# CrowdSourced Architecture and Environmental Design

*2nd International Conference on Emerging Trends in Engineering and Technology* , May 30-31, 2014 London (United Kingdom)

Joseph T. Wunderlich PhD, Elizabethtown College, PA, USA
and Joseph John Wunderlich, USA

# *AGENDA*

Case 1: United Nations Projects by Others
Case 2: Initial Designs
Case 3: Building on Public Servers in Creative Mode
Case 4: Building on Public Servers in Survival Mode
Case 5: Building on Public Faction Servers
Case 6: Creating a Protected Creative Server
Case 7: Creating a Protected Survival Server
Case 8: Creating Sustainable Towns
Case 9: Wellness Center Competition #1
Case 10: Creating a Digital-Circuit Design World
Case 11: Creating a Multi-World Server
Case 12: Rapid Prototyping Real-World Architectures
Case 13: Building College Campus
Case 14: Group-build of two Dormitories in Two Hours
Case 15: Group-build of Engineering Center in Two Hours
Case 16: Visit to Australian Architectural Server
Case 17: Creating a Japanese Group-Harmony Server
Case 18: Creating Four Japanese Towns
Case 19: Wellness Center Competition #2
Case 20: Creating a European Architecture World
Case 21: Creating a LEED and ISO Green World

