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Nexus Core: Colony Manager – City-Building Mechanics (Technical Design Reference)

Renamed Terminology and Core Progression

Nexus Core reimagines the original **Mankind** colony sim by renaming key concepts and introducing a phased progression system [1] [2]. The table below maps original terms to their Nexus Core equivalents and roles:

Original (Mankind)	Nexus Core Equivalent	Description / Role
City	**Habitation Sector**	A colony city sector where Inhabitants live and work [3].
City Hall	**Administrative Spire** (Tiered: Command Post → Sector HQ → Nexus Spire)	Central sector hub; upgrading it unlocks new Development Phases (DP1, DP2, DP3) for city growth [3].
Settlers / Crew	**Inhabitants / Specialists**	General population vs. skilled workers drawn from population [4].
Base / Station	**Operations Hub**	The base of operations providing power, storage, and resources [5].
Urban-u1/u2/u3	**Development Phases (DP1, DP2, DP3)**	Colony development tiers unlocked by Spire upgrades [6].
Mine	**Extractor**	Resource extraction facility (e.g., ore mining) [2].
Farm	**Bio-Dome**	Food production (Nutrient Paste) facility [2].
Generator	**Power Relay**	Power-generating unit for the Hub [7].
Warehouse	**Storage Silo**	Resource storage unit linked to the Hub [8].
Laboratory	**Research Institute**	Research facility for unlocking new technologies [2].
Factory	**Fabricator**	Manufacturing plant for advanced components [2].

Original (Mankind)	Nexus Core Equivalent	Description / Role
Refinery	**Processing Plant**	Materials processor for advanced resources [9] .
Policlinic (Clinic/ Hospital)	**Wellness Post**	Healthcare service building for citizens [2] .
Police Station	**Security Station**	Security (law enforcement) service building.
School	**Learning Center**	Education service building for citizen needs.
Entertainment Center	**Recreation Dome**	Leisure/Recreation service building for citizens.
Temple/Church	**Spiritual Sanctuary**	Spiritual morale service building for citizens.
Wonder	**Legacy Structure**	End-game monumental project with unique bonuses [2] .

Development Phases (DP): The colony progresses through three Development Phases (DP1–DP3) that correspond to the level of the **Administrative Spire**. Upgrading the Spire from **Command Post** (DP1) to **Sector HQ** (DP2) and finally **Nexus Spire** (DP3) unlocks new tiers of Habitation Sector buildings and improvements [10] . Each Spire upgrade requires significant resources (and likely a prerequisite technology) and **power**, but rewards the player by enabling more advanced structures and a larger colony. The Spire must also be **linked** to the Operations Hub (for power and food supply) to function [11] . This phased system replaces the original "Urban level" concept with a clearer, lore-friendly progression.

Example: At DP1 (Command Post), only basic structures (e.g. small housing and minimal services) are available. Upgrading to DP2 (Sector HQ) permits mid-tier buildings (larger housing, advanced services like education, etc.), and DP3 (Nexus Spire) unlocks top-tier structures (e.g. arcology housing, all specialized facilities). This ensures the colony's growth is gated by both technology and administrative development, mirroring an expanding settlement.

Operations Hub and Resource Infrastructure

The **Operations Hub** is the colony's foundation, housing initial crew and serving as the center of resource production and power management. At game start, the Operations Hub provides a small **basic quarters** for a few initial Inhabitants and some resource storage capacity [12] . The player expands the Hub layer by constructing infrastructure buildings that generate resources, power, and storage to support the Habitation Sector. Key Operations Hub structures include:

- **Extractor:** Mines raw materials (Tier 1 resources like *Ferrocrete Ore* or *Cuprum deposits*) from local deposits [13] . Each Extractor provides a base resource output per cycle (e.g. X units per minute), influenced by deposit richness. **Power Requirement:** Yes – extractors consume Hub power to

operate [13]. Multiple Extractors can be built for different resource types. *(Original Mankind equivalent: "Mine")*

