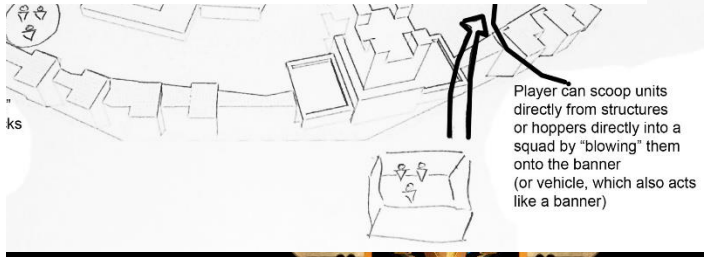
BLUE SKY MOCKUPS











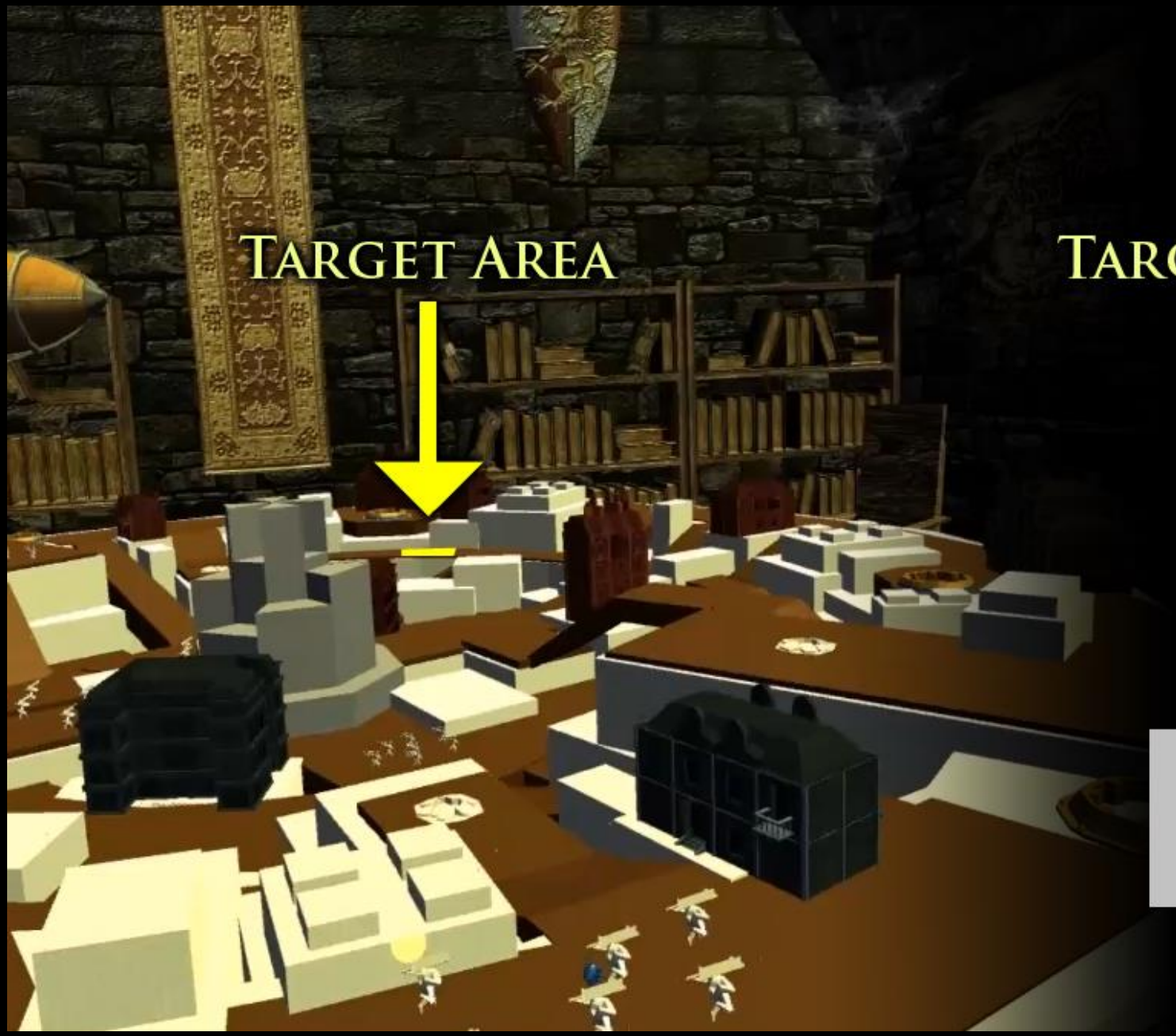
Game
Display 1
Free Aspect
Maximize on Play
Mute audio
Stats
Gizmos
MOUSE CURSOR SELECTION/DIRECTION