# Joseph Thomas Wunderlich III, PhD

Biography


## ½ Computer Engineer





## ½ Architect and Urban Designer



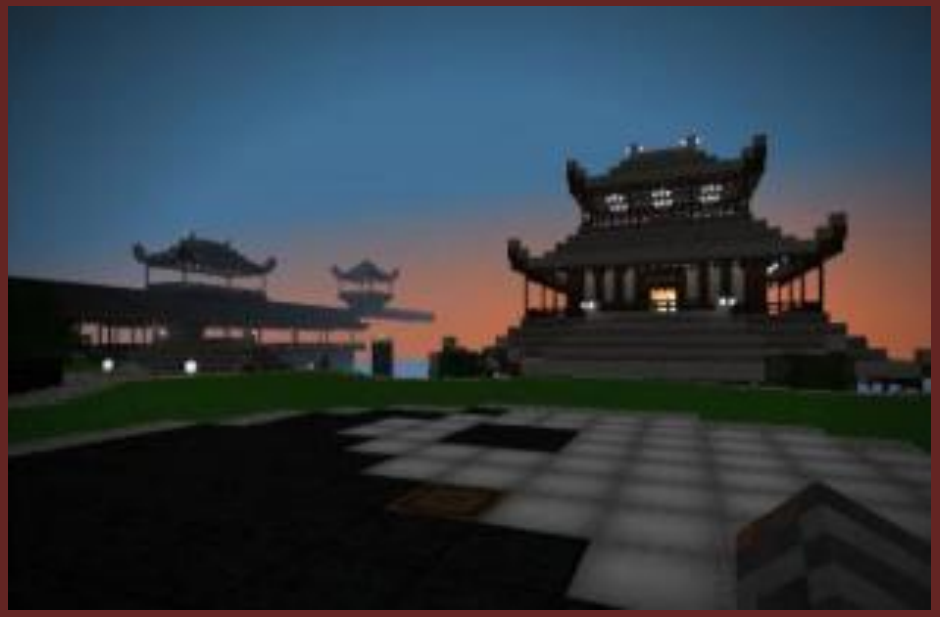

# Joseph John Wunderlich IV

Biography

## Aspiring Young Architectural Student

# Case 1: United Nations Projects by Others

# Case 2: Initial Designs



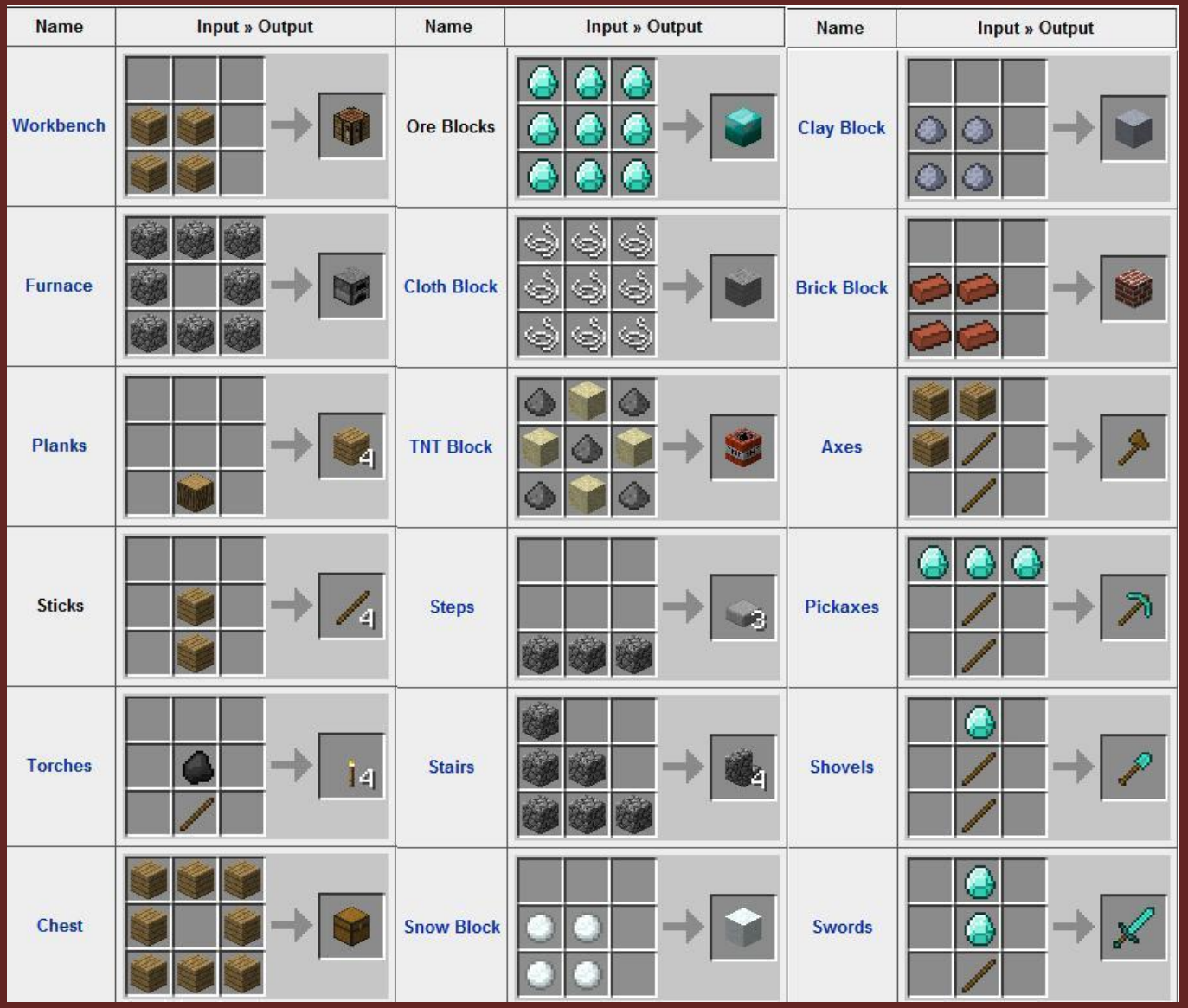
# Case 2: Initial Designs

# Case 3: Building on Public Servers in Creative Mode

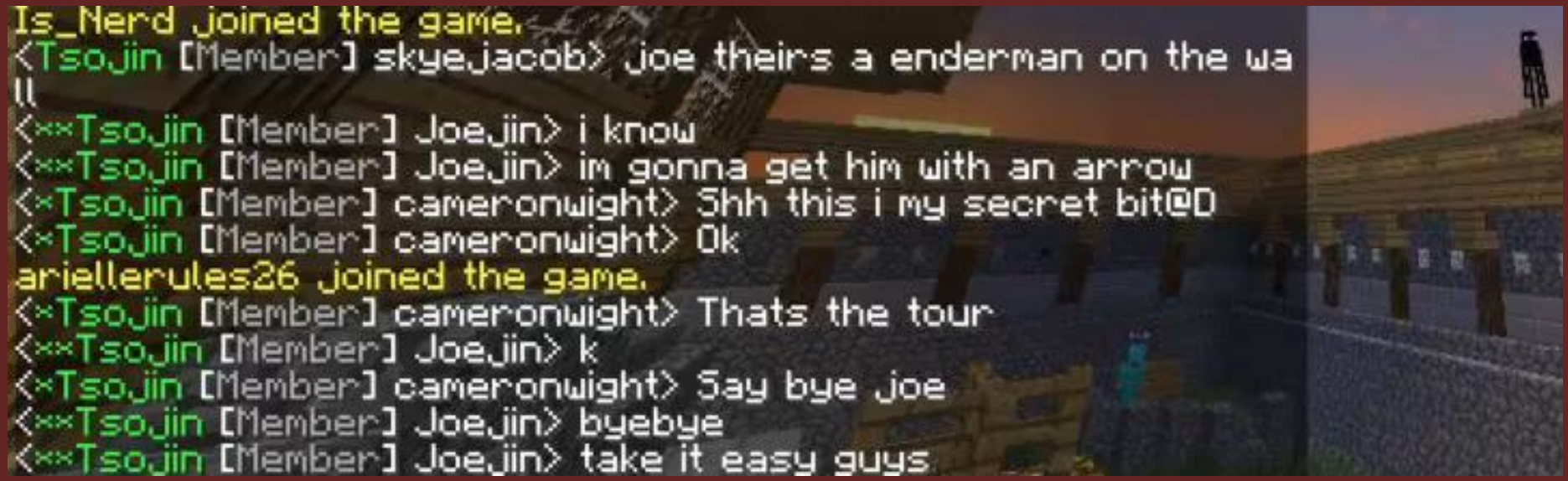
# Case 4: Building on Public Servers in Survival Mode

Food & materials hunted, gathered, crafted

AI Animal behavior --
- **Flocking, herding**
- **Predators , prey**
- **They reproduce**
- **They can be tamed**



# Case 5: Building on Public Faction Servers



# Case 6: Creating a Protected Creative Server

# Case 7: Creating a Protected Survival *world*

# Case 8: Creating Sustainable Towns (College Freshmen)

**ACTIVE SOLAR:** Creatively angle solar panels towards the sun

**NATURAL DAY-LIGHTING:** Maximize sunlight while not overheating house

**MITIGATE COLD NORTHERN WIND**: but consider day-lighting and views

**COMMUNITY GARDEN:** of eatable plants -- till/hoe ground, irrigate, and fertilize Plant carrots, potatoes, etc.

**COMMUNITY LIVESTOCK:** Create animal pens & shelters; breed animals for meat and milk

**ARCHITECTURAL ESTHETIC:** -- livable and esthetic on interior and exterior –and complimentary to all else in village

**URBAN DESIGN and CITY PLANNING:** Create PATHS, NODES, EDGES, GATEWAYS, and DISTRICTS including piazza's, a central market, a central park, etc.

**WELLNESS CENTER:** designate a large lot to be used by visiting high-school students to build a Wellness Center in your town **(with indoor pool, large activity room, and lockers)**