- **Bio-Dome:** An enclosed farm that produces **Nutrient Paste** (the food supply for Inhabitants) [14]. Output is Y food units per cycle, ensuring population growth and preventing starvation. Bio-Domes store their output in the Hub's silos until delivered to connected Habitation Sectors. **Power Requirement:** Moderate (to run hydroponics systems). *(Original: "Farm")*
- **Power Relay:** A generator facility that increases the Hub's **power output** and grid capacity [15]. Each Power Relay adds, for example, +50 to available power. Sufficient relays are needed to meet the growing power demands of Extractors, Bio-Domes, Spires, and advanced structures. *(Original: "Generator")*
- **Storage Silo:** Expands resource storage capacity for the Operations Hub [8]. Each Silo might add e.g. +1000 units to the storage limit for all resources. This allows the colony to stockpile materials for construction and upkeep. *(Original: "Warehouse")*
- **Processing Plant:** An advanced facility (unlocked in later phases) that processes raw resources into refined **advanced materials** (Tier 2+ resources) [9]. For example, a Processing Plant could refine ore into metal alloys or produce chemical components, either passively over time or as a prerequisite to unlock use of exotic materials. **Specialist:** Requires 1 *Engineer* specialist to oversee operations. *(Original: "Refinery")*
- **Fabricator:** A high-tier manufacturing plant that consumes base resources (and refined materials) to produce **Manufactured Goods** or **Advanced Components** [9]. These advanced components are required for building late-phase structures (DP3 buildings, Legacy Structures, etc.). The Fabricator is typically unlocked in DP2 or DP3 and can be assigned a production recipe (for example, converting metal + electronics into an Arcology component). **Specialist:** Requires 1 *Engineer/Technician*. **Power:** High consumption (it's a heavy factory). *(Original: "Factory")*
- **Research Institute:** A scientific facility where new technologies are researched [2]. Building the Institute unlocks the **Tech Tree** interface and allows the player to invest time (and possibly resources) into research projects. Each Institute supports assigning a Scientist *Specialist* to generate research points. Research is crucial for unlocking new building blueprints and global upgrades (details in a later section). *(Original: "Laboratory")*

Power Management: All powered facilities are tied into a unified grid. The Operations Hub tracks total **power generation vs. consumption** in real time [16]. The player must build enough Power Relays (generators) to supply the growing energy needs. If **consumption** exceeds production, systems may brown out or operate at reduced efficiency. Key structures like the Administrative Spire require constant power; thus expanding power capacity is a continuous concern. This replaces or extends any simplistic power model in the original design with a robust simulation of energy balance.

Resource Tiers: The game features multiple resource tiers. **Tier 1** resources (basic metals, minerals) are produced by Extractors and used for early constructions. Later phases introduce **Tier 2 and Tier 3 Exotic Materials** [17] [18], which require Processing Plants to unlock and utilize. For instance, an "Arcology Spire" housing might need *HyperAlloy* (Tier 2) and *Xylos Crystals* (Tier 3) in addition to common materials. By DP3, the colony's supply chain includes raw extraction, refining, and component manufacturing, adding depth beyond the original Mankind resource model.

Habitation Sector & Population Mechanics

A **Habitation Sector** (formerly city) is established by constructing an Administrative Spire and then populating the sector with housing and services. **Inhabitants** (population) live in housing structures and will multiply over time to fill available housing capacity [19]. Nexus Core distinguishes between general population and **Specialists**, but all specialists are initially drawn from the Inhabitant pool [19] (there is no separate "crew" pool – workers come from your colony's population).

Housing Structures and Capacity

Housing provides shelter for Inhabitants and defines the population capacity of a sector. There are three tiers of residential buildings corresponding to development phases:

- **Basic Dwelling (DP1):** Small habitation units (e.g. modular living quarters). **Capacity:** ~10 Inhabitants each. **Cost:** Uses common materials (Tier 1) like wood or ferrocrete. No specialists required. These are the first available housing at Command Post level. *(Originally "small house")*
- **Community Block (DP2):** Mid-rise residential complex unlocked at Sector HQ phase. **Capacity:** ~50 Inhabitants per block. **Cost:** Requires more resources (e.g. steel, concrete) and possibly some Tier 2 materials. Provides denser housing as the colony grows.
- **Arcology Spire (DP3):** Massive high-density residence unlocked at Nexus Spire phase [20]. **Capacity:** ~250+ Inhabitants. **Cost:** Very high; requires advanced components from Fabricators and exotic materials. Arcologies dramatically expand population capacity in late-game, reflecting a mega-structure. *(Originally "Sky Tower")*

Multiple housing structures can be built to increase total capacity. Each Habitation Sector's population is capped by the sum of its housing capacity (across all dwellings and arcologies built).

