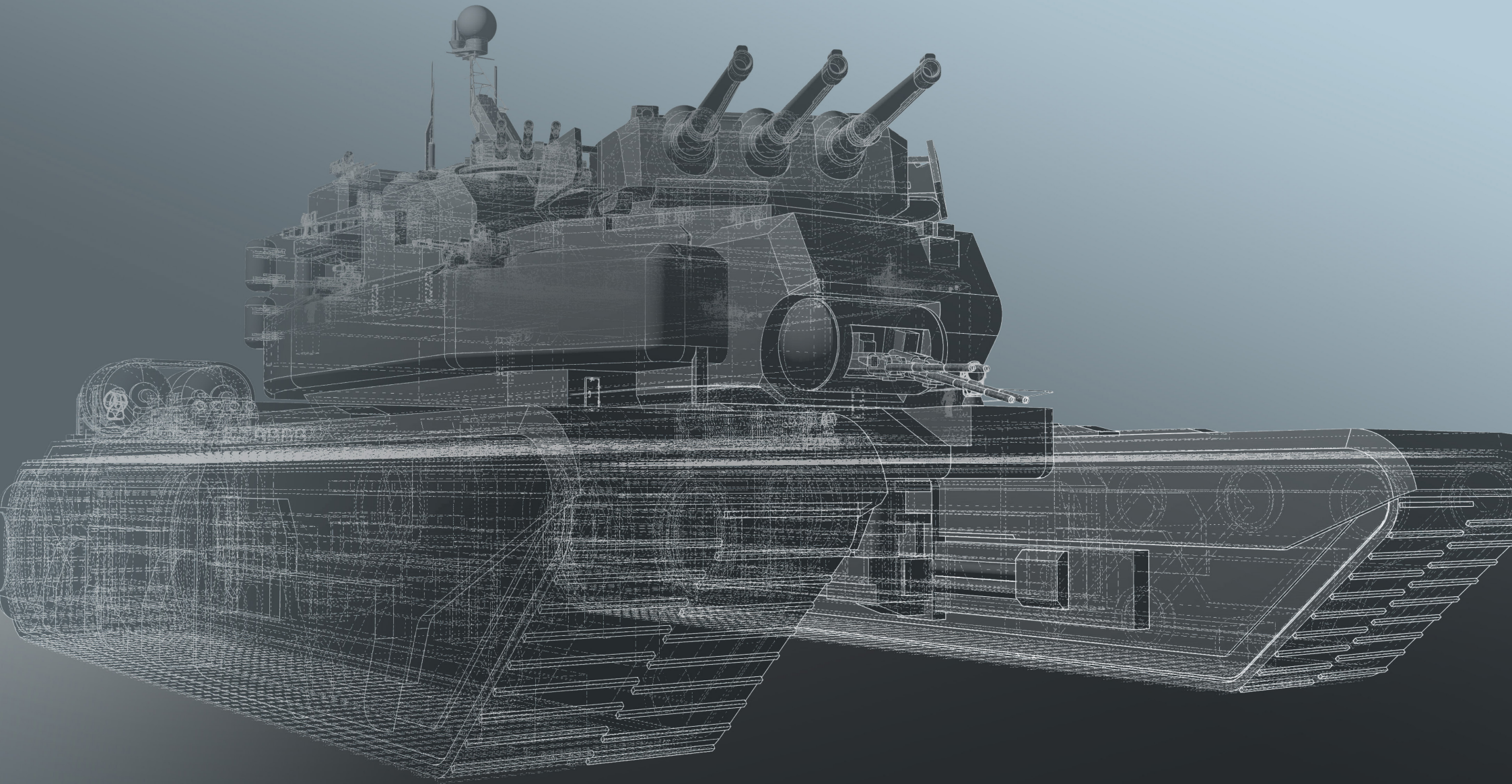# SAND TIDES

A concept design exploration of colonial possibilities
through gameplay and spatial inequality

TABLE OF CONTENTS

ABSTRACT

Representations of off-world colonisation in science fiction often propagate popularised and uncritical attitudes towards how communities and institutions engage in the practice of colonisation. The themes of adventure, freedom and exploration, permeates colonial era propaganda and the national mythos of colonial nations. The mass appeal of adventure, freedom and exploration in video games has simplified the way colonisation is portrayed in video game franchises. The power of colonial institutions, cultural attitudes and how communities respond to unique spatial limitations have unforeseen consequences on communities within the influence of colonial regimes.

Concept design can create new opportunities for layered engagement towards a new, science fiction video game Intellectual Property (IP), where players create emergent narratives about the relationship between colonisation and the regulation of space.

This research proposes a conceptual design investigation to reconcile the mass appeal of colonisation in science fiction influenced video games with the historical outcomes and origins of colonisation.This will be explored through the production and presentation of vehicle designs for an original , science fiction genre, video game property which will demonstrate a synthesis between the properties' in-game mechanics and it's commentary on off-world colonisation lore and world-building which are grounded in historical analysis.

Keywords: Colonial history, spatial inequality, science fiction, concept design, vehicle design, cutaway illustration, video games

INTRODUCTION

Space colonisation is often a key influence within science fiction media. With the recent increase in public interest and private investment into space and space based infrastructure, the concept of a near-future off-world colony is part of the everyday brand DNA of many aerospace companies and organisations. They intend to colonise.

New Zealand has a unique colonial history, being one of the later acquisitions of the British Empire, colonisation by the 1840's was a precision science for the companies representing the Empire. The methods of alienating land and then reselling it were quick and thorough, organising new parcels of land into urban environments designed to industrialise rapidly and begin exporting off-shore.

Management of New Zealand's land and housing through its government institutions has created spatial inequalities which deprives marginalised people by restricting access to services and opportunities (Gilbert, 2013). Housing policy as a spatial practice can create intergenerational damage which can manifest itself in society in often unpredictable ways (Wassenberg, 2013).

The involvement of humans in concentrated amounts, anywhere, living within confined and restricted articles of space, will create uniquely human problems regarding how those humans choose to interact with those spaces. I believe the history of colonisation, and the spatial practices associated with it should be part of how the public contextualises possible futures, and anticipates potential problems for human colonisation off-world. Problems which can not be easily solved through technical solutions.

In particular, this research focuses on spaces, the allocation of space and the representation of space. The research has a specific focus on spatial practices, which are a function of colonialism, and possible responses to those practices, off-world and elsewhere. Using concept design practices, I will develop a series of vehicle designs which explore the relationships between colonisation and spatial practices, and how those two ideas could be represented through the conceptual development phase of developing an original IP, 'Sand Tides'.

I have designed the core visual language and details for key game assets. The design is situated within a series of vehicle designs for three key factions, which focus on the spatial practices of those who inhabit those vehicles, how the allocation of space can be explored through conceptual world-building and as game play mechanics. The designs will represent details about the depth and diversity of the property and how those details are associated with the core themes of the game. Additional technical and conceptual elements such as the use of cutaway renders in spatial design and illustration practices, and the narrative focus of designing virtual spaces will also be applied to the design.

Figure 1. MARSHA Habitat, AI Space Factory

Figure 2. Mars Base Alpha, SpaceX

RESEARCH QUESTION

How can concept design practices be used to create an experience of layered engagement while illustrating the unique game play and cultural offerings of a new science fiction video game property?

RESEARCH METHODOLOGY

Research methods involve the use of ethnographic research and literature reviews to establish a starting point for the project as a creative opportunity for a concept design brief, which will then be resolved through practised based methodology.

The research seeks to draw experience from different practised based methodologies which are relevant in the industries of concept design game development; case studies and literature reviews from the works of design researchers such as Nigel Cross (2011), Dan Saffer (2010), Brenda Laurel (2003), Katie Salen and Eric Zimmerman (2004), are used throughout to aid in the development of a bespoke design research method, which is unique to the constraints of this concept design brief.

This method will synthesise different industry approaches and provide a framework for any practice based research methods. The research will culminate in the application of practice based methodology, specifically concept design practices and techniques that produce a series of science fiction cutaway vehicle designs.
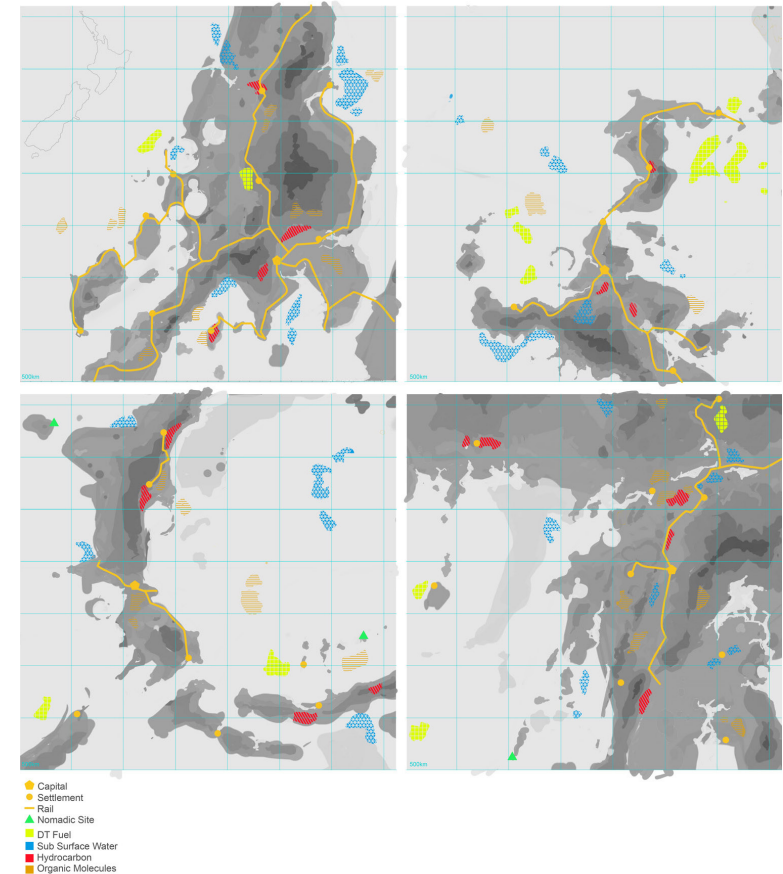
THE PROPERTY

The starting point for this research project was when I took inventory of my personal interests which exist outside my role as a designer. Space colonisation has always been at the top of this list of interests. The recent rise of private aerospace companies has rekindled the public's imagination for a permanent human future in space.

My design research hopes to reconcile the public optimism for space colonisation with the historical contexts of colonisation and spatial inequality, which are other personal interests of mine. The highly polished, architectural renders of potential space colonies avoid the most complex and compelling aspect of such a future; how will lives be affected by life in the restrictive spaces of these colonies? Communities living where physical space is limited and tightly controlled will develop in surprising directions, directions which might seem disobedient to the assumptions an audience has towards what such communities should look like.

The creative development phase has generated a rough outline for an original science fiction video game property which would provide players with a vessel to engage with the limitations of physical space. This property will centre around how your actions as a player affect people at a community level.

Game mechanics such as user customisation and online play would create a platform for players to test each other's assumptions about their allocation of space, and provide fertile ground for the creation of emergent narratives. In this property the key function of colonisation is the extraction and export of financial capital by colonizing powers. Its setting is the planet Maru, a world where urban spaces are expensive investments and are used as articles of control. Gaining freedom from these environments can only be achieved through collective enterprise and by defying established spatial practices. This property's name is Sand Tides

Figure 3. Sand Tides Regional Map

Legend:
- Capital
- Settlement
- Rail
- Nomadic Site
- DT Fuel
- Sub Surface Water
- Hydrocarbon
- Organic Molecules

My central role as a concept designer throughout this research will be focused on the design of vehicles. The vehicles of the Sand Tides property will be central to its game play mechanics. These vehicles will be designed as artefacts from this fictional property, and will define the historical, structural, symbolic, visual and material culture of the planet Maru.

This is grounded in the world-logic which was produced through the creative development process. By defining the boundaries of the world-logic through 'bisociation' (Sanders & Strappers, 2016). These boundaries provide a wide enough latitude for an authentic visual design brief.

Many methods and techniques from my industrial design background were applied throughout the research. The use of Nurbs (Non-uniform rational basis spline) based modelling in Rhino 3D gave me precise control over measurements when designing the vehicles and spaces in a 3D environment. Nurbs modelling was important when designing in a space with common objects such as hardware and furniture. Such objects are a useful visual shorthand for communicating the scale of vehicles and spaces.

Another method which I used from my background as an industrial designer was to produce archetypal personas. This method is typically used to create representative profiles for human centric design (Martin, & Hanington, 2012). Persona profiles in this project took on a more fictional form and were used to define some of the social and personal aspects of possible characters in the Sand Tides universe, and were an important part of the creative development phase.

The visualisation of this research will illustrate a variety of spaces, which will contrast the different cultural contexts of a particular vehicle, or suggest how these spaces might appeal to different player types. Visualisations will also illustrate how Sand Tides might provide players with a large enough virtual space for them to exercise their agency on it, to then experience the unforeseen consequences of how that agency affects the communities inhabiting those virtual spaces.

To provide players with enough virtual space to exercise their agency I designed large vehicles which I defined as 'Landships'. The term 'Landship' was used as it has nautical connotations which provide a basis for cultural rhetoric of the Sand Tides property, particularly in reference to the use of ships as tools of colonisation, trade and commerce. The Landships also appeal to the juvenile fantasy of mine which involves the freedom of controlling large, moving structures. These fantasies are echoed in real-world machines such as the 1959 Soviet Antarctic snow cruiser "Kharkovchanka", and in media such as Thunderbirds (Anderson, 1964), Capitan Scarlet (Anderson, 1967), Homeworld: Deserts of Kharak (Gearbox Software, 2016), and the Mortal Engines Quartet (Reeve, 2001).

Defining the high level brief and identifying the creative opportunity will be completed through practice based research. The synthesis of the unique offerings of the property and its conceptual elements will be completed through what Cross (2011) described as "generative concept". The generative concept has aspects of being "synergistic with, a particular style of working" (2011, 74), and the approach arising from the "designers' chosen domains" (2011, 74). This designer's chosen domain is industrial design, with a focus on manufacturing and how to communicate manufacturing details. The cutaway is an illustrative method that can successfully communicate vehicle concept design, simultaneously with contextual support, manufacturing details and internal spaces.

Figure 4. End of the Road, Thunderbirds, 1965

**Figure 5.** Homeworld: Deserts of Kharak, 2016

Figure 6. Kharkivchanka, 2014

ITERATIVE PROCESS; CONCEPT ART AND VIDEO GAMES

Iterative design in the video game industry typically takes place through play testing "because the play of a game will always surprise its creators, particularly if the game design is unusual or experimental" (Salen, & Zimmerman, 2004). As a concept designer I will to focus on the creative development of this property, and "generate excitement and engagement through evocative visuals that illustrate the unique potential of the property" (Tobin, 2018).