**EXTRA CREDIT**: Make something electromechanical with circuits and logic gates.

# Case 8: Creating Sustainable Towns  (College Freshmen)

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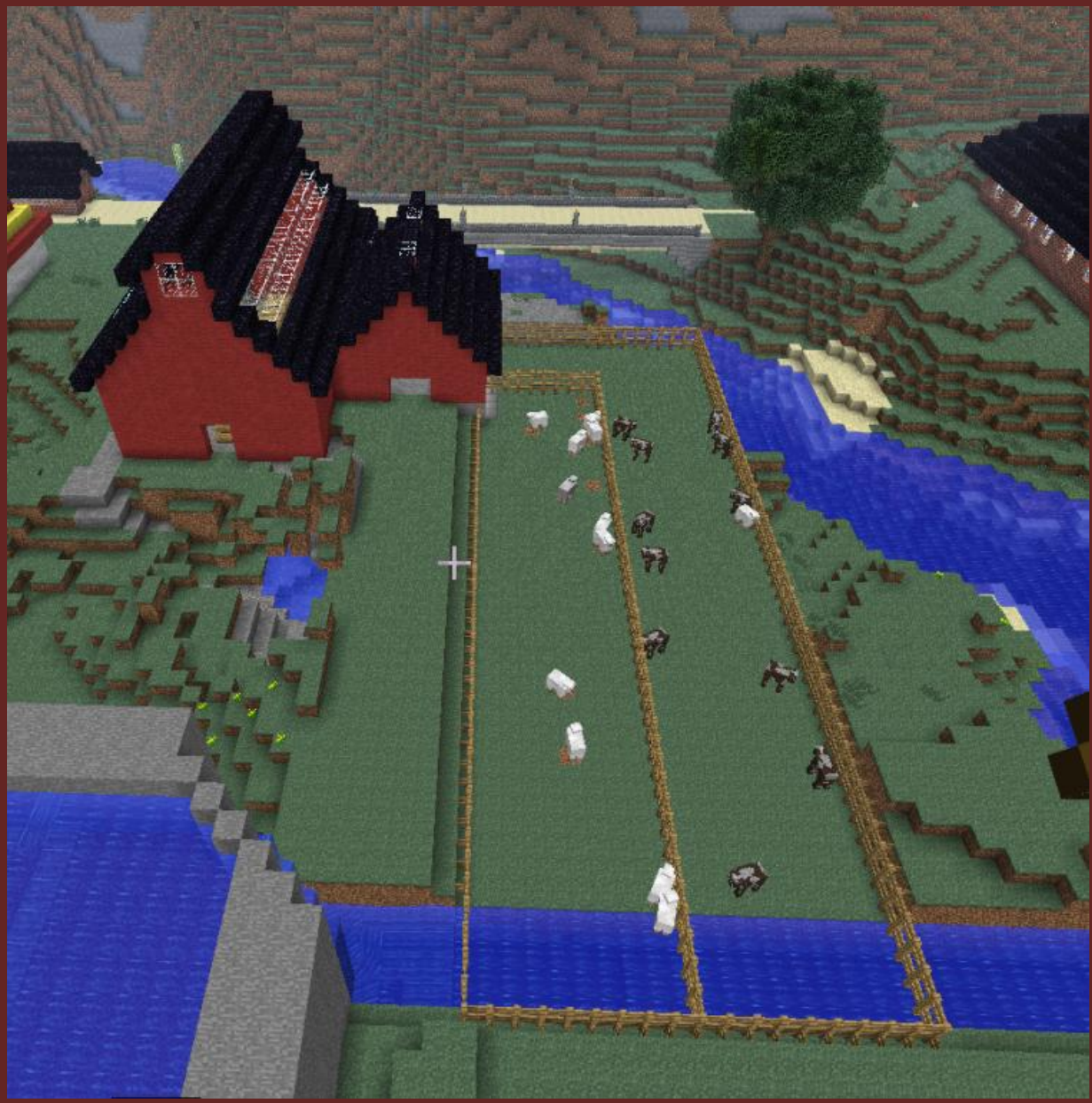
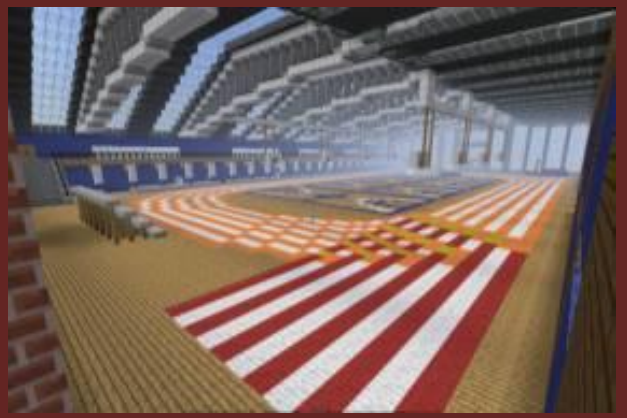