Population Growth: Inhabitants reproduce (or immigrate) over time to fill any available housing. Growth is **gradually progressive** and influenced by colony conditions. If needs are met, population will approach the housing limit; if not, growth slows or halts. A possible formula for population growth per time unit is:

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ΔPopulation = currentPopulation × baseGrowthRate × HappinessFactor ×
FoodSupplyFactor
              × (HousingCapacity − currentPopulation) / HousingCapacity
```

This formula indicates that growth rate is proportional to current population (more people can produce more offspring), scales with **Happiness** (as a percentage, 0–1) and **Food supply** (if Nutrient Paste is sufficient for all, this factor = 1; if food is scarce, it drops below 1), and it tapers off as population approaches the housing capacity (no growth once housing is full). In practice, this means a well-fed, happy colony with empty homes will experience robust growth, while a dissatisfied or starving colony will stagnate. **Legacy Structures** can further boost population growth – for example, each Legacy might add a +X% bonus to baseGrowthRate [21]. (In the original design, population growth was also tied to housing and happiness, but Nexus Core formalizes these factors and introduces food as an explicit requirement [19].)

Note: If critical needs (like food) are unmet for extended periods, the design can optionally allow **negative growth** (population decline) to simulate attrition, though the core model focuses on growth slowing to zero when conditions are poor.

Citizen Needs, Happiness, and Services

Each Inhabitant has a set of **needs** that must be fulfilled for maximum happiness. The key citizen needs in Nexus Core are **Food**, **Health**, **Security**, **Education**, **Recreation**, **Spiritual Fulfillment**, and **Employment**. These roughly correspond to the service buildings and conditions present in the original game, now updated with new names and mechanics. **Happiness** is the aggregate measure of how well needs are being met across the population [22]. It ranges from 0 to 100 and directly affects population growth and productivity.

- **Food (Nutrition):** Inhabitants consume Nutrient Paste supplied by the Operations Hub's Bio-Domes. If food supply meets or exceeds demand, this need is satisfied. If there is a shortage (Nutrient Paste < population required consumption), hunger will sharply reduce happiness and halt growth. *(This was an implicit factor in the original; now explicitly modeled.)*
- **Health Care:** Provided by **Wellness Posts** (clinics) placed in the sector. Each Wellness Post has an **influence radius** (coverage area) within which it can serve up to a certain number of citizens (capacity). Inhabitants living within range of an active Wellness Post are considered to have their health need met. If an area lacks health coverage, residents there will have lower happiness due to illness/untreated injuries.
- **Security (Safety):** Provided by **Security Stations** (police outposts). They project an influence radius that covers nearby homes with law enforcement presence, reducing crime or unrest. Citizens within the radius feel safe (security need met); those outside it feel unsafe, lowering their happiness.
- **Education:** Provided by **Learning Centers** (schools). These facilities ensure citizens (or their children) are educated. Education need being met may not only improve happiness but could be tied to long-term benefits (for example, higher education levels might increase the efficiency of specialists or the rate of innovation, though this is a possible extension).
- **Recreation:** Provided by **Recreation Domes** (parks, entertainment hubs). Recreation domes give inhabitants leisure activities and relaxation within their influence radius, fulfilling the need for entertainment and reducing stress.
- **Spiritual Fulfillment:** Provided by **Spiritual Sanctuaries** (temples/places of worship). This need is more abstract; sanctuaries improve morale and provide a sense of purpose or community. As with other services, their effect is radius-based – a sanctuary will uplift those living nearby.
- **Employment:** Provided by job opportunities in the sector (or Hub). If a portion of the adult population is unemployed, it negatively impacts happiness (people feel idle or useless). Creating jobs via **Commercial Zones** and **Light Industry** facilities will satisfy the employment need. Essentially, the **Employment Rate** (percentage of population employed) drives this factor – 100% employment maximizes happiness for this need, whereas high unemployment drags it down.

Each need contributes to overall Happiness. The game computes happiness as a combination of all needs' fulfillment. For example, we can model overall **Happiness** as the average (or weighted average) of all individual satisfaction metrics: if most needs are met (values near 100%) but one is severely lacking (e.g., no security in a neighborhood), happiness will drop accordingly. Additionally, **morale bonuses** from Legacy Structures can add a flat boost or multiplier to happiness [21], reflecting colony-wide pride or unity.

Note: In **Mankind**, service buildings had a fixed number of people they could serve ("influenced people") regardless of location. In **Nexus Core**, this is refined to an **Influence Radius** model [23]. Service buildings only affect Inhabitants within a certain distance on the sector map, introducing a spatial element to city planning. The coverage is no longer automatically city-wide; placement matters to ensure all residential areas fall within the radius of essential services. This design change adds realism and strategy in coverage planning.