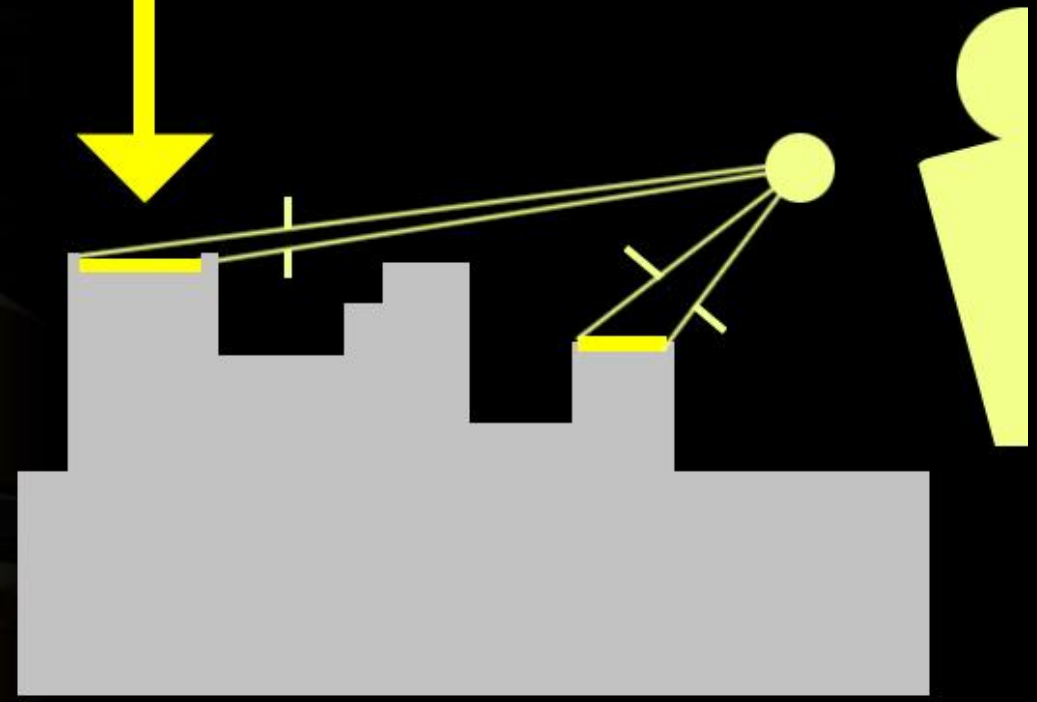
File Edit Assets GameObject Component Window Help
Game
Display 1
Free Aspect
Account
Layers
Layout
Cone Selection