Common documentation for a video game pitch includes a high concept pitch and game design document (Rodgers., 2014). This process differs from concept design and the techniques for client presentation, but these documents will be included in my research with the expectation they will better communicate the design opportunities of the Sand Tides property to a wider audience.
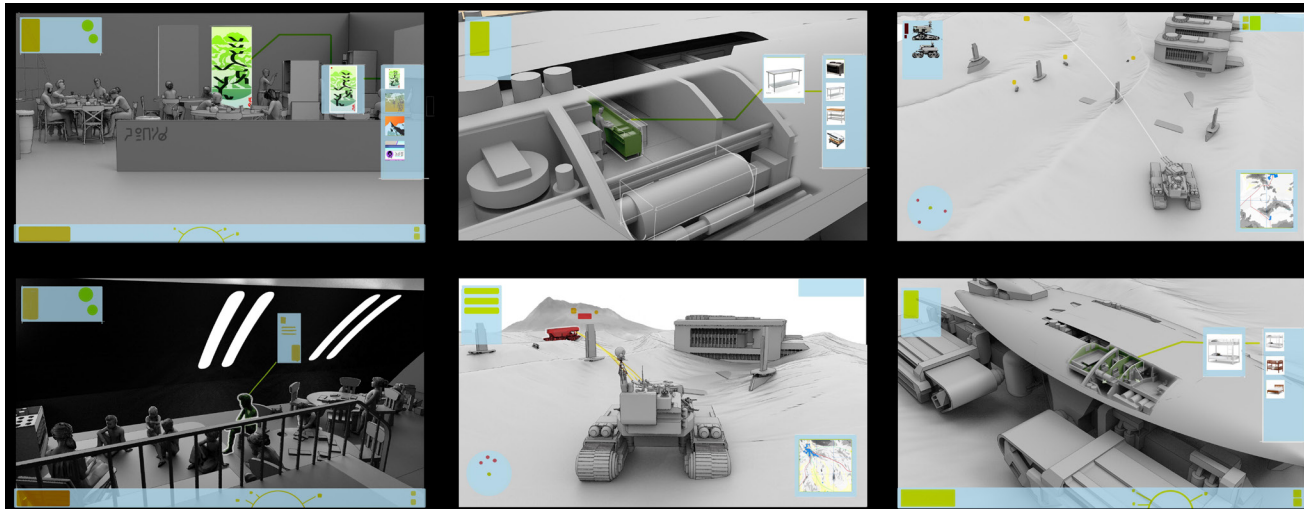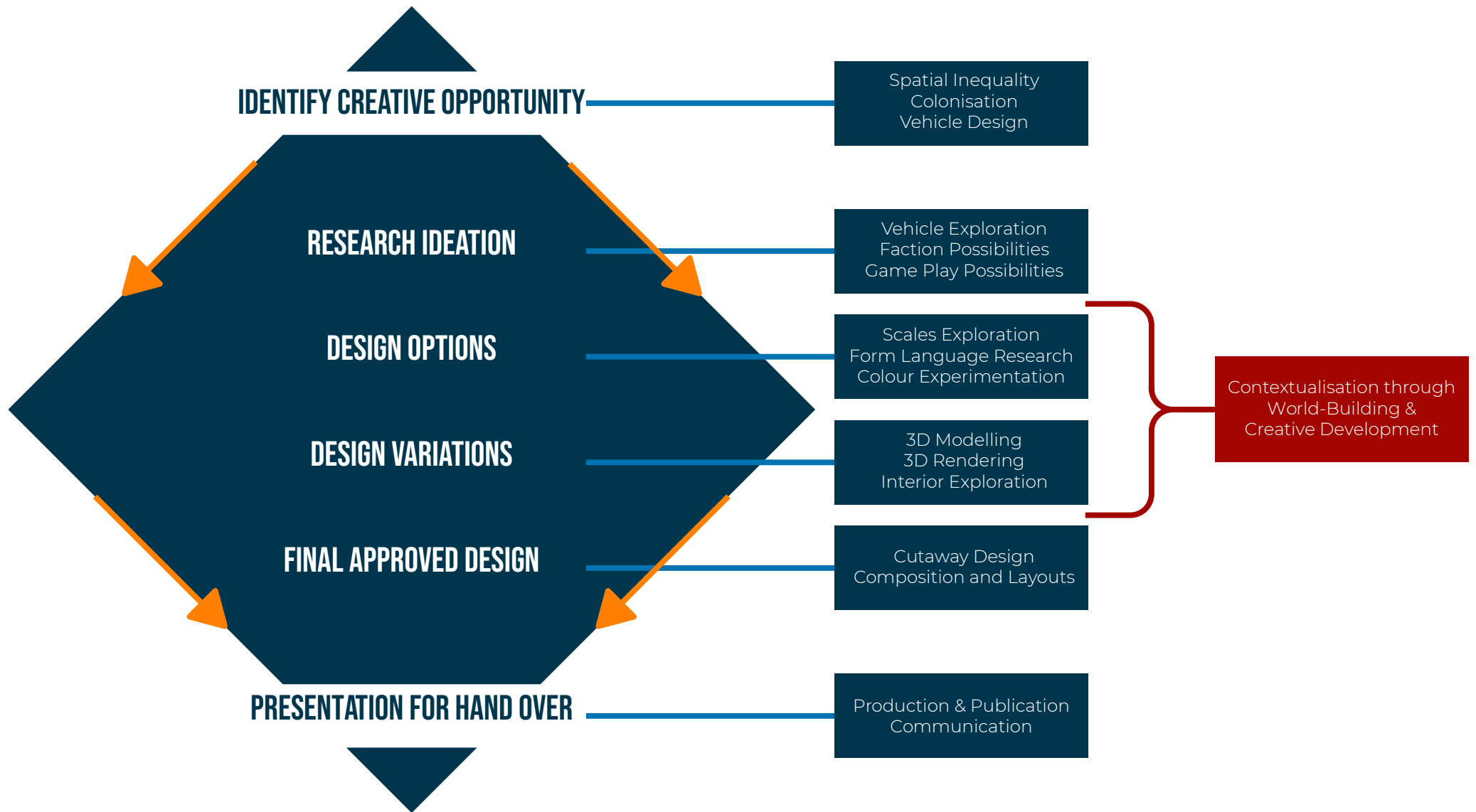

Figure 7. Sand Tides Gameplay Experiment

PROCESS BREAK DOWN

The research and design approach takes the form of the concept design process (Tobin, 2018), where design thinking is focused into a diamond shaped procedure. This process begins with an expansive design research through a widening scope of iterations and options before focusing the possibilities towards a finalized design. I have added an additional phase to this process where the creative development of the property is anchored to the design options and variations phase, where design work is created which informs the world logic and context of the design options.

I have placed the research process of reviewing literature and case studies well before defining the brief. This gave the project the opportunity to begin taking form before any specific design deliverables were decided. It also helped to narrow the focus of the design possibilities by limiting the likelihood of getting drawn into unproductive tangents which did not serve the final design. This did not completely eliminate the possibility of these tangents however, but the process did provide enough direction that much of the design work did serve a function in the production of practice based research. Many of these tangential designs were either incorporated into the finalized designs, or they were useful in contextualising the wider body of work.

IDENTIFY CREATIVE OPPORTUNITY

Spatial Inequality
Colonisation
Vehicle Design

RESEARCH IDEATION

Vehicle Exploration
Faction Possibilities
Game Play Possibilities

DESIGN OPTIONS

Scales Exploration
Form Language Research
Colour Experimentation

Contextualisation through
World-Building &
Creative Development

DESIGN VARIATIONS

3D Modelling
3D Rendering
Interior Exploration

FINAL APPROVED DESIGN

Cutaway Design
Composition and Layouts

PRESENTATION FOR HAND OVER

Production & Publication
Communication

Figure 8. Concept Design Process

CUTAWAY ILLUSTRATION

As a child, the hotly contested items at my school library were the DK books Incredible Cross-Sections (1992), Cross-Sections: Man-of-War (1993), and Incredible Explosions (1996), All are works by the illustrator Stephen Bietsy. Biesty's cutaways are not only informative, full with information of how systems and mechanisms work, they are also charming and delightful for the reader. Hidden amongst the details of Biesty's illustrations are small moments of humour; awkward interactions between characters, areas where the logic of the cutaway is suspended for comedic effect, characters playing hide-and-seek with the reader, and the occasional bits of toilet humour. These humorous details wouldn't add to the comprehension of how a particular cutaway object functions, but they often set the tone of the illustration while creating small narrative elements to engage the reader.

The key precedent informing my decision to use cutaway techniques is the other DK publication; Star Wars: Incredible Cross-Sections (1998), illustrated by Richard Chasemore and Hans Jenssen. Star Wars: Incredible Cross-Sections added new details to the franchise which couldn't be depicted in though the films, such as the mechanisms of ships and weapons, and interior spaces which were not in the scope of a film's story, but were necessary to the world logic of the Star Wars franchise. The added layers of engagement these illustrations gave to the franchise were highly successful and beloved by fans.

Other franchises' produced cutaway illustrations to engage with their audience in a similar way; Serenity: Architectural Cutaway Set (2011) by artist John Mullaney, and Halo: Warfleet (2017), by Hans Jenssen and John Mullaney. These are just two examples that helped to grow audience engagement for their respective franchises.
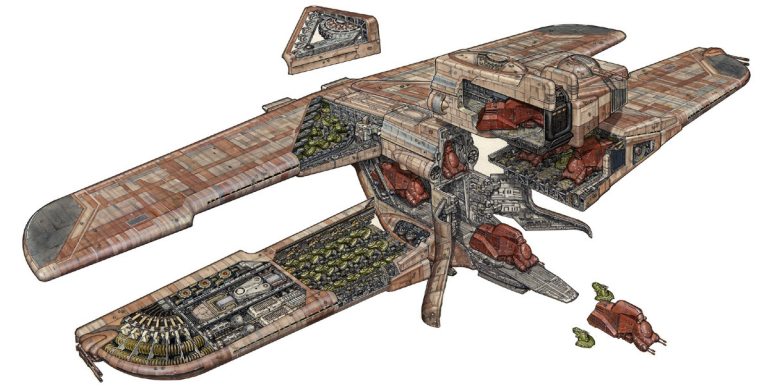

Figure 9. Hans Jenssen, Landing Ship, 1999

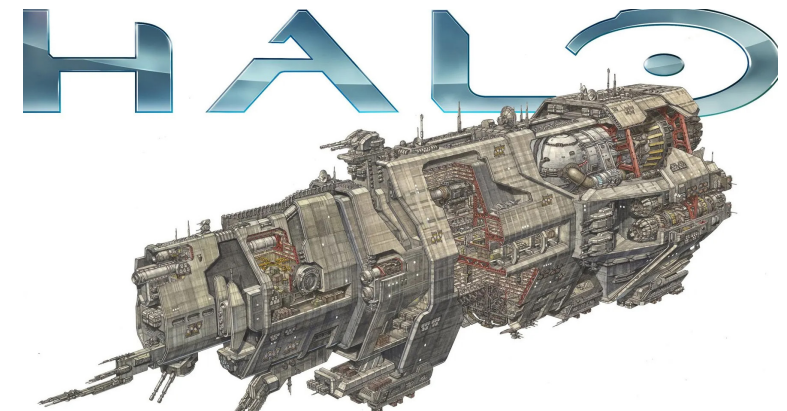**Figure 10.** Serenity/Firefly architectural cutaway

Figure 11. Hans Jenssen, Pillar Of Autumn, 2017

There are different illustrative techniques which fit the description of a 'cutaway'. All of these techniques seek to achieve the same result; to look inside the internals of the subject matter while maintaining the representation of that subject's exterior. The two specific techniques I have used are 'cutaway proper' and 'exploded view', as described by Look Inside (Velasco & Velasco, 2016). Cutaway proper is the method of having components removed, or "peeled off" to reveal interior details.

Cutaway proper can be achieved by strategically removing exterior components or by cutting through an object to expose areas of interior detail. An exploded view is achieved by reversing the manufacturing logic of an object and then separating these objects out into 3D space.

There are different scenarios in the visualisation of vehicle design where these two techniques are appropriate. When exposing large interior details of a vehicle; A cutaway proper effect is achieved by removing external segments to expose things like rooms, interior layouts and set pieces of equipment (Velasco & Velasco, 2016). Exploded view will be applied to objects which have a plausible level of manufacturing detail, so as the object is separated into its components while its form or function can still be interpreted.
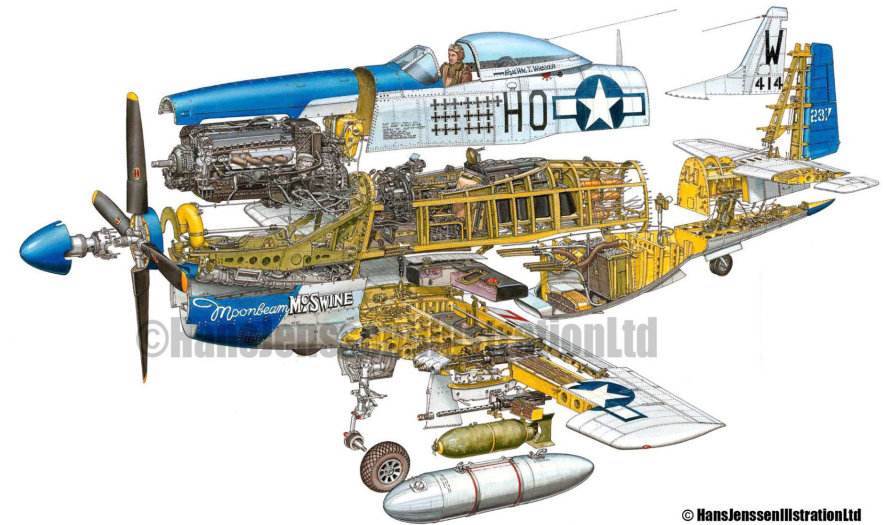
Figure 12. Hans Jenssen. "Sierra Sue" Mustang Exploded View

The nature of cutaway illustrations, with their foundations in technical illustration, means a composition can often include additional information which might be absent from typical vehicle illustration or concept design. Technical information, supporting illustrations and systems diagrams can be included within a single composition. This creates an opportunity to visually explain a broad level of relevant information with a variety of different methods. As a new property, Sand Tides will use this opportunity to simultaneously visualize the conceptual, game play and world-building aspects of the property.