Note: Specialists are required to operate most service and industrial buildings, marking another refinement from the original design. For instance, a Wellness Post needs a **Medic**, a Security Station a **Security Officer**, etc., drawn from the colony's population [19]. In Mankind, workers were not differentiated from settlers; Nexus Core formalizes skilled roles, meaning that each such building will reduce the available general workforce by one (the person becomes a specialist). It's implied that a sufficiently educated population is needed to fill these roles (though formal training mechanics are abstracted or could be tied to having a Learning Center for flavor).

Service Buildings Coverage and Stats

All service buildings have **limited capacity** – they can only effectively serve a certain number of Inhabitants within their radius. If the population in range exceeds capacity, the service quality per person may drop (or happiness gains plateau) until more facilities are built. The following table summarizes the Habitation Sector service buildings, their roles, and key stats (using Nexus Core terminology and metrics):

Service Building	**Need Fulfilled**	**Influence Radius**	**Capacity (Population)**	**Specialist Req.**	**Upkeep** (@month)
Wellness Post	Health care	~20 tiles	~100 citizens	1 Medic	10 Credits
Security Station	Safety / Policing	~20 tiles	~100 citizens	1 Officer	10 Credits
Learning Center	Education	~20 tiles	~100 citizens	1 Teacher	10 Credits
Recreation Dome	Entertainment	~20 tiles	~100 citizens	1 Facilitator (Coach/ Entertainer)	10 Credits
Spiritual Sanctuary	Spiritual morale	~20 tiles	~100 citizens	1 Chaplain	10 Credits

Notes: All values are illustrative and can be tuned. *Influence Radius* is given in abstract tile units (assuming the sector is mapped on a grid or coordinates); ~20 tiles radius would cover a medium neighborhood. *Capacity* indicates the number of people one facility can adequately service at once – if a sector has 200 people in the radius of one Wellness Post, roughly half might not receive full health services unless a second Post is built. Each building requires one corresponding Specialist as listed, who must be allocated

from the population. *Upkeep* is the monthly operational cost in Credits to maintain the facility (staff salaries, supplies), part of the game's economic model (discussed below).

These service buildings become available as the colony advances. Basic ones like Wellness Posts and Security Stations may be available in DP1 or DP2 (early colony) so that critical needs can be addressed once a Habitation Sector is founded. Others like Learning Centers or Spiritual Sanctuaries might be unlocked by research or by reaching DP2, depending on design balance, to introduce these needs as the colony grows more complex. All service buildings collectively contribute to the **Happiness system** by fulfilling their respective needs. The UI will provide a Happiness dashboard to show how each need is being met and which areas of the sector are lacking coverage [24].

Economy, Employment, and Civic Index

Nexus Core introduces a more robust economic system using a universal currency (tentatively called **Credits** or **Nexus Bonds**) for construction and maintenance [25]. This replaces the simplistic "rent" income model from Mankind with explicit income sources, expenses, and financial management.

Construction Costs: Nearly all buildings require an upfront **resource cost** (materials) and may also incur a **Credit cost** to build. For example, constructing a Basic Dwelling might cost 10 units of iron and 100 Credits. Higher-tech buildings require correspondingly rarer resources and higher funds. This dual-cost mechanism means the player must gather raw materials and also manage a budget.

Upkeep (Operational Costs): Many buildings, especially service buildings and advanced facilities, have a recurring maintenance cost in Credits [26]. In the table above, each service had an upkeep of 10 Credits/month, which is the salary for staff and operating expense. If the player cannot pay the upkeep, it could result in service degradation (e.g., a Wellness Post might shut down if unfunded). This ongoing expense forces the player to balance expansion with sustainable income. *(Originally, houses generated "rent" which funded services implicitly; now the loop is explicit – you must ensure income covers upkeep.)*

Income Sources: The primary way to earn Credits is by providing commercial and industrial outputs in the colony. **Commercial Zones** and **Light Industry** are two sector buildings specifically added to generate revenue and jobs [27] [28]:

- **Commercial Zone:** Represents marketplaces, trade hubs, or retail centers in the Habitation Sector. Each Commercial Zone can **employ** say up to 20 Inhabitants (general workers, not specialists) and generates revenue by commerce. For example, a fully staffed Commercial Zone might produce **+50 Credits per month** in income (through taxation or trade profits). This adds to the colony's treasury. Commercial Zones also improve the **Civic Index** by fostering a service economy and middle-class employment.
