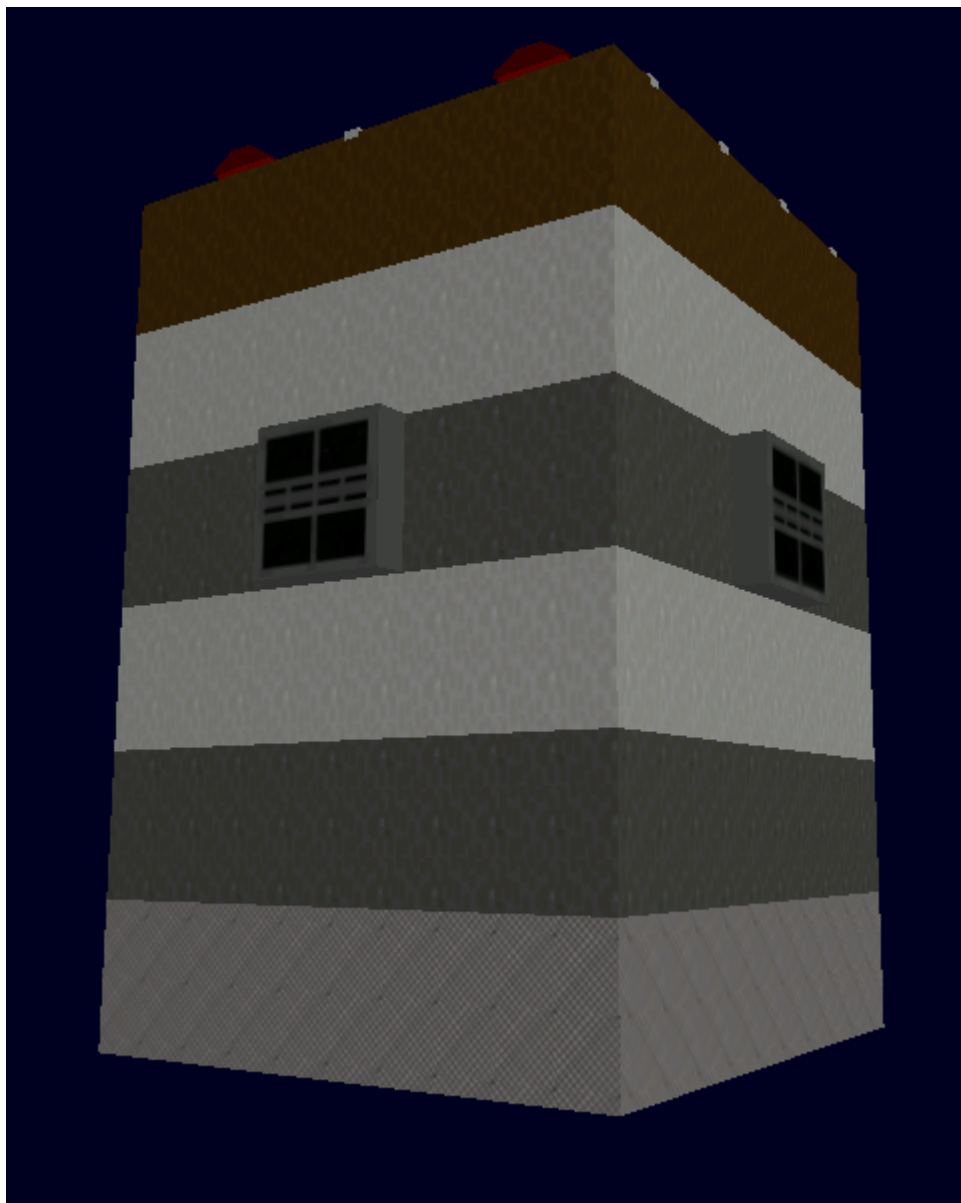