LOLLIPOP SELECTION

LOLLIPOP WITH HAND SPHERE

SIDEBAR: THE POINTING PROBLEM





REVISITING PAST SOLUTIONS: GAZE SELECTION

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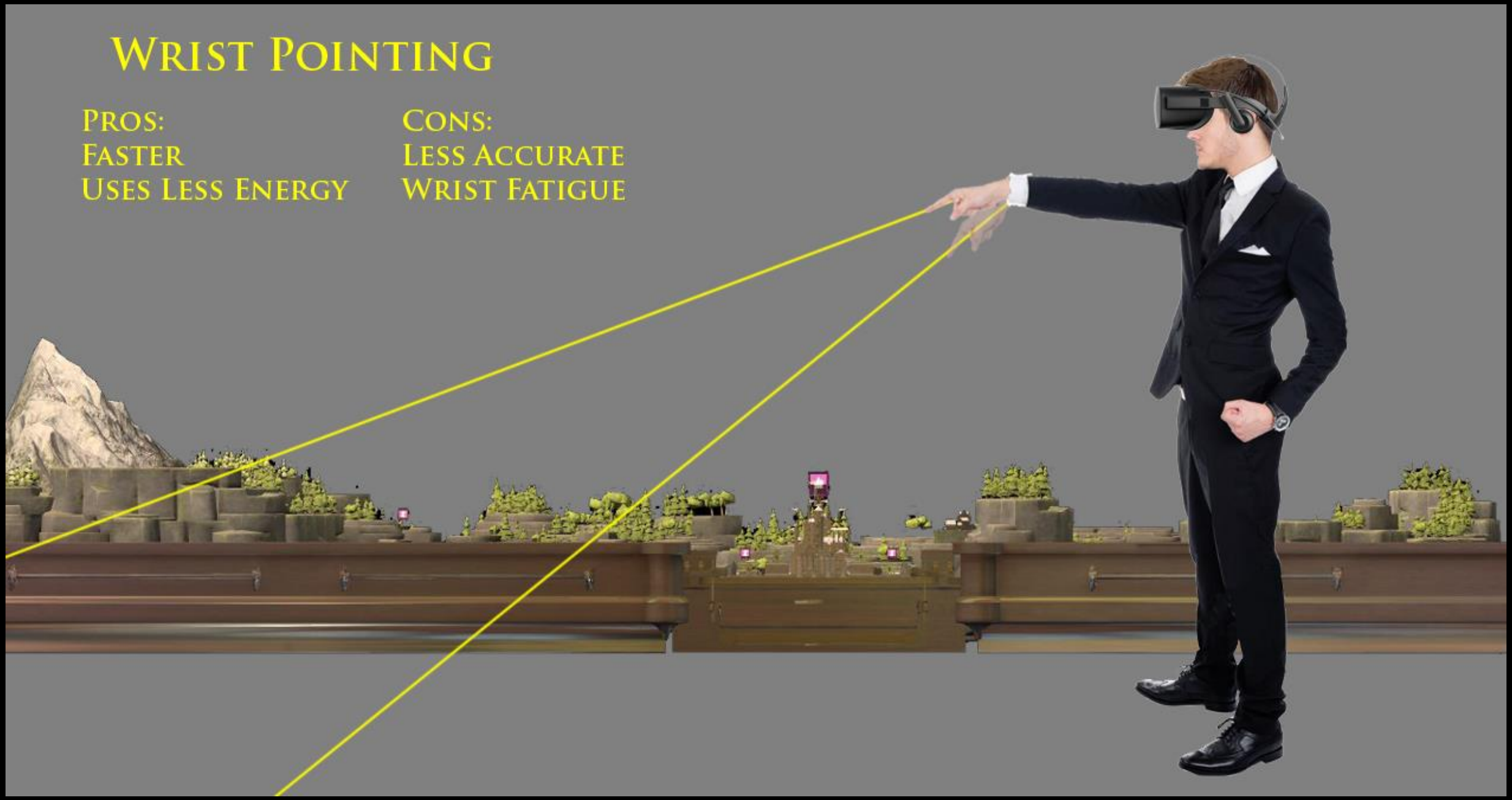
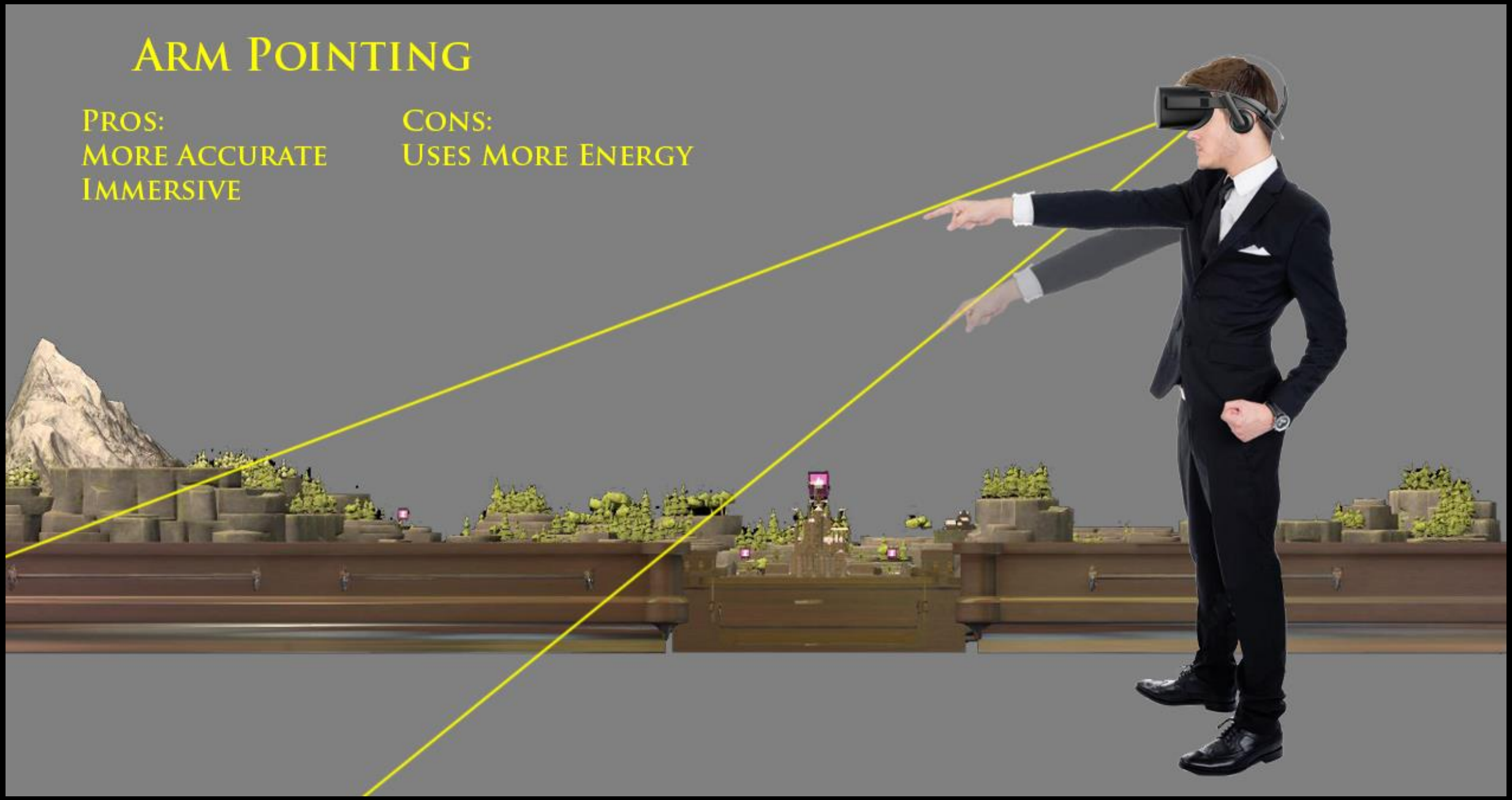
Gaze Selection and Direction