The decision to produce cutaway illustrations serves a dual purpose; It can illustrate to industry how the possibilities of the Sand Tides property might translate into gameplay, and it will captivate an audience which might have interest in the world building and gameplay aspects of the property. Cutaway illustration also leans into my experience as an industrial designer working in the infrastructure and film industries where I produced detailed assembly images for various clients.
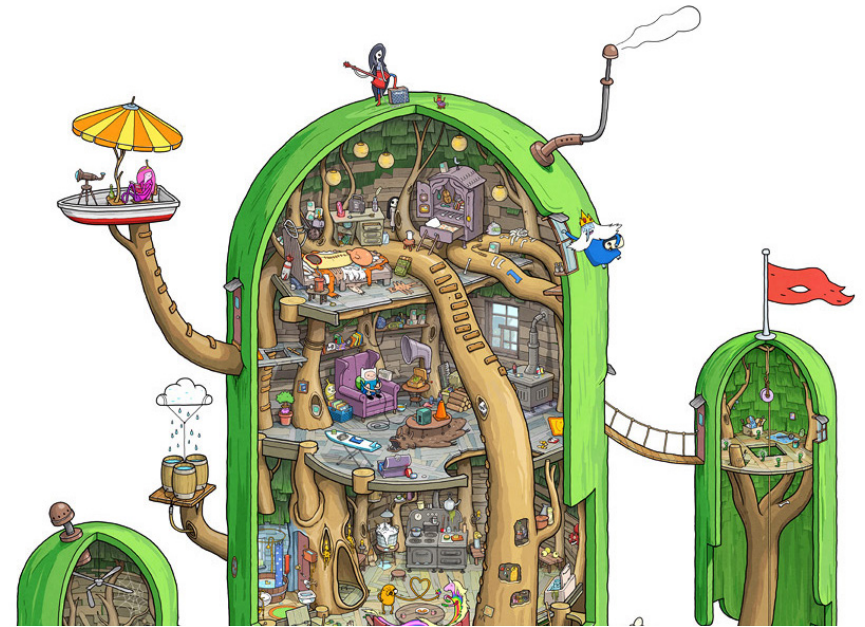
Figure 13. Max Degtyarev. Inside the Tree Fort, 2017

THE WAKEFIELD SYSTEM

Schrader (2016) describes the urban history of early New Zealand through the production of space, spatialising social processes through Henri Lefebvre's 'The Production of Space' (1991). Lefebvre's model described the different modes of production and the different spaces they create, Lefebvre made a distinction between 'representation of space' (plans, drawings, models), and 'representational spaces', "the spaces of imagination, carnival, resistance, subversion and appropriation made by the powerless" (Schrader, 2016). The third element applied by Schrader to his study is what Michel de Certeau calls 'practised space', or spatial practices; how people actualize and experience space in their daily lives.

New Zealand's urban history and the spatialisation of New Zealand began in 1840 with the New Zealand Company alienating economically strategic territory from Maori with the intention of selling it back to urban colonists. The Wakefield system of colonisation was built on the assumption that "Concentration would produce what never did and never can exist without it- Civilization" (Schrader, 2016). During the 18th and 19th Century, this thinking was influenced by Adam Smith, and his theory of history, often called 'stadial theory'.

Since the 1820's, Wakefield had argued that colonists in New South Wales took advantage of cheap rural land to become their own landlords, this dispersed the pool of available labour, limiting the growth of intensive industrialization. This obstructed the growth and profitability of the colony. Wakefield's plan created scarcity to encourage the concentration of people in urban environments. Advertisements targeted colonists, they described how they will have access to urban services they were accustomed to in Britain (such as clubs and societies) in New Zealand, services which could only exist in urban environments with enough density to support them.

Figure 14. New Zealand Company, "Free emigration to New Zealand", 1842

SPATIAL POLICY AND MARGINALISATION

Wakefield and the New Zealand Company hoped to "ship vertical slices of English and Scottish society"(Schrader, 2016).This would guarantee the emergence of urban environments and specialized industries needed to export profits back to New Zealand Company shareholders in London.

New Zealand is certainly not the only colony nation with such an institutionalised focus on how spaces might be used to extract capital. The Wakefield System was unique in its level of precision and totality. The British Empire in the 19th Century had refined the processes with which native land would be alienated and how profit for shareholders could be created.

Urban land had its prices rise wildly at auction, in part because of speculators, and their confidence that a Wakefield-Style, kit-built colony, half-way across the globe would return a profit, and their confidence was high. Any off-world colony might apply the lessons of the Wakefield system in order to generate investment capital and plan their way towards rapid urbanization to facilitate an export economy. Such a colony would provide over priced housing with poor conditions and would deny the spatial practices of marginalised peoples in order to increase shareholder returns.

The Congrès Internationaux d'Architecture Moderne (CIAM), was an influential Congress of Modernist Architects, who's members included Swiss architect Le Corbusier, advocated for egalitarian housing as a means to improve housing conditions for the working classes (Wassenberg, 2013).

Housing developments and housing policy based on CIAM principles continued through the post-war years, often as a response to the migration and displacement caused by the war, and culminated in the high-rise housing estates of urban New Zealand in the 1960s and early 1970s (Gilbert, 2013).

It was in the 1970s that major systemic issues created by these large, egalitarian housing estates became wide spread. The mass produced housing of planned estates failed to provide the range of housing options asked for by the newly educated, upwardly mobile, urban populations, characteristic of the postwar reconstruction. Individualism was the policy for the following decades.

Any decrease in the tenancy would lower the profitability of the estate, while the costs of maintaining spaces and facilities would remain the same. The burden of financing an estate's maintenance would be done by the remaining tenants (Freidrichs, 2011). Rents would increase or maintenance would stop, often the outcome was both. The location of these estates and their declining access to urban facilities often limited employment opportunities and created socio-economic enclaves of marginalised peoples.
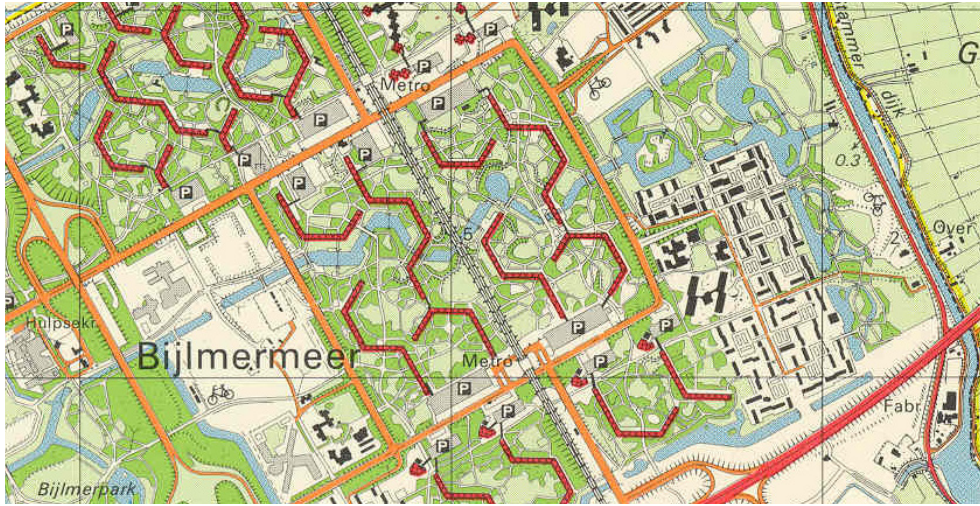
Figure 15. Bijlmer City Original Plan

Figure 16. Bijlmer City

Figure 17. Pruitt-Igoe Ariel View

Figure 18. Pruitt-Igoe Playground

Gilbert (2013) describes the societal outcomes of the urban planning in New Zealand which operated on CIAM principles. Between 1960 and 1968, the New Zealand Government had built 10,500 homes for Maori families and accommodated 25,000 Maori in hostels (Gilbert, 2013). In Wellington and Auckland, multi-unit, high-density housing units were built to reduce costs.

These new housing estates had immediate problems with unemployment, delinquency and the vacancy caused by the same lack of services and opportunities described by Wassenberg (2013). Families with low incomes, insufficient housing and poor access to services, were further marginalised by an "insensitive and ethnocentric curriculum". This leads to the situation of 'multiple marginality', which... "is rooted in racism and cultural repression, as well as in migration patterns that produce enclave settlements within which a low socioeconomic status sees minority groups relegated to society's fringes"(Gilbert, 2013). Marginalisation breaks down formal and informal social controls, this created the "street socialisation" from which many of New Zealand's gangs originated from.

Another example of Government policy and the spatialisation of New Zealand's urban environments at the expense of marginalised groups happened during the 1980s and 1990s. Gangs stopped socialising in public establishments and instead, began congregating in their own clubhouses, a practice that the police apparently encouraged. This limited the presence of gangs and gang violence in urban streets, it had the additional effect of isolating and concentrating gang members.

Deprived of the access to services and opportunities, these gangs... "began to expand to provide for the wider needs of members beyond the ubiquitous fictive kin" (Gilbert, 2013). From within the club house, gangs were growing into more sophisticated organisations, providing some of the services and opportunities (both legal and illegal) which they would not have access to if not for their collective enterprise.

The legacy of large, modernist housing estates and the marginalisation which they produce is common throughout the world. It is another product of policy making which seeks to optimise the use of space, this time by industrialising and homogenising housing ,while denying the variety of different spatial requirements and spatial practices of those who might live in or interact with those spaces. Restricting access to spaces would remove unwanted and underprivileged elements, it would keep them away from the public.

The gangs' response demonstrates the informal nature of how communities living within restrictions will often produce novel solutions to overcome and emancipate themselves from spatial restrictions.

This might also be typical of communities living in off-world colonies where space would be heavily restricted and regulated. This presents a narrative and gameplay opportunity within the world of 'Sand Tides', where the defining of space and spatial practices is used to provide the social infrastructure and fictive-kin necessary to keep your marginalized community united and prosperous.

GAMES AS CULTURE

The allocation of space is a common gameplay mechanic in life simulation and real time strategy games (RTS). These games often require the player to control and exploit spaces to achieve certain victory conditions. Or, alternatively, the player is required to use spaces as a canvas to express their values, and are then challenged by uncertainty which arises from the outside factors which influence the virtual inhabitants of those spaces.

Will Wright, the creator of The Sims (Electronic Arts, 2000) and SimCity (Maxis, 1989) was asked about whether he puts his values into his games, he responded by answering "I'm actually much more interested in building a vessel that players put their own values in."(Laurel, 2003). Wright also described how the vessels he built could be used as a reference point for players to discuss their own values based on their assumptions going into the game.

When discussing the conversations which took place on the SimCity online forums, Wright mentioned some of the values based discussions players would have; "Oh I think this city is too liberal in the way taxes are done". Or "I don't think so, I think it's realistic compared with where I live." Players would use the game as a platform to communicate what their assumptions were. This doesn't mean that Wright designs games which are devoid cultural commentary, The Sims includes a subtle statement about the unforeseen costs of consumerism; "If you buy stuff in The Sims – every object has some sort of trait – it can go bad, or break, need maintenance, need to be watered... And it's actually kind of a parody of consumerism, in which at some point your stuff takes over your life" (Laurel, 2003).

Figure 19. The Sims 4 Screenshot, 2020

Figure 20. Sim City 2000 Screenshot

CULTURAL SCHEMA

This commentary on consumerism arises from the game play mechanics of acquisition and its relationship with the cultural rhetoric of the game's suburban setting, "The Sims is not merely a simulation of suburbia, but a representation of cultural interaction that relies on an ideological reality located beyond the scope of actual game play" (Salen, & Zimmerman,2004).

Providing players with a vessel to express themselves and to discuss their different assumptions, while alluding to the designers commentary towards particular issues, is what I hope to achieve within my design exploration.

Designing the Sand Tides IP with a cultural schema that speaks to the core themes and values of the game will illustrate the property's potential for meaningful play. The values of the property are informed by the core themes of spatial inequality and colonisation, which are explored in the literature reviews and have driven the creative development and generative process.

Cultural rhetoric in gameplay is something that exists on the outside of a game and its rules. Its purpose is to provide players with a "method of discussion or expression that contains underlying values or beliefs" (Salen, & Zimmerman, 2004).
For a designer, developing cultural rhetoric though game play requires more than designing evocative and authentic imagery through the combination of visual metaphors, historical analogies or symbolism.

Cultural rhetoric through game play requires setting out how values and beliefs are represented through the rules of a game.
A game designer needs to consider how they are propagating particular values and beliefs in regards to how their audience will interact with that game (Salen, & Zimmerman, 2004).

To explore how video games assert their cultural rhetoric through game play I have provided case studies on the cultural rhetoric of two games with similar thematic foundations to Sand Tides. These games have used rules and game mechanics to reinforce and propagate their values and beliefs. The games are; Offworld Trading Company (Stardock, 2016), and Frostpunk (11 Bit Studios, 2018).

OFFWORLD TRADING COMPANY

In the real time strategy game Offworld Trading Company (Stardock, 2016), you play as the director of a corporation which is tasked with establishing a base on Mars, and extracting then processing resources to sell on the open market.

The rules of the game restrict the player's access to these resources by limiting the number of resource tiles available to them. Players strategise by playing to the advantages of the resources they have access to. This can be achieved by; optimising how they process these resources, restricting other players' access to resources, manipulating the market price of certain resources, or engaging in underhanded acts of covert sabotage against opposing players. The market value of resources is affected by the actions of other players and through random events, it is constantly fluctuating, thus creating a system of uncertainty. The victory condition of Offworld Trading Company is to accumulate money through the selling of resources, then buying a majority stake in each of the other players' companies. A player subjected to a hostile takeover is removed from the game.

The game play mechanics and language of Offworld Trading Company is highly capitalistic, its victory conditions encourage players to engage in corporate warfare, without regard for how their actions might affect the inhabitants of the fledgeling Mars colonies, colonies which your company is supposedly there to support.

Figure 21. Offworld Trading Company Screenshot, 2016

The game does not explicitly address the amoral nature of capitalistic exploitation in a colonial setting however, rather it is evident in the choice of mechanics and language. The colony which a player supports might even be perceived as an inconvenience, as they occasionally hold auctions for access to new resources, implying that it's the local inhabitants which are restricting the players' desire for unchecked exploitation.

The cultural rhetoric of Offworld Trading Company resonates with the historical precedent of colonisation, and how it industrializes spaces and exploits natural resources for the creation of capital with little regard for any wider, sociological implications.