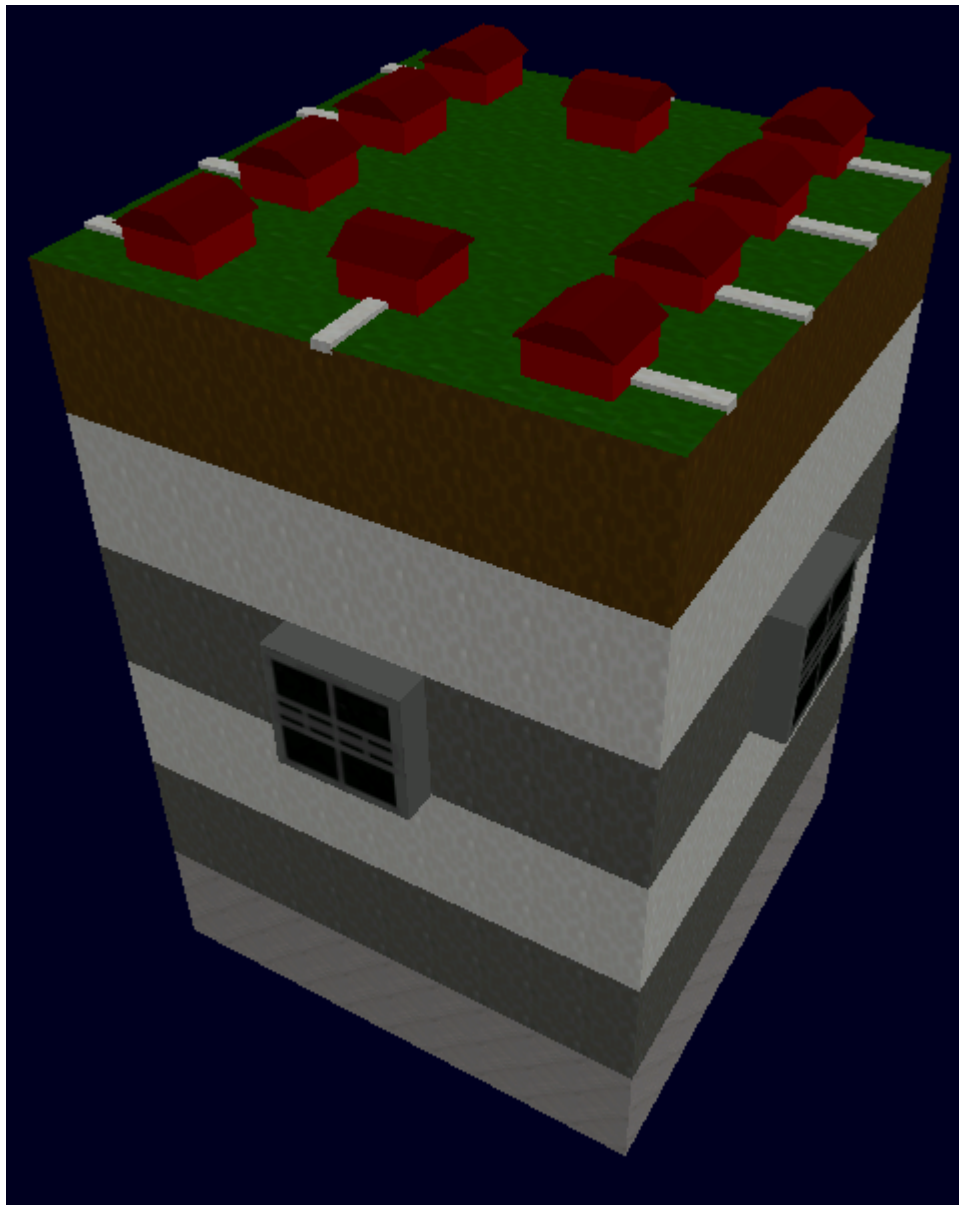