# Case 9: Wellness Center Competition #1



# Case 10: Creating a Digital-Circuit Design World

# Case 11: Creating a Multi-World Server

# Case 11: Creating a Multi-World Server

## Wunderlich “Tsojin” Server

For a more powerful server, a “BUKKIT” server mod “CRAFTBUKKIT” used to allow:

1. PLAYER RANKING; Ours are: *Guest, Builder, Architect, Master, Admin, and Grandmaster* -- each having many accumulated commands. Bukkit plug-ins “ESSENTIALS,” “PERMISSIONS,” “CHAT,” and “GROUPMANAGER” were configured.

2. SQL DATABASE SERVER and plug-in “LOGBLOCK” for logging player activity to allow rolling-back of “griefing” (destruction or construction by un-invited or misbehaving players). The initial release of Tsojin Server was public. Unfortunately, due to griefing (including organized griefing teams), Tsojin was made private.

3. MULTI-WORLD plug-in to allow concurrent worlds (and teleportation & gateways between). Tsojin has six worlds.

4. Many other plug-ins (foul-language censorship, establishing monetary systems, allowing aircraft and vehicles to move, locking tool chests, sign-posting, etc.).

# Case 11: Creating a Multi-World Server

- Main World
- Survival World
- Digital Design World
- FYSworld (four GREEN towns)
- Two private worlds

# Case 11: Creating a Multi-World Server

- **Main World**
-
-
-
-

All players initially enter
in town-center
in Main World

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They're then directed to bulletin board building and various portals to other worlds

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## Portals to other worlds


# Case 12: Rapid Prototyping Real-World Architectures

Wunderlich Residence

# Case 12: Rapid Prototyping Real-World Architectures

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# Case 13: Building College Campus (Student Ricky Sturz)

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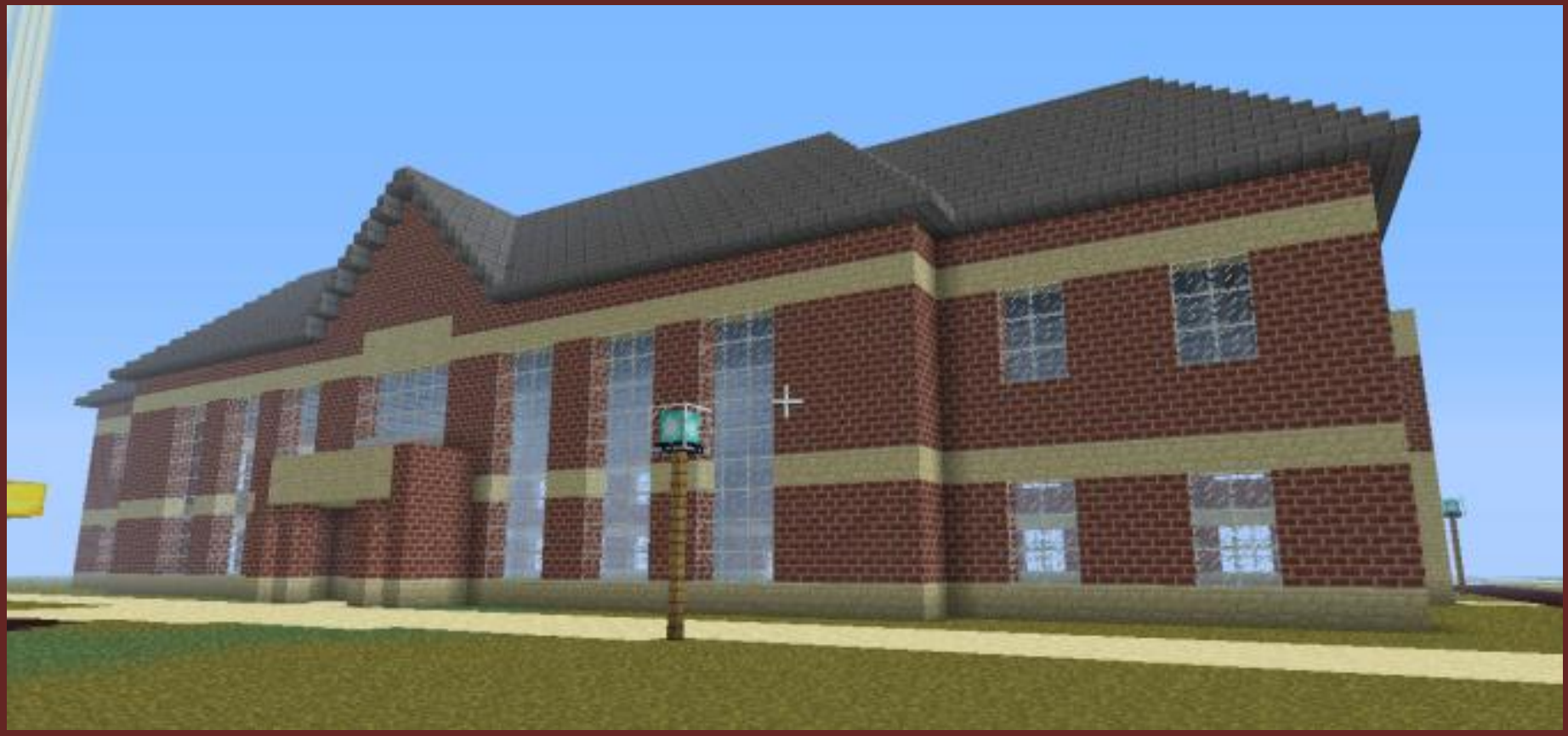