Figure 22. Offworld Trading Company Screenshot, 2016

FROSTPUNK

Frostpunk (11 Bit Studios, 2018) begins with a climate apocalypse, players use city building mechanics to keep the inhabitants of the last surviving city healthy, warm and alive. Players collect resources and expand their city to accommodate the growing number of climate refugees which are fleeing towards their city.

Providing warmth consumes limited resources, so players must make decisions about which spaces will be provided sufficient warmth and which spaces will be sacrificed to the cold. As conditions worsen, happiness falls and discontent grows. To affect discontent, players can introduce new laws which will affect the moral trajectory of the city. Will a player legalise the use of child labour to boost resource output? Will they consume precious resources to provide injured workers with prosthetics? Will the player enforce order in the city by creating authoritarian or theocratic institutions?

Frostpunk adds challenging gameplay mechanics to Wright's model of providing a vessel for players to express their values. The victory condition for Frost Punk is to survive. A player could potentially build a city that expresses their values and assumptions on how such a city should operate, but the systems of uncertainty, and the value of human lives will create scenarios where players are forced to make difficult decisions about how they assess their values against the game's victory conditions. The cultural rhetoric defined by the mechanics and victory conditions of Frost Punk suggest that leadership decisions in a crisis are morally difficult, they have uncertain consequences, and those decisions may have to contradict a players' values if there is any hope of survival.

Figure 23. Frostpunk Screenshot, 2018

Figure 24. Frostpunk Screenshot, 2018

CULTURAL RHETORIC IN SAND TIDES

The game play of Sand Tides will centre around a player's decisions about the allocation of space, and the nautical connotations that come from the term 'Landship'. Players will be required to pay attention to things such as their Landship's crew, hull thickness, displacement, watches, speed, heading and allocation of deck space.

These spaces might manifest as private, working or 'Third spaces' (Oldenburg,1989) and 'Social Infrastructure' (Klinenberg,2018). The communities which inhabit these spaces will be the deciding factor for whether a player will achieve the game's victory conditions, and not the spaces themselves.

The cultural rhetoric will focus around how communities interact with restricted spaces in a world where colonial powers exploit people and resources in the service of generating interplanetary capital. Victory conditions for certain game types might include the transportation of colonists, the protection of trade routes or the prevention of munities.

BRIEF

The practice based research requires producing a series of illustrated vehicle cutaways which synthesise the contextual, game play and concept design components of the Sand Tides video game IP, in order to create an experience of layered engagement and understanding of the new IP and it's unique offerings.

Conceptual components include:
　　Colonisation
　　Allocation of space
　　Spatial inequality

Game play components include:
　　Emergent narratives
　　Player customization
　　Player type (Bartle Taxonomy)
　　Virtual spaces
　　Cultural rhetoric
　　City building and life simulation mechanics

Concept design components include:
　　Vehicle design
　　Layered engagement
　　Creative development
　　World building
　　Concept Illustration

Each of the two finished cutaways will illustrate different aspects of the property's conceptual and game play components, with concept design methodology being universal throughout. Two key factions and one adjacent faction will be used to illustrate these different aspects and the unique opportunities they provide. The two key factions are the Vara Republic and the Athos Alliance.

The Commonwealth faction are the property's main antagonists, they stand apart as an aggressive force, and a stand-in for the colonial ambitions of the former British Empire.

Each faction will have a distinct visual language, derived from the function which that faction serves within the world-logic of the property. The cutaways will focus on a set of key contextual and game play components, with a variation of those components being allocated to a particular vehicle.

	COMMONWEALTH	VARA REPUBLIC	ATHOS ALLIANCE	
FUNCTIONS OF SPACE/ OLDERNBERG. R & KLIENBERG. E	Private/ Home	Utility/ Work	Public/ Third Space	Each aspect about the allocation of different spaces as a function of gameplay, in the concept of spatial allocation. *The Great Good Place* (Oldenberg) & *Palaces for the People* (Klienberg)
BARTLE TAXONOMY	Killer	Explorer	Socialiser	Using the Bartle Taxonomy of player types as a means to contrast different approaches to gameplay.
SCIENCE FICTION & FOUCAULT, *'OF OTHER SPACES'*	Utopia	Dystopia	Heterotopia	Michel Foucault's *'Of other spaces: Utopias & Heterotopias'* describes the relationships between spaces and their meanings. I will use examples of the three in science fiction as a basis to subvert the audience's expectations of these spaces.
HUMOUR	Wit or Wordplay/ Satire	Black/ Slapstick/ Deadpan	Self-Deprecating/ Parody	Based on combinations of the nine forms of comedy commonly accepted by writers. Stephen Bitsey's *DK Incredible Cross-Sections* often included images of slapstick or toilet humour. This will also set the tone for the project through world-building flavour text.

Figure 25. Faction Values Table

PRACTICE BASED RESEARCH

What follows is the practiced based research which progresses through the diamond shaped concept design process. As Sand Tides is a new property, much time was spent designing details through a creative development process. These details supplement the final design by illustrating the world logic and locations of the planet Maru, which is the setting for the game. These designs include elements of the visual language of each faction, as well as maps and possible fictional locations which could be used to develop narrative and gameplay opportunities if the property were to enter production.

VIDEOGAME 'ONE SHEET'

The following is a breakdown of Sand Tides and its potential offerings as a videogame. The structure is based on Scott Rodgers (2014) 'One Sheet'. The function of a 'One Sheet' is to provide key information to a team working on the development, marketing and licencing of a videogame.

Sand Tides
Game OS/ Platform: PC, digital distribution
Target Age: 13+

Game summary: The planet Maru is a harsh, alien wasteland. Communities which have fled the oppressive conditions of its cities choose to live aboard Landships. Manage the spaces within your Landship to best accommodate your crew, then head out and explore the vast, arid badlands of commerce and greed which cover the planet Maru.

Game Outline:
Sand Tides gives players command of a Landship, their two responsibilities are; to provide a space for their community of crew to live, and to provide them with employment opportunities to encourage them to continue living there. A player can choose to customize their Landship, inside and out. A player can decide whether they will or will not tolerate certain behaviors onboard. The player can choose whether the living they earn will be legal or illegal. There are many different opportunities across the Sand Tides of Maru, and it's the player's choice which of these opportunities are in the best interests of them and their crew.

Unique selling points:

Landships are the player's unique, personalized vehicles the size of a ship.

Multiplayer competitive and cooperative gameplay.

Vehicle interior and exterior customization and item creation.

First and third person combat and exploration.

Explore large maps, extraterrestrial urban environments, and Landships of other players.

Story modes which expand on the lore of the Sand Tides universe.

Similar to The Sims, if your house was a giant truck in a neighborhood of giant trucks, on an alien world.

Similar Competitive Products: World of Warships (2017), The Sims 4 (2014), Cities: Skylines (2015), Homeworld Deserts of Kharak (2016), Frost Punk (2018).

IDENTIFYING THE CREATIVE OPPORTUNITY

The creative opportunity for the Sand Tides property begins with the conceptual elements of the brief which are: colonisation, the allocation of space, and spatial inequality, as described in the literature reviews of this exegesis. These three conceptual elements are synthesised into a creative opportunity with the application of vehicle design and cutaway illustration techniques. These cutaways provide an illustrative description of possible game play mechanics such as city building and life simulation, as well as exploration through vehicle control and first person mechanics.

RESEARCH IDEATION

The early vehicle design exploration focused on developing a workable process for combining 3D modeling and exterior vehicle illustrations. This helped to begin defining the scope and scale of the Landships which players would captain in the game, as well as providing a starting point to refine my vehicle design workflow. Working with 2D profile drawings of Landships, I began to iterate on different form languages for each faction. This was done to create a visual distinction which would make the factions easy to recognise in a virtual setting
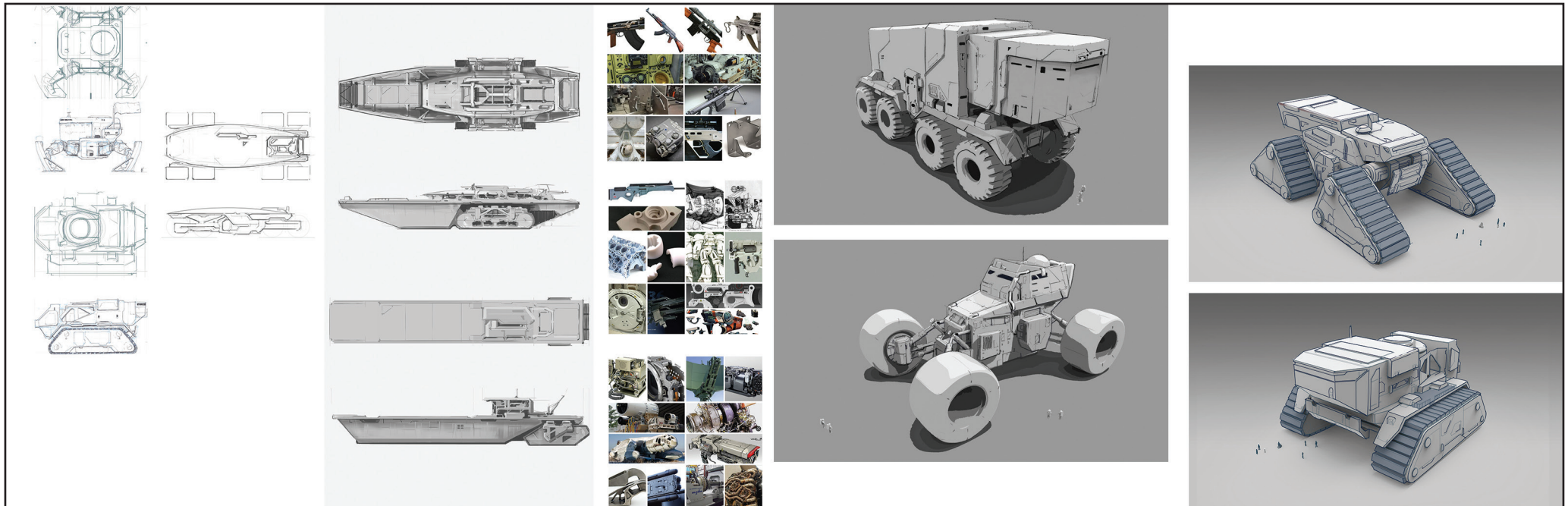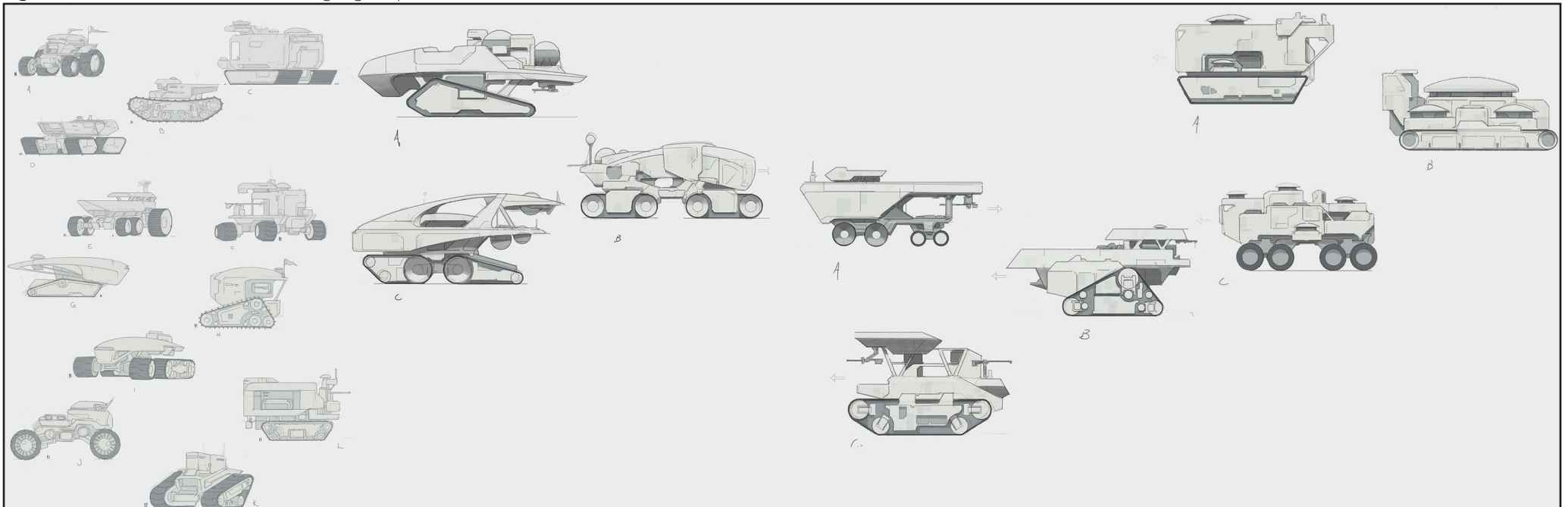

Figure 26. Sand Tides Early Vehicle Experiments

Figure 27. Sand Tides Faction Form Language Experiment

Figure 28. Faction Form Language Profile Experiment

DESIGN OPTIONS

I began exploring the opportunities of the property with very broad strokes through the creative development of the locations, world-logic and visual language of the planet Maru. The exact function of the design options which came from the creative development was not immediately apparent, but they were important for illustrating the nature of the world and to provide the context which the final vehicle designs would exist within. The form language of each faction's vehicles were iterated further so their individual designs would continue to diverge from one another.