Hand Selection and Gaze Direction

SIDEBAR: THE POINTING PROBLEM



SIDEBAR: THE POINTING PROBLEM



Point Selection and Direction

Point Selection and Direction
Arrow Stretch

IT FELT GOOD!

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SELECTION TAKEAWAYS

- Don’t have to recreate a mouse experience
- Wrist input = less accurate and fatiguing
  - BUT a great force-multiplier
- If it feels good, keep at it!

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ECONOMY

ECONOMY OBJECTIVES

- Add fighting units to the army
- Upgrade units and capabilities
  - “Tech Tree” style advancement
- Feel physical and intuitive
- Minimize reading and menus
- Blue sky!
  - (See https://youtu.be/yPo4guze1Tk for videos)

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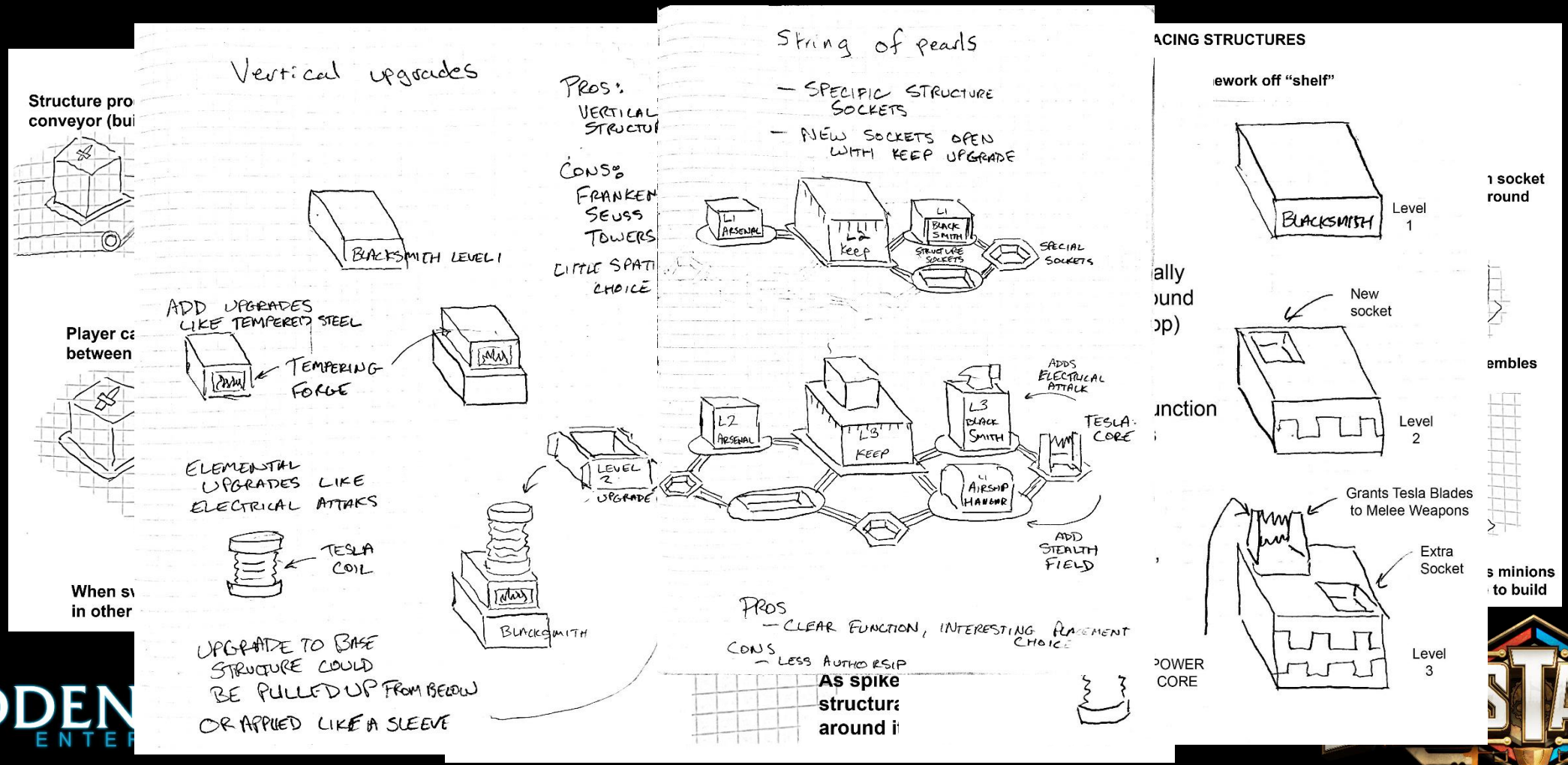
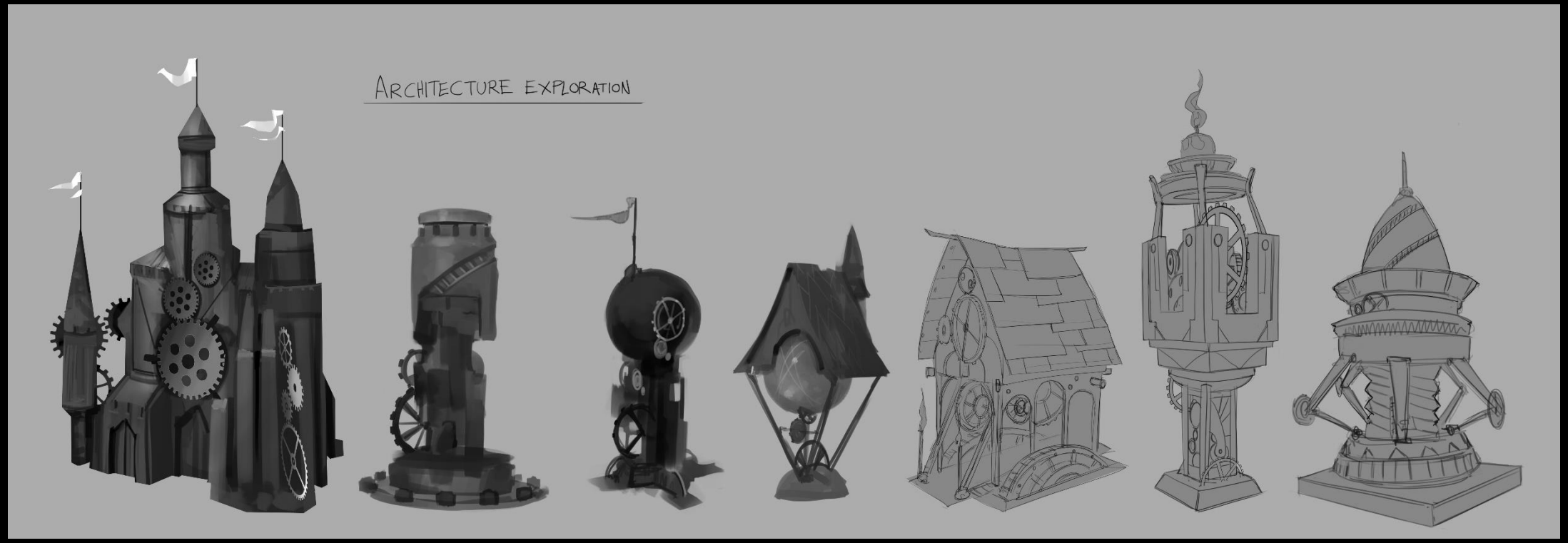
BRASS TACTICS