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VIDEO


# Case 15: Group-build of Engineering Center in Two Hours

ENGINEERING 280 “Engineering Research”
ENGINEERING 332 “Computer Organization & Architecture”
ENGINEERING 343 “Green Architectural Engineering ”
PHILOSOPHY 275 “Science and Values”
FIRST YEAR SEMINAR 100 “ Scientific Modeling for Sport”

# Case 15: Group-build of Engineering Center in Two Hours

ENGINEERING 280 “Engineering Research”
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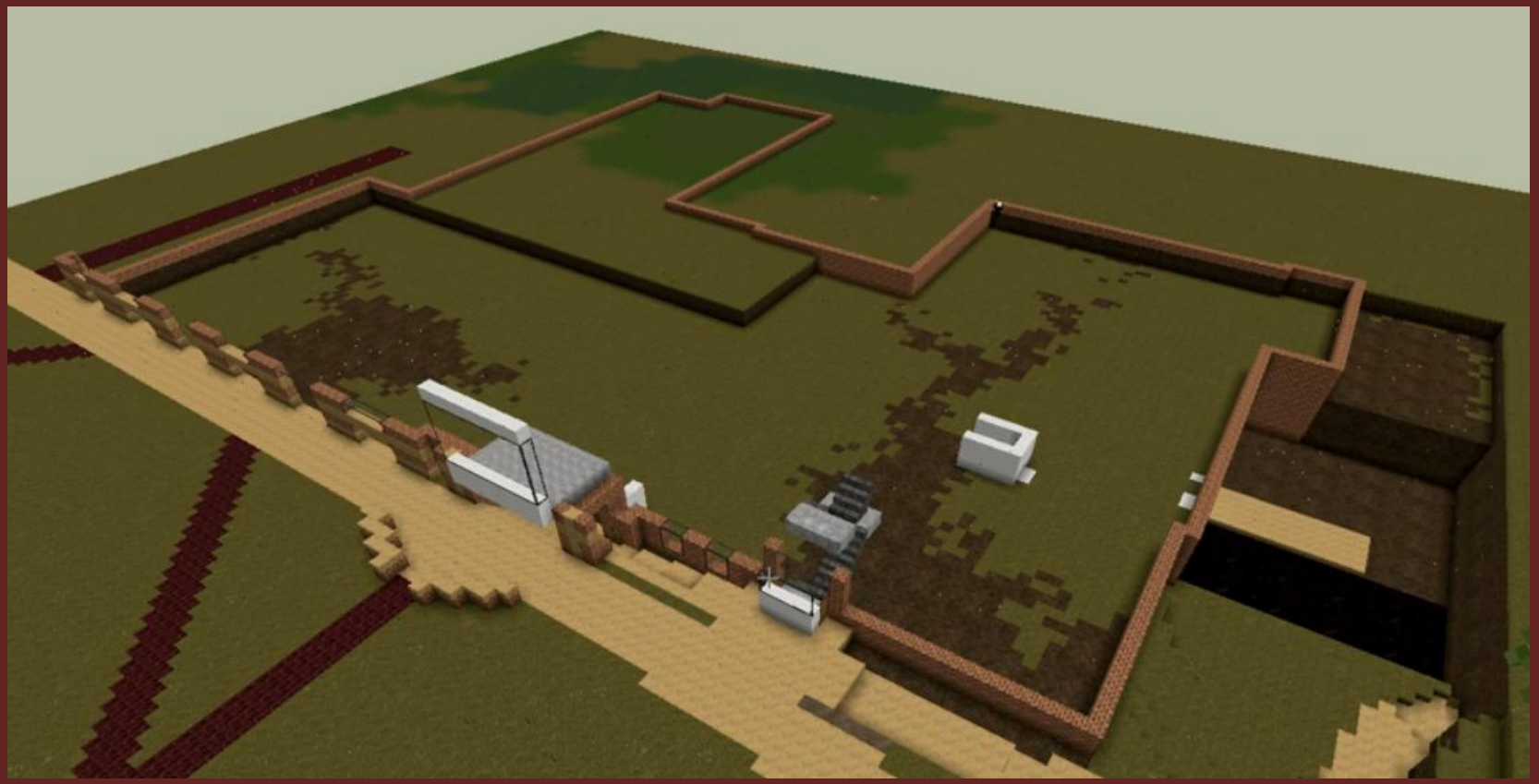