- **Light Industry:** Represents small factories or workshops within the sector (distinct from heavy industry on the Hub). A Light Industry facility can employ ~20 workers and might generate **+75 Credits per month** from the production of consumer goods or materials for export. This not only provides income but also diversifies employment opportunities, contributing to the Civic Index. Light Industry might have a slightly higher output than Commercial Zones but could require some raw materials to operate (optional design choice) or produce minor pollution (not detailed here).

Both Commercial and Light Industry buildings become available by mid-game (likely DP2) when the population is large enough to support an economy beyond basic survival. They **do not require specialists** to run (their workforce is the general Inhabitant population), though an *overseer* specialist could be a future consideration for larger industrial facilities. By creating jobs, these buildings directly reduce unemployment and thereby increase happiness (fulfilling the Employment need).

Civic Index (formerly "Social Class"): This is a new composite metric that gauges the socio-economic development of a sector [27]. Unlike a binary class system, the Civic Index is a continuous value that rises with higher employment rates, presence of commercial activity, and overall standard of living. Essentially, it captures how advanced and well-rounded the city's economy and society are. For instance, a sector with abundant jobs, diverse services, and content citizens will have a high Civic Index. This could influence certain outcomes – for example, perhaps a higher Civic Index boosts **tax revenue** or makes the sector more attractive for new Inhabitants. It replaces the original notion of social classes with a single index that is easier to measure and use in game logic. (In design terms, Civic Index might be calculated from factors like average happiness, employment rate, and availability of luxury services.)

> **Note:** The shift to a **Credit-based economy** and explicit job buildings is a significant enhancement from the original game. In Mankind's simpler model, housing might have passively generated "rent" that funded services in the background. Nexus Core instead gives players control: you build Commercial Zones and industries to **generate income**, and you allocate that income to pay **operational costs** [25] and fund research or construction. This adds a layer of economic strategy (similar to city-builders where you manage a budget). It also ties in with the **employment** need – unemployment can be reduced by building more job-providing structures, which in turn increases income, creating a positive feedback loop for well-managed colonies.

Research and Technological Progression

Technology research in Nexus Core is key to unlocking the full range of buildings and upgrades. The **Research Institute** building is required to start research activities [29]. Once built (often early in the game via an initial tech or at DP1), it allows access to a **Tech Tree** interface. Research projects cost time (measured in in-game days/months) and often a Credit investment or resources (for example, a project might consume 50 Credits or some research materials to fund experiments).

Specialists and Research: The Research Institute likely requires at least one **Scientist** specialist to operate. Additional scientists or multiple Institutes (if allowed) could accelerate research. Research progress could be quantified in "research points per day", influenced by the number of scientists and possibly the Education level of the colony (if the game ties research speed to how educated your population is, an indirect effect of Learning Centers).

Tech Tree Structure: The technology progression aligns with Development Phases and introduces new capabilities in steps. Early techs provide the basics needed to bootstrap the colony, while late techs unlock end-game content. For example:

- **"Basic Construction Protocols"** – an initial tech that unlocks fundamental Habitation Sector structures [29]. This could enable building the first **Basic Dwellings** and perhaps the **Wellness Post**.

(In the narrative, this represents relearning or uploading basic building blueprints for the new colony.)

- **"Efficient Extraction"** – an early Operations Hub tech that improves resource gathering [29]. It might unlock the ability to build improved Extractors or simply increase extraction rates by X%. This ensures resource production keeps up with colony growth.
- **"Civil Planning II"** – a mid-tier tech (around DP2) that could be required to upgrade the Administrative Spire to Sector HQ or to unlock larger buildings like the **Community Block** housing and advanced services (e.g., Learning Centers). This represents advancing the colony's urban planning knowledge.
- **"Exotic Materials Handling"** – a tech enabling **Processing Plants** and the usage of Tier 2 resources. Without this tech, the player might see exotic resources in storage but cannot process or use them. Unlocking it allows construction of Processing Plants and maybe the gathering of those resources (if certain Extractors require it).
- **"Arcology Engineering"** – a DP3-era tech that unlocks the **Arcology Spire** housing blueprint (and possibly other top-tier structures). It would likely require previous research in construction, materials, and a high Civic Index or population to justify.
- **"Apex Technologies"** – the ultimate tech tier, unlocked only after building all Legacy Structures [30]. These could include revolutionary upgrades like terraforming, anti-gravity generators, or other "wonder techs" that significantly boost the colony. Apex tech serves as a capstone for the tech tree and is extremely costly but game-changing.