BLUE SKY MOCKUPS



UNIT TOWERS



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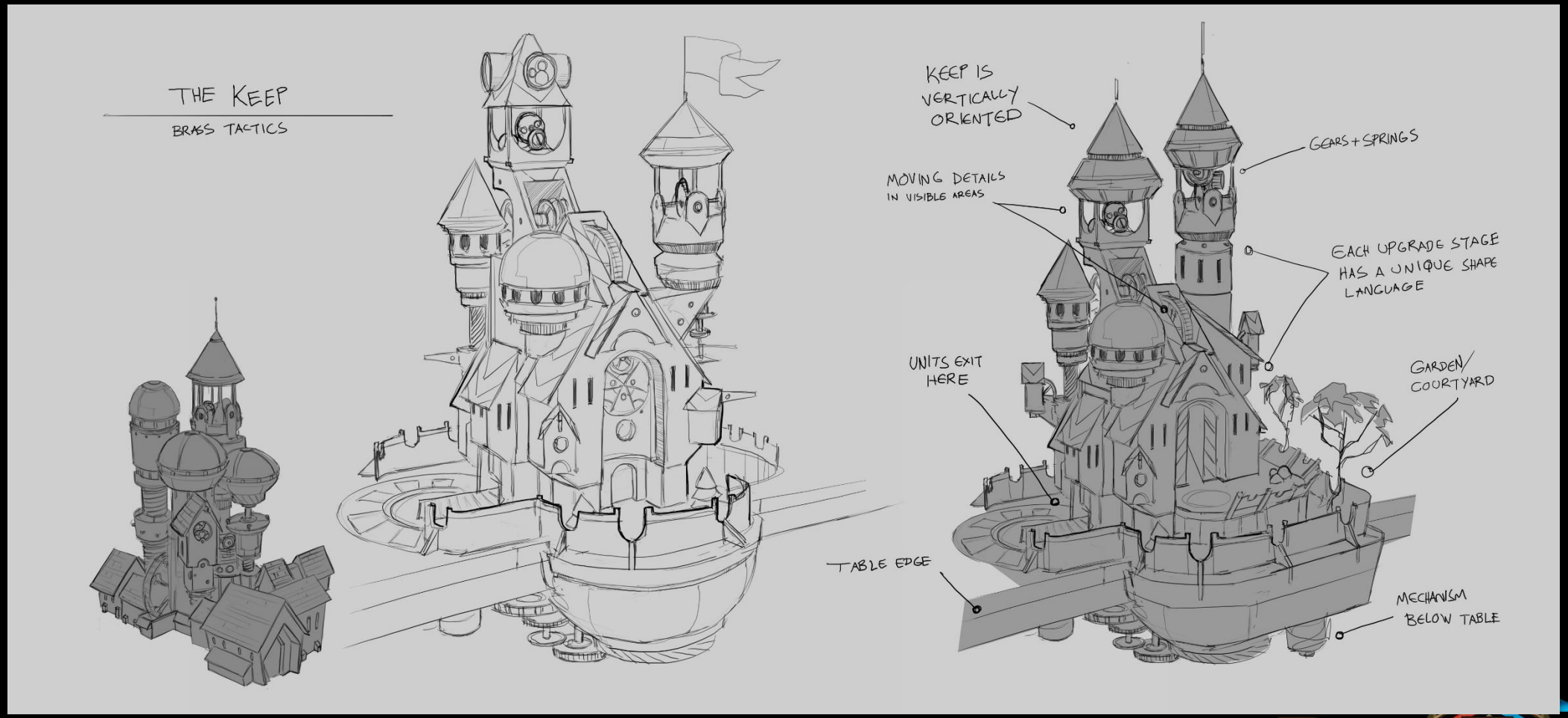
II
III
10
Wasp
10
Mechanic
8
Warrior
8
Archer
8
Cavalry
14