I ran a parallel process of designing logos, icons and a fictional script for each faction. This was so the divergence of each faction would be visually apparent on macro scale with the Landships and locations, and at the micro scale with what types of assets and ephemera might be found within the Landships.
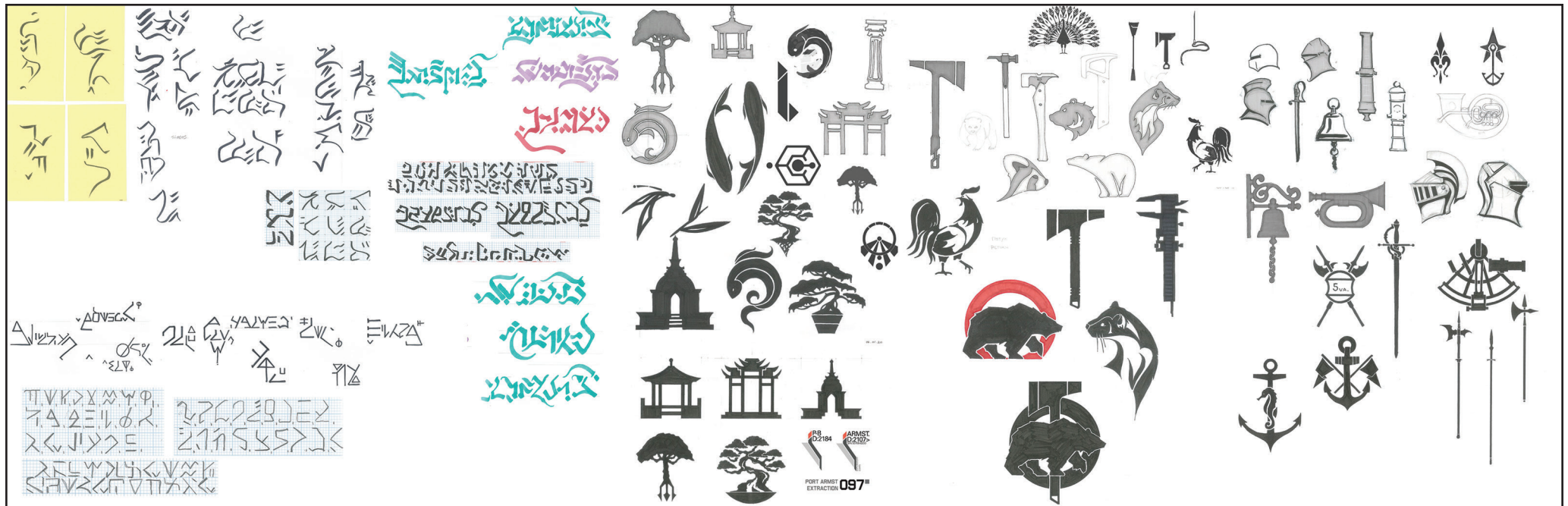

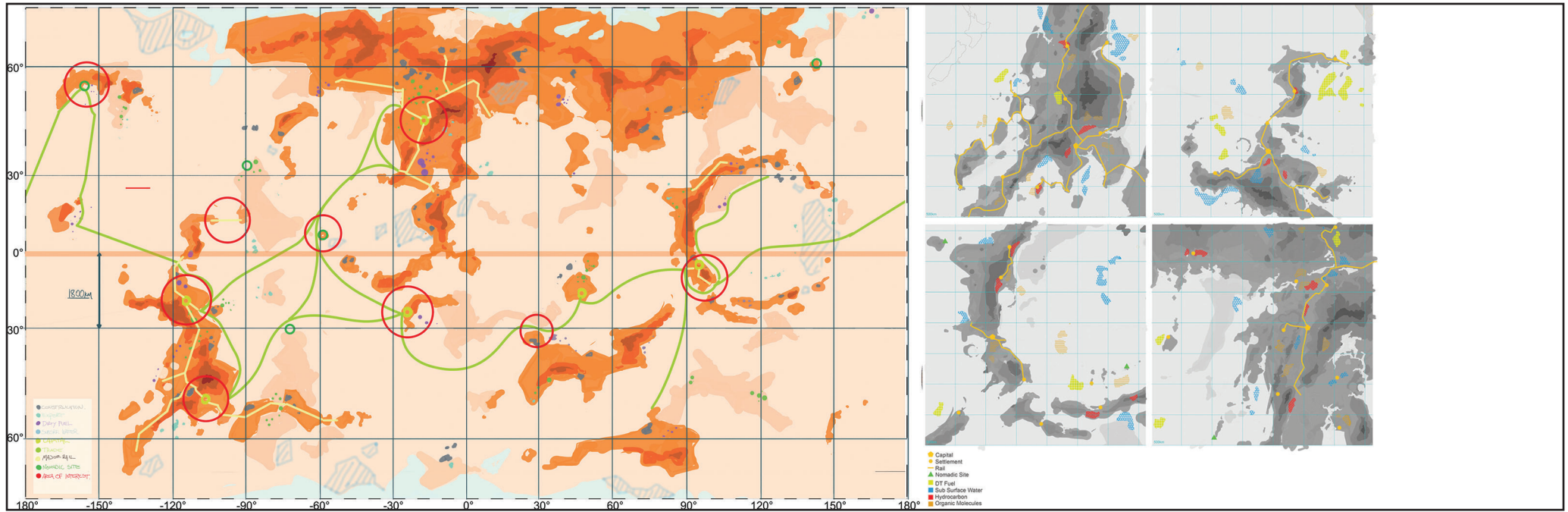**Figure 29.** Faction Script & Iconography Sketches

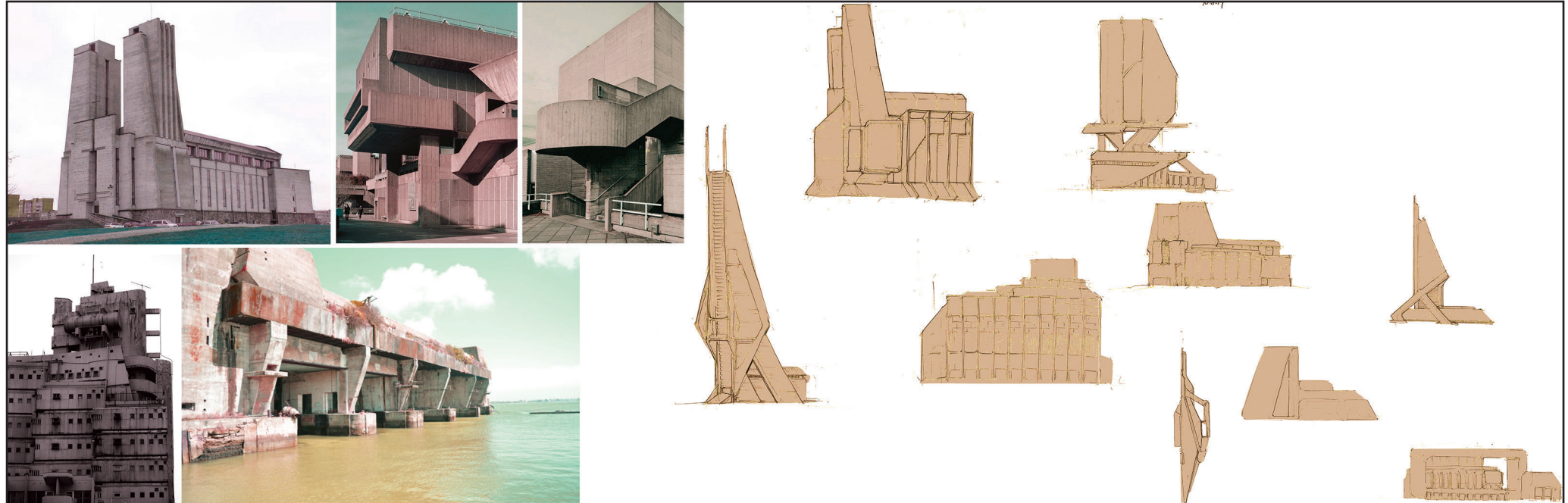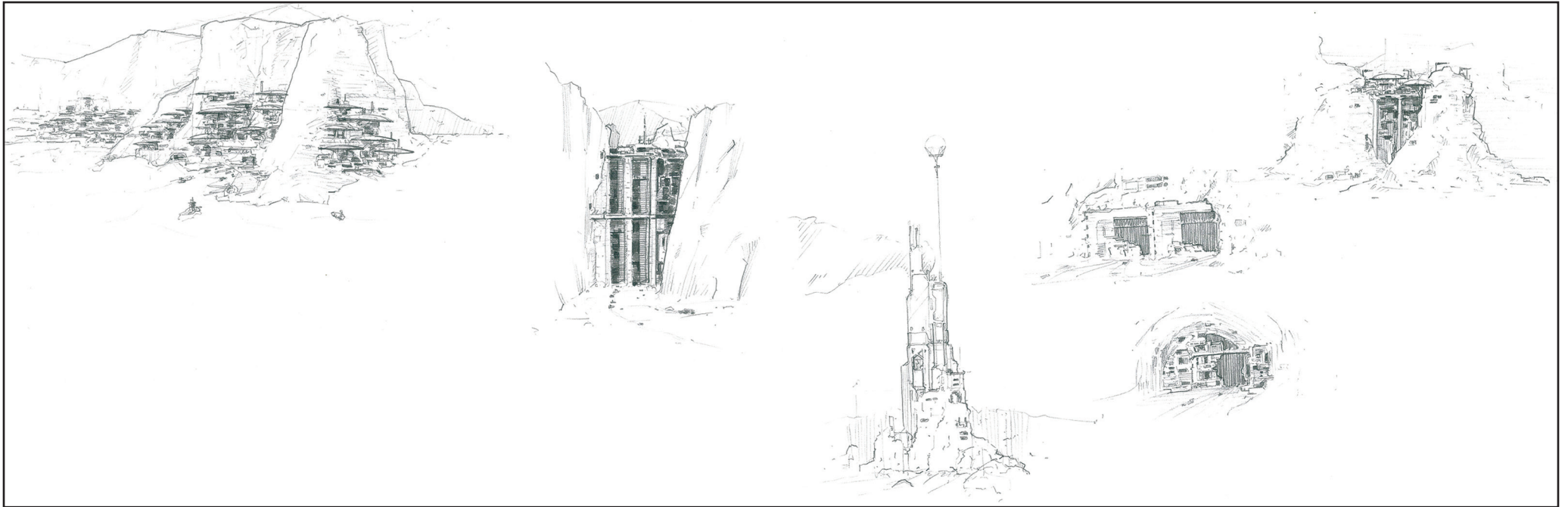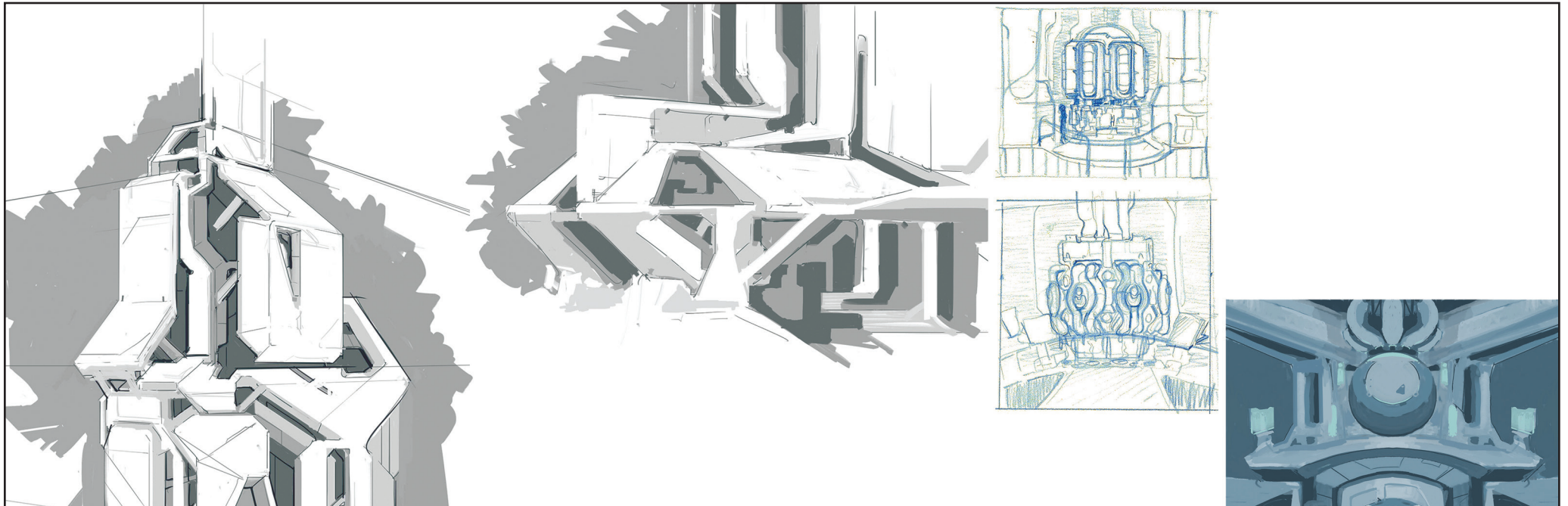**Figure 30.** Sand Tides World & Regional Maps

Figure 31. Sand Tides Brutalist Structures Sketches
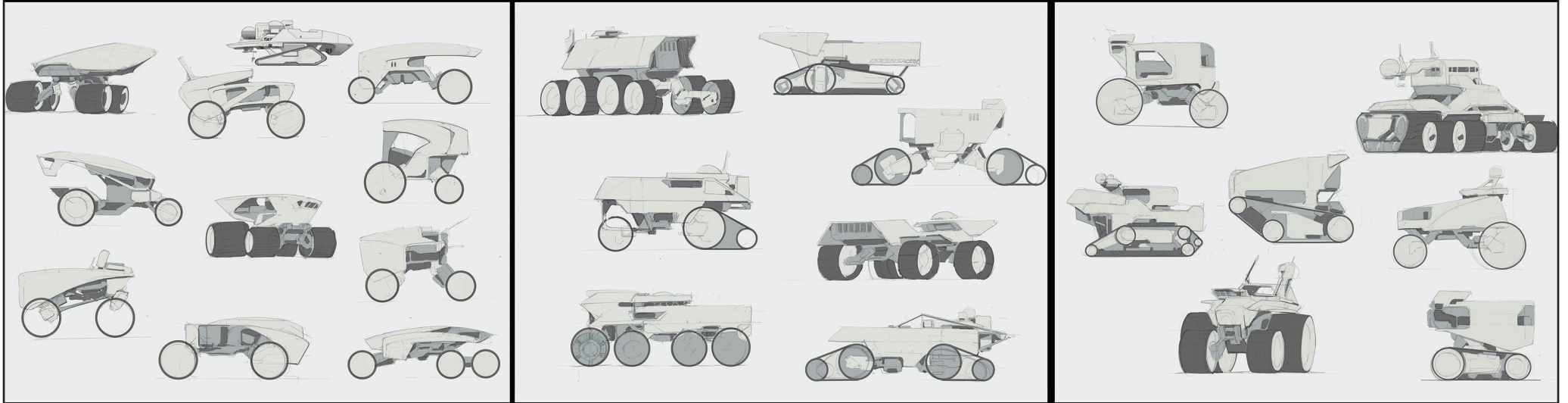
Figure 32. Sand Tides Urban Environment Sketches

Figure 33. Sand Tides Infrastructure Sketches

Figure 34. Sand Tides Corvette Profile Sketches

DESIGN OPTIONS: CHARACTER PERSONAS & LANDSHIP CRITERIA

Character personas were used as part of the creative development process, and as a creative writing exercise. This further expanded on the world-building by providing a diverse scope of characters with differing experiences. They also helped to suggest an overall tone for the property as a whole.