Research in Nexus Core is a paced progression: you cannot simply jump to advanced tech without going through prerequisites and having the appropriate phase of colony development. This ensures that, for example, Arcology Spires or Fabricators can't be obtained in the early game, maintaining balance. It also ties the two layers (Hub and Sector) together: some techs unlock Hub upgrades, others unlock Sector buildings, and many will require that the colony has achieved a certain Development Phase or built certain structures (e.g., you might need a Sector HQ and a Learning Center before researching a high-level social tech).

The tech tree is presented via the Command Interface UI, with initial techs available at game start and further techs appearing as prerequisites are met [29]. This system encourages forward planning – the player might decide to rush a tech that increases power output if they are hitting an energy cap, or a tech that improves happiness if the colony is nearing unrest.

Legacy Structures and Endgame Progression

Legacy Structures are the grand end-game projects (analogous to "Wonders" in the original) that serve as victory milestones for the colony [21]. Each Legacy Structure is a monumental construction with unique, powerful effects upon completion. Nexus Core's design includes multiple Legacy Structures built in sequence – you must build the first legacy to unlock the next, and so on [21]. The examples given include:

- **Genesis Monument:** Perhaps the first Legacy, symbolizing the founding spirit of the colony. *Effect:* Could raise the population capacity or Habitation Sector limit (allowing more sectors or more housing) [31], and boost overall happiness (colony pride). Might also generate some Credits income bonus due to tourism or government funding [31].
- **Unity Beacon:** A mid-sequence Legacy structure, maybe a giant beacon or tower that broadcasts the success of the colony. *Effect:* Could significantly increase happiness and unity (less crime, higher

loyalty), and provide a large **income boost** (perhaps attracting trade or new investors) [31] . It might also improve **Specialist efficiency** or recruitment (people are inspired to become specialists).

- **Stellar Forge:** The final Legacy (hypothetical name from example), possibly a massive scientific or industrial marvel (e.g., a forge that can build starships or a portal). *Effect:* Provides a breakthrough benefit such as unlocking **Apex Technologies** [30] , granting a huge **Inhabitant growth rate** bonus (population booms due to the opportunities it creates) [32] , and potentially capping out any remaining resource or power upgrades. Building the Stellar Forge effectively marks the completion of the main progression.

Each Legacy Structure is **extremely expensive** and time-consuming to build, requiring large amounts of resources (including Tier 3 exotic materials), advanced components from Fabricators, and a very high Credit cost. They may also require prerequisite techs (for example, an "Apex Engineering" tech to actually start construction). The idea is that these projects are multi-stage endeavors that the player works towards through the late game. Constructing a Legacy Structure likely involves the Operations Hub and Habitation Sector working in tandem: the Hub churns out materials and components, while the Sector provides the workforce and specialists to assemble it.

Upon completing the final Legacy Structure, the game will unlock any remaining Apex Technologies [30] for the player to research, effectively allowing the player to "complete" the tech tree and see the ultimate upgrades. Finishing all Legacies and Apex techs is considered the end-game state. The design may then offer a **"New Directive"** (New Game Plus) option [33] , where the player can restart with some persistent bonuses or tackle a new challenge using their now proven colony management skills.

Balancing and Post-Endgame: While building Legacies is the main objective, the game will continue to simulate the colony thereafter. Balancing considerations ensure that by the time the player can attempt a Legacy, they have a mature economy and infrastructure. Legacy bonuses, while powerful, are also part of balancing – for example, the growth rate bonus helps fill the last housing structures, the income bonus helps offset enormous upkeep costs in a large city, etc. [34] . The final phase of development focuses on **optimization** – making sure resource production, power generation, and service coverage keep up with the now large population [35] . The player is encouraged to refine their city's efficiency via the **Director's Console** (advanced UI with metrics and analysis) in late-game [36] , though those UI elements are beyond the scope of this mechanics summary.

With all systems integrated – population, housing, happiness, services, economy, technology, and wonders – **Nexus Core** provides a deep colony management experience. This document has mapped each original Mankind mechanic to its Nexus Core counterpart, preserving core gameplay (housing, growth, needs, etc.) while incorporating new layers like influence radius, specialist workforce, power management, and a credit economy to enrich the simulation. All values and formulas are open to tuning, but the structure above offers a clear framework for implementation [37] , ensuring the game's mechanics are both **faithful to the original design** and enhanced by the Nexus Core roadmap vision.

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