UPGRADES



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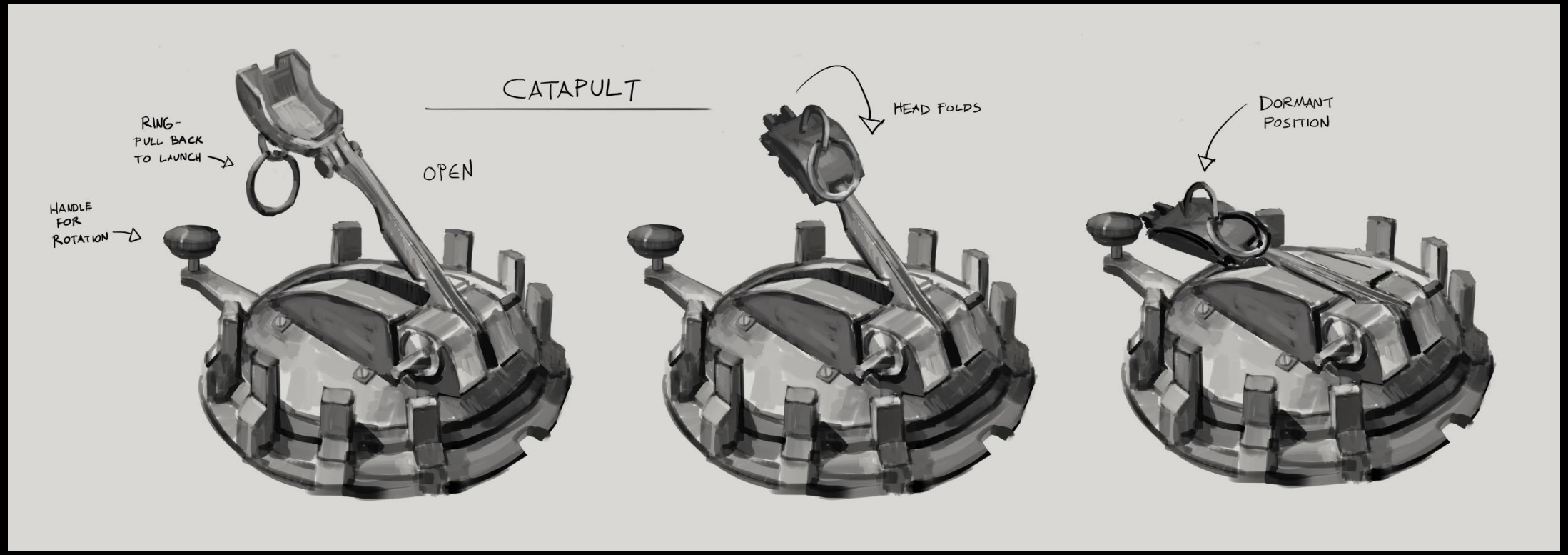
Penetrating Arrows
Faster Move
Projectile Defense
15
Stronghold
8
Blacksmith
15
Skirmish Archers
8
Veteran Cavalry