The Landship criteria sheets list the type of metrics which each Landship might be measured against in game. Combined with the allocation of space, some of the criteria such as safety rating and insurance provider might affect a player's decisions based on their individual values and what outcomes they desire for their Landship and its crew.

Lian Ch'ien

. Background/Occupation: Athos born, corporate executive

. Location: Panay Central Business District.

. Age: 33

. Sex: Male

. Strongest personality traits: Organized, focused, perceptive, cunning.

. Weakest personality traits: Manipulative, selfish, domineering.

. Needs of the character: Loyalty, recognition, information.

. Ambitions: Personal growth through corporate dominance.

. Physical appearance: Slender, strong jawed, beady eyes, thin mouth.

. Interests and hobbies: Weapons collector and design connoisseur.

. Pets: None

. Education: Bachelors in business strategy and information security.

. Religion: Secretive Mystic.

. Financial situation: Very wealthy.

. Future plans: Become CEO through promotion or a corporate coup d'état.

. How does the character handle conflict: With intimidation and extortion through his intermediaries.

. What is standing in the character's way: All the other smiling assassins in upper-corporate.

. What are the character's prejudices: Indifference towards the common people. Sees the Commonwealth and the federation as foreign, cultural fossils from off-world.

. What is their neighborhood like: Isolated, gated, wealth and modern.

. What is the character's philosophy on life: Trust no one.

. What is the character's family life like: Alone, twice divorced, one estranged son.

Figure 35a. Sand Tides Character Persona Lian

Robyn Synclair

. Background/Occupation: Industrialist's wife, born on Black Rock, Regnium Superior

. Location: Port Viscount

. Age: 41

. Sex: Female

. Strongest personality traits: Polite, supportive, warm demeanor, ambitious.

. Weakest personality traits: Jealous, un-trusting, stubborn.

. Needs of the character: Wealth, social status, respect.

. Ambitions: Be seen as a model wife, to advance her husbands commercial interests.

. Physical appearance: Buxom, beautiful.

. Interests and hobbies: Court drama, fashion, interior design.

. Pets: A rare, red panda named Albert.

. Education: Private girls school and finishing school.

. Religion: Practicing mono-theist.

. Financial situation: Very wealthy and greedy.

. Future plans: Political and economic dominance through her attachment to her husband. Elevate the position of her family in high society.

. How does the character handle conflict: Through her social and political connections, never directly.

. What is standing in the character's way: The other ladies of the court and the her husband's occasional episodes of ethical behavior.

. What are the character's prejudices: Hatred of the lower classes, suspicions of everyone and has a patronizing attitude to those she grew up with.

. What is their neighborhood like: Very wealthy and isolated.

. What is the character's philosophy on life: Eat or be eaten.

. What is the character's family life like: Husband and two sons. Idyllic on the outside but transactional on the inside.

Figure 35b. Sand Tides Character Persona Robyn

Hella Borodina

. Background/Occupation: Child of first generation Shatterfield settlers. Phosphate mine supervisor.

. Location: Shatterfield dig C47, west of Smolney

. Age: 29

. Sex: Female

. Strongest personality traits: Alert, situational awareness, safety conscious, natural leader.

. Weakest personality traits: Short tempered, uneducated, respiratory illness.

. Needs of the character: Family, employment, medicine.

. Ambitions: Provide for her family.

. Physical appearance: Muscular, weary, short haired, dirty.

. Interests and hobbies: Chess, amateur robotics.

. Pets: One illegal, stray cat called Onions.

. Education: State primary school & first aid through the colonial militia.

. Religion: Unbeliever personally but is raising her kids as orthodox.

. Financial situation: Working poor.

. Future plans: Live long enough to see her children find a better life.

. How does the character handle conflict: With rapid and decisive violence.

. What is standing in the character's way: Ill health and widespread poverty.

. What are the character's prejudices: Hatred of the Commonwealth, distrust of all power structures.

. What is their neighborhood like: Poor, improvised and crime ridden.

. What is the character's philosophy on life: We're all walking corpses on borrowed time.

. What is the character's family life like: Husband killed during a riot, raising her stepson and biological daughter alone. Very poor but still supportive.

Figure 35c. Sand Tides Character Persona Hella

Amara Bagchi

. Background/Occupation: Third generation Athos native. Stevedore at the Prefecture Port.

. Location: Panay Trade Prefecture

. Age: 41

. Sex: Male

. Strongest personality traits: Humorous, hardworking, friendly.

. Weakest personality traits:Stubborn, suspicious of outsiders.

. Needs of the character: Friends, family, local beer.

. Ambitions: Add an extra room to his home, get a job behind a desk.

. Physical appearance: Strong, heavy build, tattoos.

. Interests and hobbies: Skiff racing, fitness, meteorology.

. Pets: One family parakeet called Biscuit.

. Education: High school drop out.

. Religion: Spiritualist.

. Financial situation:Secure working class.

. Future plans: Get his children through college.

. How does the character handle conflict: Words then swift actions.

. What is standing in the character's way: Inequality and housing restrictions within the prefecture.

. What are the character's prejudices: Suspicious of the well off and immodest. Despises Commonwealth arrogance.

. What is their neighborhood like: Close knit, working class, diverse, dilapidated and rundown.

. What is the character's philosophy on life: Don't get too excited; I've seen much worse.

. What is the character's family life like: Wife, two daughters and a son Warm, loving and supportive.

Figure 35d. Sand Tides Character Persona Amara

Mary Ellen Lovely

. Background/Occupation: Privateer, pirate, Hyberica local.

. Location: Western trade routes.

. Age: 28.

. Sex: Female.

. Strongest personality traits: Aggressive, fearsome.

. Weakest personality traits: Ignorant, short tempered, unpredictable.

. Needs of the character: Booty, respect, credit, top self pharmaceuticals.

. Ambitions: Uncontested command of the western sands.

. Physical appearance: Portly, baby faced, scarred.

. Interests and hobbies: Painting historical figurines.

. Pets: Kookaburra.

. Education: High school drop out

. Religion: Non practicing mono-theist.

. Financial situation: Wealthy (for a pirate).

. Future plans: Be accepted and respected by polite society.

. How does the character handle conflict: With extreme violence.

. What is standing in the character's way: Social stigma of her upbringing and the rough company she keeps.

. What are the character's prejudices: Despises the wealthy, belittles the intelligent, obsessed with Commonwealth culture.

. What is their neighborhood like: Lives onboard her own ship. Her quarters are orderly but the rest of the ship looks like a crack house.

. What is the character's philosophy on life: Live, Laugh, Love.

. What is the character's family life like: Destitute criminals.

Figure 35e. Sand Tides Character Persona Mary

Landship Vehicle Criteria

Registration Details

Ship's name	Abyssal Spirit
Captain's name	Lieutenant Commander Lydia Natsuho
Operating under license of	Athos Border Patrol, 11th Squadron
Port of registration	Fort Redcliff

Specifications

Classification	*Stalker* Class Patroller
Manufacturer	Nintai Recon-Tech Corporation
Hull length	72m
Weight	3,200t
Nominal hull thickness	76mm
Souls aboard	9 Crew and Officers (rated to 16 max)
Maximum range	3,700km
Speed	67kph Cruising, 79kph Max

Critical Systems

Generator	Teng Ignition Research, '*Rapidex*' Fusion Drive with military type Thermal Discharge Assembly
Operational machine intelligence	D4 '*Caretaker*' Immediate Response, Integrated Tactical Intelligence
Offensive systems	2x Multi-Role Tactical Launch Tubes, 3x 32mm Swivel Repeater Cannons, 1x Plasma Arc Main Gun
Defensive systems	2x Dual Band Laser Close-In-Weapons-System (CIWS), 2x Long Range Interceptor Launchers, 2x Reactive Arc Destabilization Generators
Onboard facilities	Informal Garden (non sustaining), Bar/Galley/Entertainment Suite, Equipment Fabricator, Workshop, Sickbay
Deployable craft	6 Unit Drone Bay

Legal Certifications

Insurance provider	First Athos Bank	
Coverage type	Full Engagement Protection	
Insurance rating	760 points	
	*notes	• Full redundant defensive suite • Group operations certified • Certified weapons and safety training • Modern hull model
Safety rating	A	
	*notes	• High-tech crew sustainment systems • Positive enemy engagement record • Certified personal protection protocols • Combat engagement liability

Figure 36a. Sand Tides Landship Criteria A

Landship Vehicle Criteria

Registration Details

Ship's name	CSS Adjudicator
Captain's name	Commodore Maxwell Hartford
Operating under license of	18th Colonial Enforcement Squadron
Port of registration	Port Viscount

Specifications

Classification	*Albatross* Class Command Cruiser
Manufacturer	Royal Gemini Shipwrights
Hull length	212m
Weight	22,300t
Nominal hull thickness	120mm
Souls aboard	72 Crew and Officers (rated to 92 max)
Maximum range	3,400km
Speed	52kph Cruising, 67kph Max

Critical Systems

Generator	North Star Electrical, '*DT*' Class, Dual Helix Fusion Drive with active Thermal Recovery System
Operational machine intelligence	Mk.4c '*Quartermaster*' Integrated Tactical Mainframe Intelligence
Offensive systems	2x Dual Core Plasma Arc Main Guns, 4x Multi-Role Tactical Launch Tubes, 8x 86mm Coil Guns
Defensive systems	3x Gamma Laser Close-In-Weapons-System (CIWS), 2x Long Range Interceptor Launchers, 4x Reactive Arc Destabilization Generators
Onboard facilities	50 Person Mess Hall, Officers Mess, 2 Repair Bays, 2 Industrial Fabrication Bays, 40 Person Theatre/Lecture Hall, Enlisted Personnel Bar, Officer's Bar, Multi-purpose Sports Gym, Surgical Theatre
Deployable craft	3x Fast Attack Buggies, 2x Recognisance Dirigibles, 2x 6 unit Drone Bays

Legal Certifications

Insurance provider	Lewis, Young & Richards Group	
Coverage type	Full Engagement Protection	
Insurance rating	880 points	
	*notes	• Full Self-sufficient redundancy • Certified weapons, safety, damage control training • Certified onboard fusion recovery expertise
Safety rating	A-	
	*notes	• Certified personal protection protocols • Balanced enemy engagement tactical profile • Front line, pre-emptive engagement liability

Figure 36b. Sand Tides Landship Criteria B

Landship Vehicle Criteria

Registration Details

Ship's name	Banner of Refuge
Captain's name	Donna Ponsen
Operating under license of	Roaming Associates
Port of registration	Canary Delta

Specifications

Classification	*Forman* Class Excavation Support Cruiser (Converted)
Manufacturer	Black Pine Industrial
Hull length	262m
Weight	23,500t
Nominal hull thickness	46mm
Souls aboard	124 crew and personnel, 42 children (rated 84 max)
Maximum range	4,400km
Speed	36kph cruising, 43kph max

Critical Systems

Generator	Duma Engineering, RB42 Dual Core Fusion Drive with modified Continuous Compressor Assembly
Operational machine intelligence	Modified '*Overseer*' Industrial Control Intelligence
Offensive systems	4x 62mm Coil Guns
Defensive systems	3x Dual Band Laser Close-In-Weapons-System (CIWS)
Onboard facilities	2x Bar/Mess Halls, Informal Educational Facility, 2x Informal Fabrication Bays, 2x Sustainment Gardens, Informal Armoury, 2x Sickbays, Multi-purpose Sports Gym, Informal 62 Person Theatre
Deployable craft	4x 8 Person Buggies, converted 6 unit Drone Bay

Legal Certifications

|	
Insurance provider	Hyberica Community Coverage Group
Coverage type	Cargo and Partial Hull Recovery Package
Insurance rating	210
*notes	- Navigation inconsistencies - Dated hull - Inconsistent profit model - Dated Onboard Machine Intelligence
Safety rating	D
*notes	- Exceeding designed crew capacity - Substandard personnel protection equipment - Multiple unregulated fusion drive modifications - Children aboard

Figure 36c. Sand Tides Landship Criteria C

DESIGN OPTIONS: INITIAL 3D RENDERS

These are the first 3D renders which began to establish the form language of the individual factions. The designs of these three Landships were chosen to illustrate a breadth of different functions. They would translate into a variety of different mission types or gameplay styles, leaving it up to the player to decide how they would interact with both the in-game environment and with other Landships.

Figure 37. Athos Alliance Exploration Landship Render
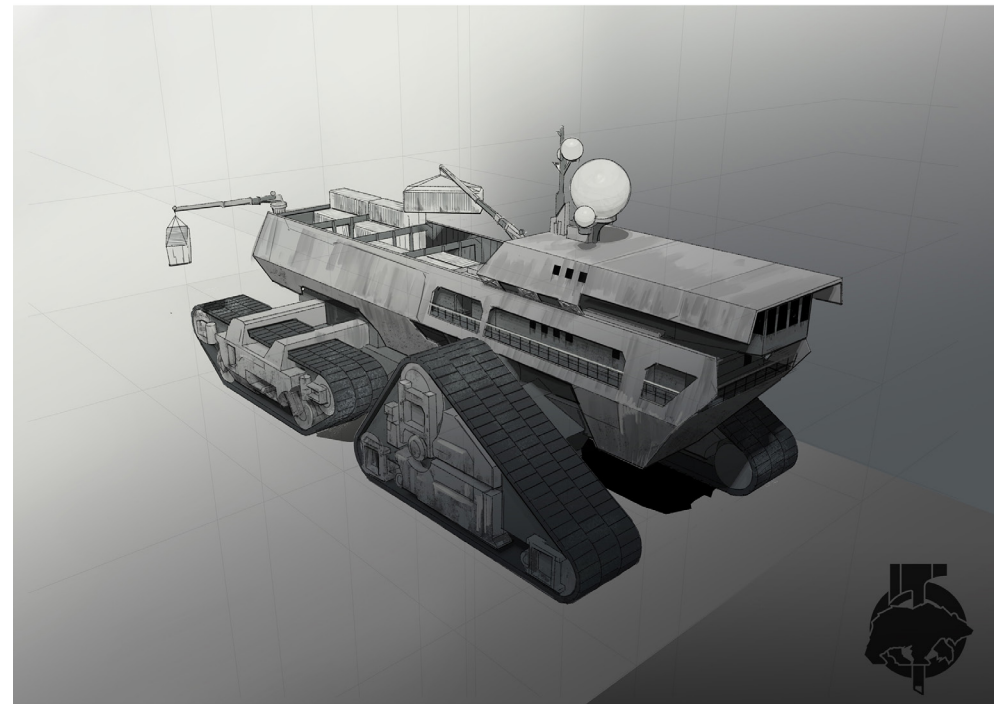
Figure 38. Vara Republic Freighter Landship Render

DESIGN VARIATIONS

The last phase of the creative development process was undertaken in the design variation phase. This was used to further refine the visual language of each faction by designing individual logos and icons. Factions were made more distinguishable by allocating them a specific colour pallet and interior design style, which would help to inform decisions about banners, interior and exterior colour schemes.