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# Case 16: Visit to Australian Architectural Server

# Case 17: Creating a Japanese Group-Harmony Server

## After J. Wunderlich and son visited Japan in 2013

DISTRICTS –
*Gathering people*

# Case 17: Creating a Japanese Group-Harmony Server

## After J. Wunderlich and son visited Japan in 2013

DISTRICTS –
*Tranquil retreats*

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PATHS - *Channel water*

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PATHS - *Chann*

*water*

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PATHS - *Channel water*

# Case 17: Creating a Japanese Group-Harmony Server

## After J. Wunderlich and son visited Japan in 2013

PATHS - *Channel people on water*

# Case 17: Creating a Japanese Group-Harmony Server

## After J. Wunderlich and son visited Japan in 2013

PATHS - *Channel people on land*

# Case 17: Creating a Japanese Group-Harmony Server

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PATHS - *Channel people on land*

# Case 17: Creating a Japanese Group-Harmony Server

## After J. Wunderlich and son visited Japan in 2013

PATHS and
EDGES –
*Gateways*

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## After J. Wunderlich and son visited Japan in 2013

PATHS and EDGES – *Gateways*

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NODES –

*Gathering people*

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NODES –

*Gathering people*

# Case 18: Creating Four Japanese Towns (College Freshmen)

- Build a late-1800's Japanese town and home including:
  - PASSIVE SOLAR
  - THERMAL MASS
  - NATURAL DAY-LIGHTING
  - MITIGATED NORTHERN WIND
  - ARCHITECTURAL ESTHETIC

**URBAN DESIGN:** Create PATHS, NODES, EDGES, GATEWAYS, and DISTRICTS including a central market, central park with Japanese garden, community garden of eatable plants (till, irrigate, plant carrots, potatoes, seeds, etc, and fertilize), Livestock in animal pens (breed for eating and producing milk)

**WELLNESS CENTER:** designate a large lot to be used by visiting high-school students to build a Wellness Center in your town **(**MEDITATION ROOM, TRANQUILITY POOL, AND JAPANESE GARDEN**)**

**GROUP HARMONY: Architecture must be complimentary to all else in village, and to group harmony ("Wa") of the village**

**PRIVATE SPACE**: Build a private Japanese garden with a pond

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# Case 19: Wellness Center Competition #2

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# Case 21: Creating a LEED and ISO Green World