OTHER EXPERIMENTS



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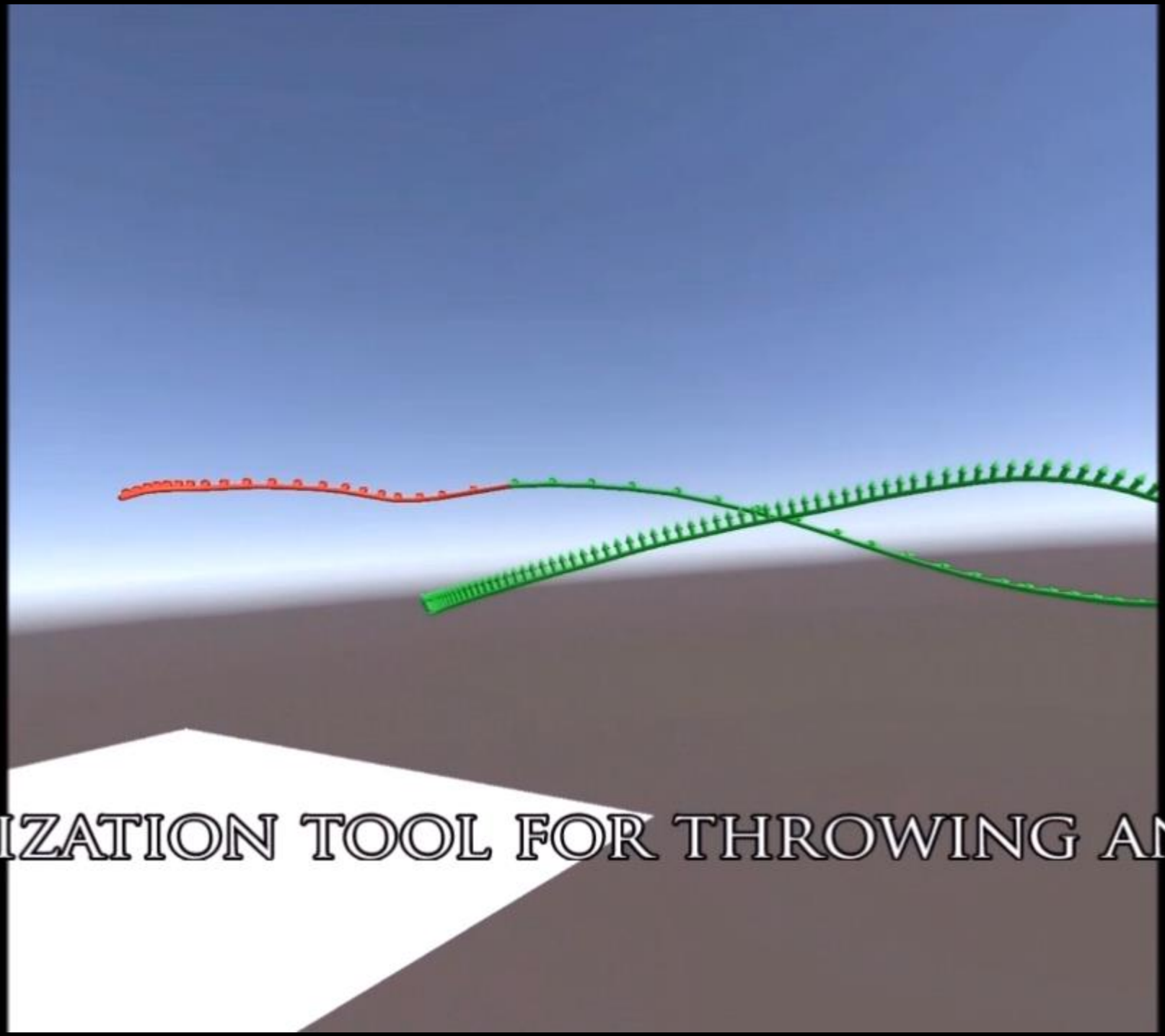
Wind-up Giant Warrior

Catapult Experiments

Fireball



Visualization tool for throwing analysis

FINAL INTERACTION TAKEAWAYS

- Prototype a lot, fail often
- Meaningless motion feels tedious
  - Two hands is immersive but use sparingly
- If it feels good, keep at it
  - Player's action may be a "made up" gesture

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RECAP

- Play Space
  - “Table” dragged horizontally with hands
- Unit Direction
  - Pointing-based drag-release
- Economy
  - Tower Palette
  - Upgrade Buildings behind Castle

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BRASS TACTICS

QUESTIONS?

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