Earlier explorations into physical structures were developed into 3D models for use as background assets in supporting renders. These structures were designed with a brutalist aesthetic to reflect the conceptual basis of the property which is influenced by the legacy of large, modernist social housing projects.

The design variation phase concluded with another round of 3D Landship renders for each of the three factions. Each of the Landship designs develops on the unique visual language of the factions, while illustrating a range of different vehicle scales, with the Vara Landship being the smallest and the Commonwealth Landship being the largest.
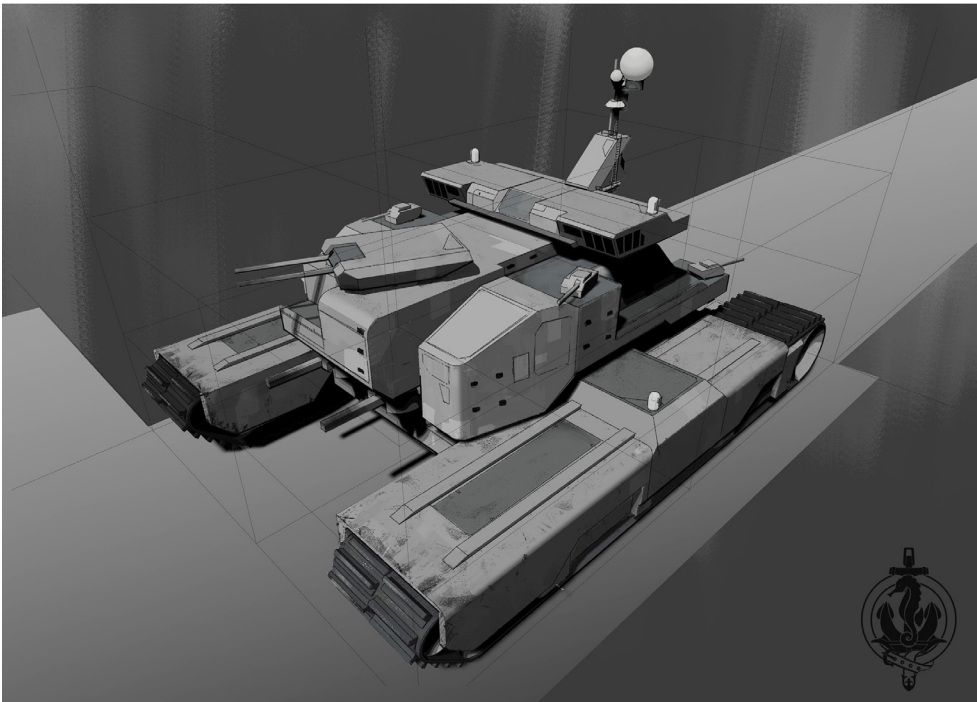
Figure 39. Commonwealth Battleship Landship Render

Figure 40. Sand Tides Faction Logos & Iconography

Figure 41. Sand Tides Urban Environment Concepts
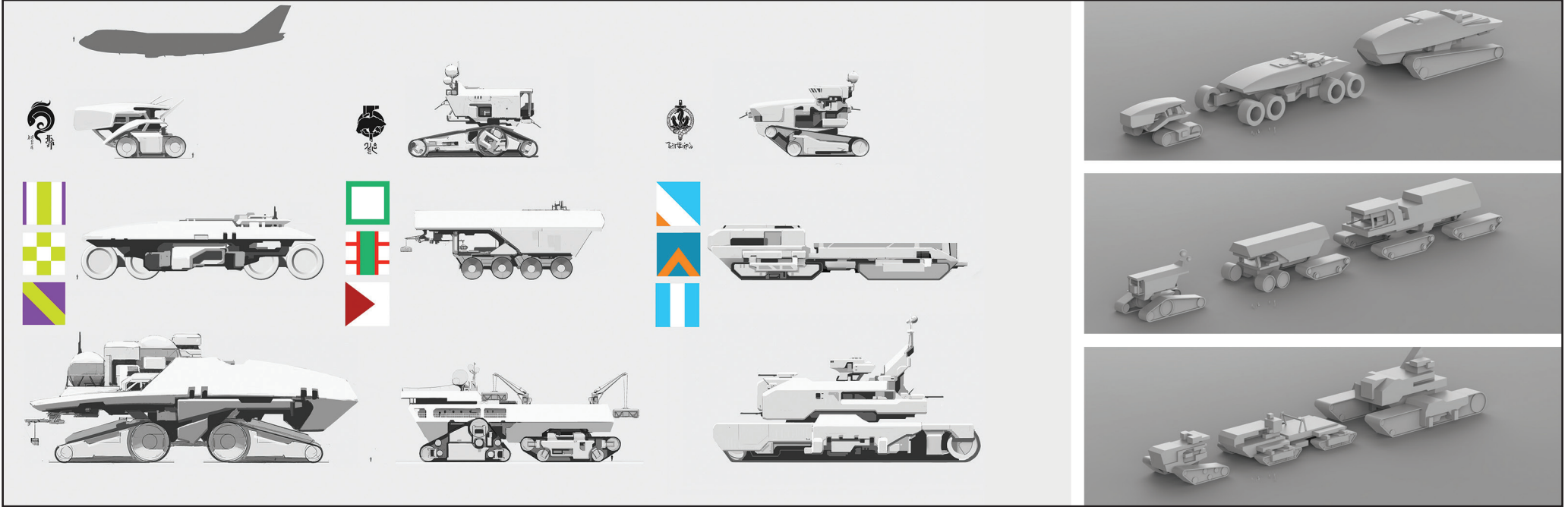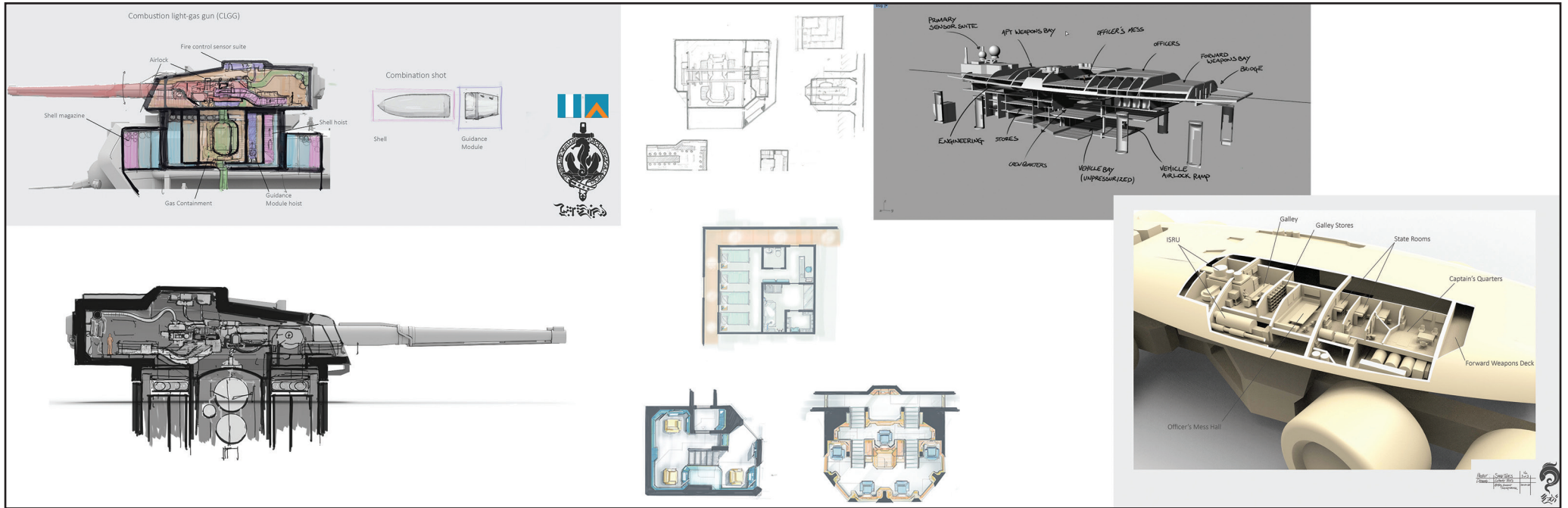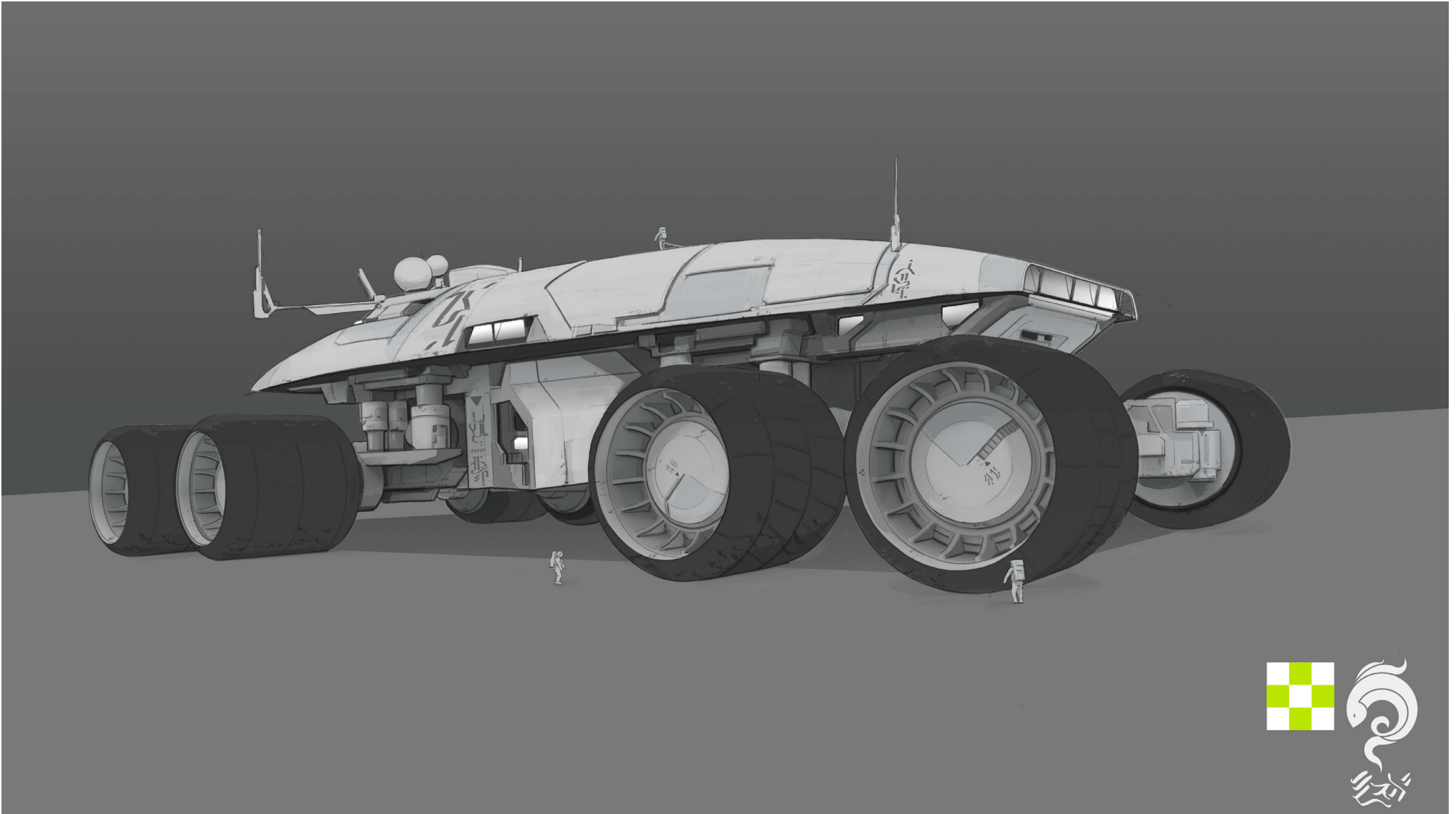

Vara.
Rust, exposed metal, dated plastics.
Large, uniform, empty developments.
Robust and simplistic industrialized technologies.

Athos.
Biotech, additive manufacturing.
Mixed socio-economic, commercial and trade orientated
Well adapted, unique, experimental and informal technologies.

Commonwealth.
Opulent, intimidating, naval heritage.
Systematised Colonisation, inequal and fully privatized habitats.
Powerful & expensive, imported technologies.