Type 30 City Block





History and Background

Developed in YE 30 by [Kage Yaichiro](#), this new design for a City Block is intended as part of an effort to colonize planets of the Yamatai Star Empire and the United Outer Colonies for colonization by Civilians, as well as direct resources formerly allocated to warships to public works.

Designed to be modular, buildable in space, and delivered by an [Ayame Layer-class Logistics Ship](#), the city block is made aboard an Anri-class Repair Vessel. This allows for precision in construction only matched by a planetwide nodal system, and at comparatively high speed to standard construction techniques. The UOC will have to come up with an alternate method of construction. The city block is intended to be easy to maintain, resistant to flood and geologic change, make optimum use of the water table for water and power resources, and effectively redesign the two dimensional city into a more efficient city with dedicated utilitarian and transit sublevels.

The decision to use Yamataium is a fairly expensive one, but its durability and ability to heal itself slowly give Yamataium the unique ability of being able to sustain the forces of natural geology and erosion for millenia without compromising strength. Yamataium's recovery abilities, while comparatively slow in battle, are very fast and well beyond real-time when considered geological time scales. This and the various other benefits allow the city, in the long run, to be feasible.

Dimensions

100 meters in length 100 meters in width 150 meters in height (plus soil table and buildings)

Construction

City Blocks can deviate as needed by the environment they are constructed in, but they follow the same basic formula.

Barrier

The Barrier surrounds the underground parts of the city block, shielding it from geological change, plant roots, and the water table.

The outermost layer is made of a three inch layer of Yamataium plate, whose ability to regenerate slowly protects it from both erosion and penetration by the water table, and the ability to resist penetration from roots of plants or damage from burrowing animals or insects. Its high durability also protects the city from sudden damage, such as earthquakes. It is not connected to any other trusses or supports, as part of a shock dampening system.

The inner part of the barrier consists of a sturdy, shock absorbing material which is waterproof and quite resilient. It is based on Yarvex, and acts as a shock absorber for the city block, should an earthquake occur. It also acts as yet another defense from the water table.

Pre-placed holes and mechanisms in the barrier allow the controlled intake of water into Sublevel Five.

Sublevel Five

This is the key area for water purification, oxygen filtering, and power generation. The water is heated at the entry to the sublevel, to repel life forms. By tapping into the water table, water is pulled into the city block and purified. The mesh is routinely cleaned by lasers from inside, to remove life forms that still adhere and try to cling to the Yamataium outer mesh. The water, once pulled in; is also cleaned of bacteria, remaining small debris, and waterborne plague. From there, it splits into three areas.

The first thing the water is used for is standard civic use. It is pumped through underground piping to the various buildings in the block, providing the fluid to the populace. Second is to store it in a set of reserve

tanks, should drought drop the water table or for other scenarios. These eliminate the need for water towers in the city.

Third is water which is split through electrolysis into hydrogen and oxygen. Though an initial loss of power, the hydrogen is then used in a set of nuclear fusion reactors. These reactors power the electrolysis system, the filtering system, and all other electrical needs for the city block. Power Reserves are also stored, just in case. This results in the lack of power relay stations or even power poles in the city.

The Oxygen atoms are combined into Oxygen Gas, and stored in tanks for use if necessary. The reason for this is for the Anti-Plague defense system.

The benefits to this are that each block can provide more than enough energy, water, and air for its users. Should a city block's systems need repaired, power, water, and air can be diverted from different blocks without causing problems for the populace.

Lastly, a massive tank of waste is stored here for the city block, which is processed by nodal technology.

Access to this Sublevel of the city block is restricted to Civic and Military personnel.

Sublevel Four

This is the Multipurpose Level Level. The contents of this block, unlike other areas, are not defined beyond structural supports. Custom structures are built at the discretion of the government.

Sublevel Four is listed on all documents as a "multi-purpose level dedicated to supplemental systems and offices necessary for the functionality of the block". However, there is no real need for additional systems – the city clock can operate with Sublevel Four completely empty of anything but support beams.

It is not uncommon to have hydroponics bays, additional production facilities, or even secret military installations in this system. As most people are not permitted in this area; no one knows or sure which city blocks, if any, are military in function.

Access to this Sublevel of the city block is generally restricted to Military and key Civic personnel.

Sublevel Three

This level contains the wires and Durandium piping for the city block. Telephone and internet wiring, air, water, waste, electricity, and all other connections go through here. The humidity, temperature, and all other aspects are carefully controlled here, and walkways allow maintenance of the piping. Due to all of this, maintenance is easily and quickly performed, pipes re-routed, and they last far longer than most underground steel piping systems.

This level also contains various local offices, responsible for running the systems of the city block, networking of the city's resources, and other administrative systems and offices.

While open to the public, the systems which allow the city to function are only accessible to military and civic personnel.

Sublevel Two

This is the High Speed Transit level. Not only is the subway system accessible through here, but this is also home to sections of a high speed highway system. The system is different, however, since the vehicles are controlled by computer. This allows high speeds to be maintained, in spite of exits and exchanges being available every city block.

This is one of the systems that interconnect the city blocks, and these connections are well shielded against water intrusion with Yamataium hulls. Power, Air, Water, Waste, and vehicles all can pass through these connections. The connections, in emergencies, can be sealed off and detached to avoid damage from an Earthquake or other geological force. The gaps created are kept free of soil by gravity control systems which exert force against the soil to keep it in place.

Sublevel One

This is the conventional transit level. This level contains the slower traffic in the city block, parking garages for all major buildings, parking lots, and even individual garages.

These parking places are actually below the basements of the buildings, and the vehicles are again computer controlled. Accidents and parking problems are practically non-existent, there is no civilian foot traffic, traffic is mostly uniform and moving at all hours, and the monitoring system is a major deterrent to auto theft or other auto-related theft.

Soil Table

Above another specially shaped Yamataium plate is a layer of soil, in which plants are grown, people walk upon, etcetera. This level also contains the basements of all buildings.

The shaped Yamataium plate not only protects Sublevel One from soil, rain water, and tree roots, but also maintains a maximum water table volume in the soil table. Combined with the drainage system, flooding is quite rare.

Ground Level

This is the normal area people walk, bike, and live on. Due to the lack of roads, power lines, and other familiar structures, it looks quite different from a standard city, and these are anything but standard. Individual city blocks can widely differ, from agricultural or industrial blocks, to urban and suburban. Common elements, however, include a much greater area allocated to parks, many more and better maintained walkways and bikeways, and more foot traffic than most cities.

Since these areas have more local foot traffic than other areas (due to the rather bland environment one sees when driving), the old walkway marketplace is not an uncommon sight in these cities.

Anti-Plague Sealing System

Due to the loss of life in YE 08 due to a very virulent plague, each city block has the means to shield itself from the outside air of the planet or other city blocks.

If ordered, or if plague is detected, an evacuation of the outdoor Ground Level is initiated. The buildings and sublevels seal themselves from the air outside, and switch to the oxygen tanks in the lowest sublevels. The plague, if it could even be transferred through fluid, would then have to contend with the natural filtering ground water goes through as it flows through the soil, as well as the active filtering systems of the city block.

Construction

Unlike most city blocks, these city blocks are constructed in an [Anri-Class Deep-Space Repair Vessel](#). Since each city block measures 100m by 100m by 150m, it is possible for an Anri to hold four of these city blocks at any given time. This assumes that skyscrapers are not being built, which in itself alters the ability of the block to fully fir in the Anri, or its ability to hold multiple city blocks. This is, of course, in the Yamatai Star Empire. The United Outer Colonies would need to find an alternate method.

Construction can take place in a pressurized or depressurized environment, and quite more rapidly than on planet. The elements of weather, wind, wildlife, and other concerns of nature are not an issue in the Anri repair bay, and so the engineers can more easily and more effectively operate. There is also no difficulty in making the more complex systems which will be placed beneath the ground of the city, a *major* advantage.

Placement and Arrangement

The placement of these cities is fairly straightforward. A uniform pit is dug (or cut) that will contain the city as the city blocks are being made.

A ship of a design to be determined transports the blocks from the Anri to this pit, and these blocks are placed next to each other in a standard block configuration with roughly four meters of spacing in between each block. The connections between the blocks, located on Sublevel Two, are then made. These gaps are then filled in with soil, and that soil is either left to be part of the Ground Level, or made into walkways.

The reason for the gaps between the blocks is to allow the water in the water table to reach every one of the city blocks rather than just the outermost blocks. It is far more efficient for the collection of groundwater. It also gives each city block some space to move in should an earthquake occur, without city blocks hitting each other. While an unlikely scenario, leaning of city blocks in a quake is protected against by basic gravity control systems.

Benefits

Benefits to this design are that the utilities and roadways are far easier to obtain and maintain, said facilities follow a universal system that allows for mass production, that traffic is far easier to manage, normally 1-2 story buildings (such as normal homes) can have 3-4 underground basement levels, garages of Yamataium which double as bomb/attack shelters, and that the three-dimensional construction allows optimal use of the surface area of the planet being built upon.

Lastly; The use of Yamataium, which allows the structure of the city to heal damage to itself, allows the city to survive on geological time scales, many times longer than other cities.

From:

<https://wiki.stararmy.com/> - **STAR ARMY**

Permanent link:

https://wiki.stararmy.com/doku.php?id=faction:yamatai:type_30_city_block

Last update: **2023/12/21 01:00**