Figure 42. Sand Tides Faction Banners

Figure 43. Sand Tides Faction Interior Moodboards

Figure 44. Sand Tides Landship Class Variations

Figure 45. Sand Tides Interior Space Explorations

Figure 46. Athos Alliance 'Hierophant' Class Landship Render
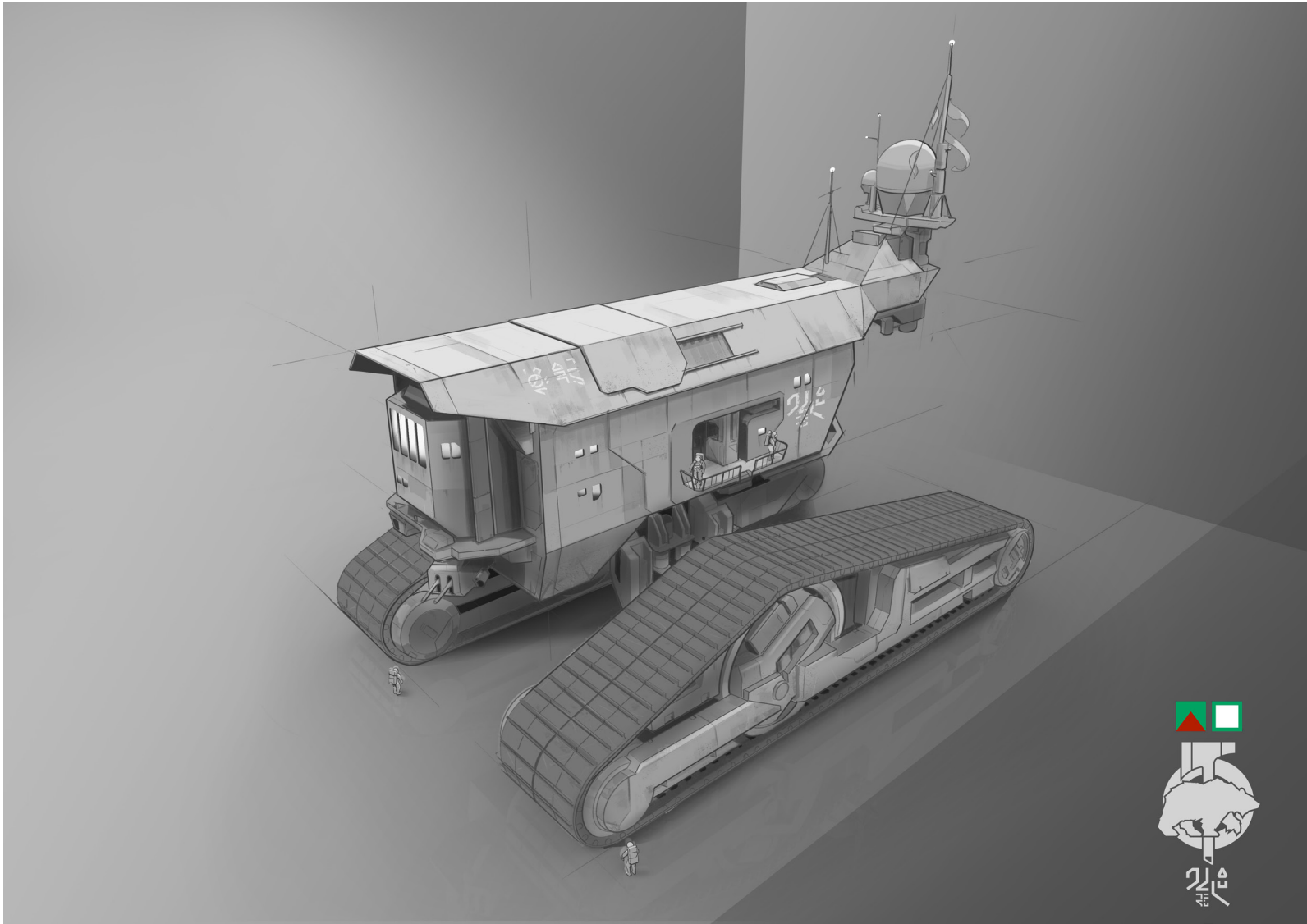
Figure 47. Vara Republic 'Frogbox' Class Landship Render
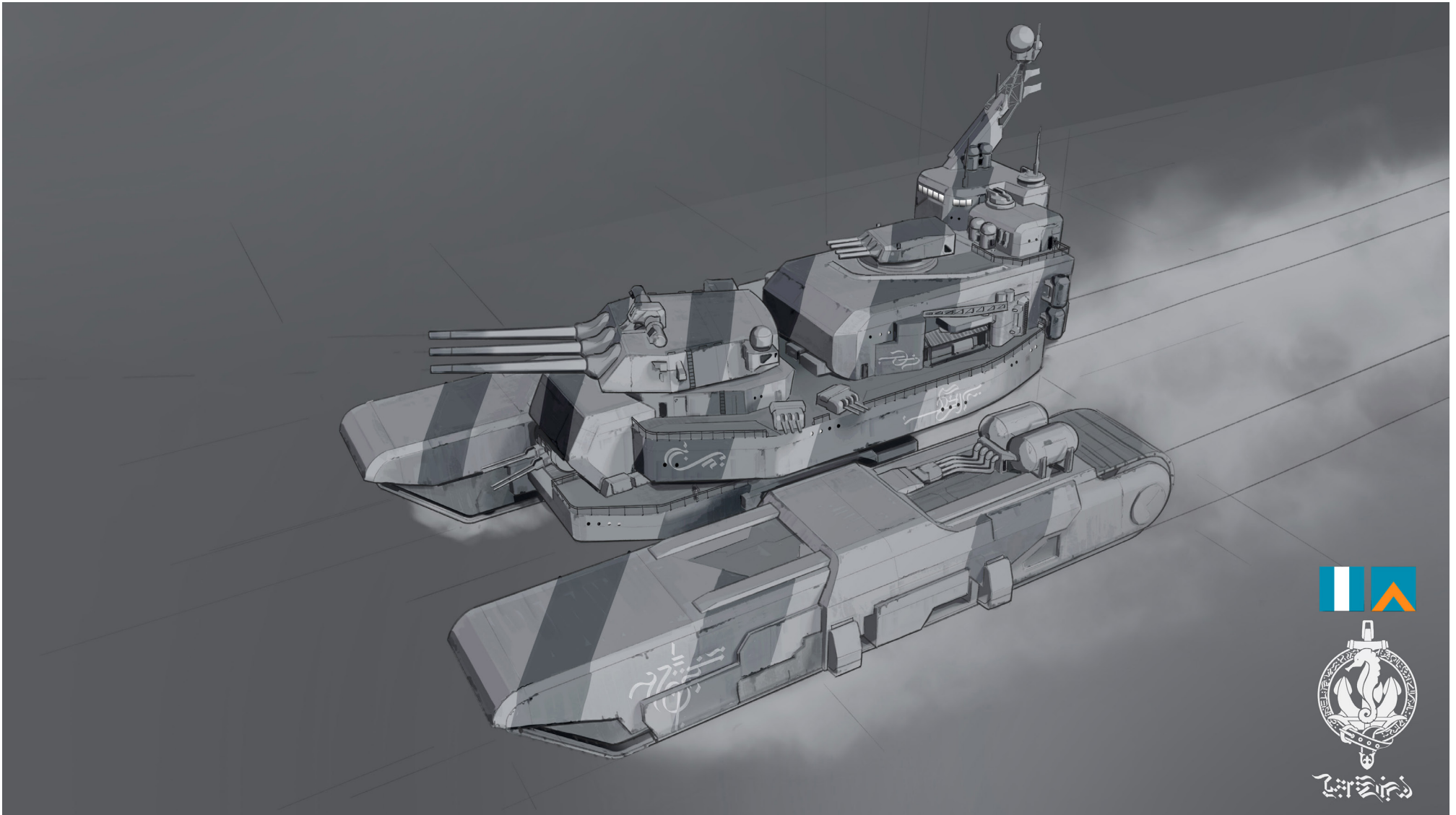
Figure 48. Commonwealth 'Albatross' Class Landship Render

FINAL APPROVED DESIGN

For the final approved design I selected two of the Landships which would best depict the scale and diversity of gameplay possibilities. the Vara Republic: Frogbox Class Reconnaissance Frigate, and the Athos Alliance: Hierophant Class Habitat Cruiser.

Developing a final approved design involved the creation of smaller, sub-images. These sub-images illustrate conceptual aspects of the Landship experience and how they might translate into gameplay. They explore aspects such as creative disobedience emerging from restricted spaces, the spatial inequality between different living conditions, and the effects of these different spaces and spatial practices have on a Landship's crew.
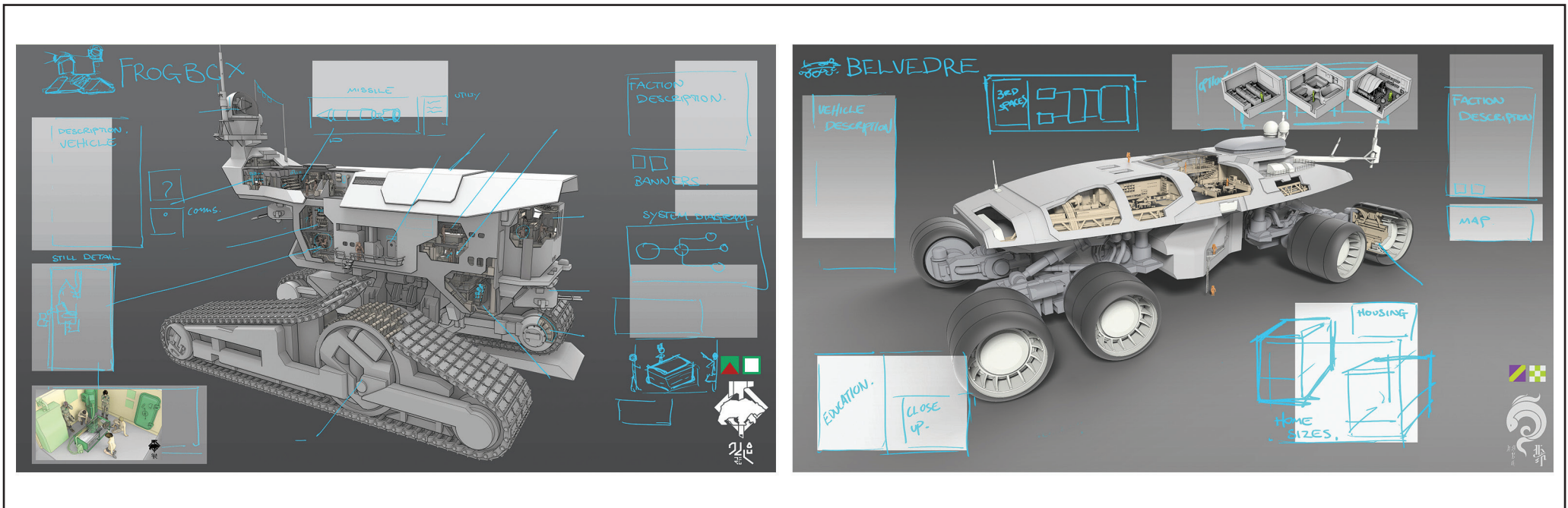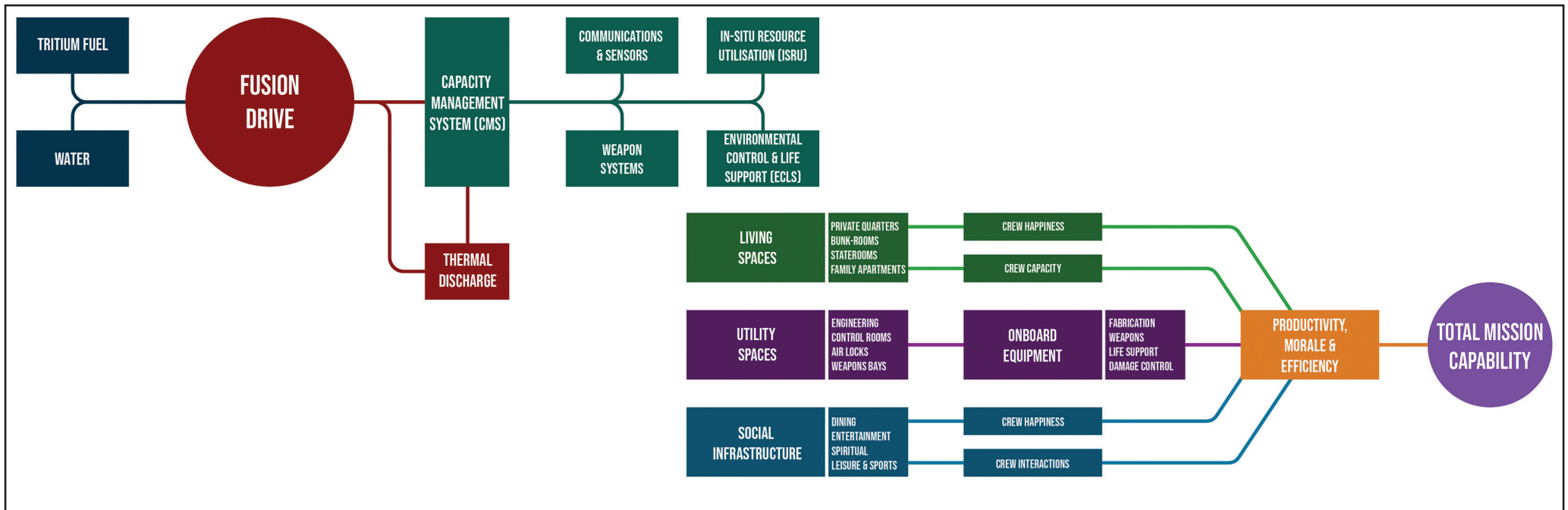

Figure 49. Cutaway Composition Experiments

Figure 50. Sand Tides Gameplay Systems Diagrams

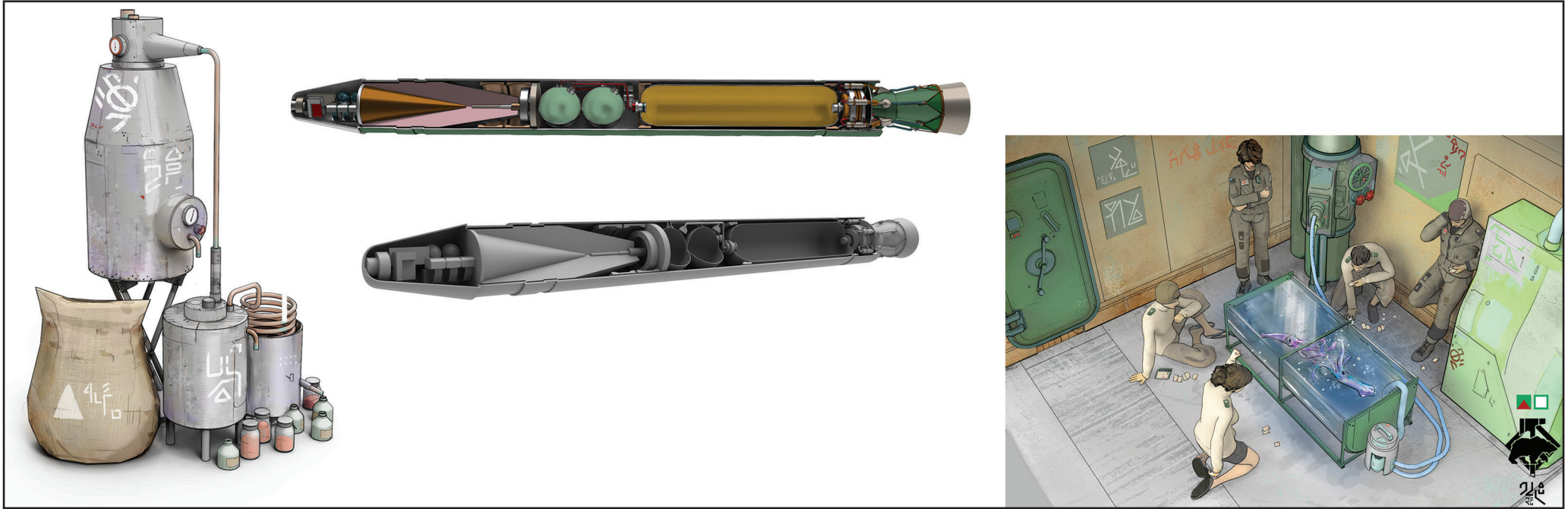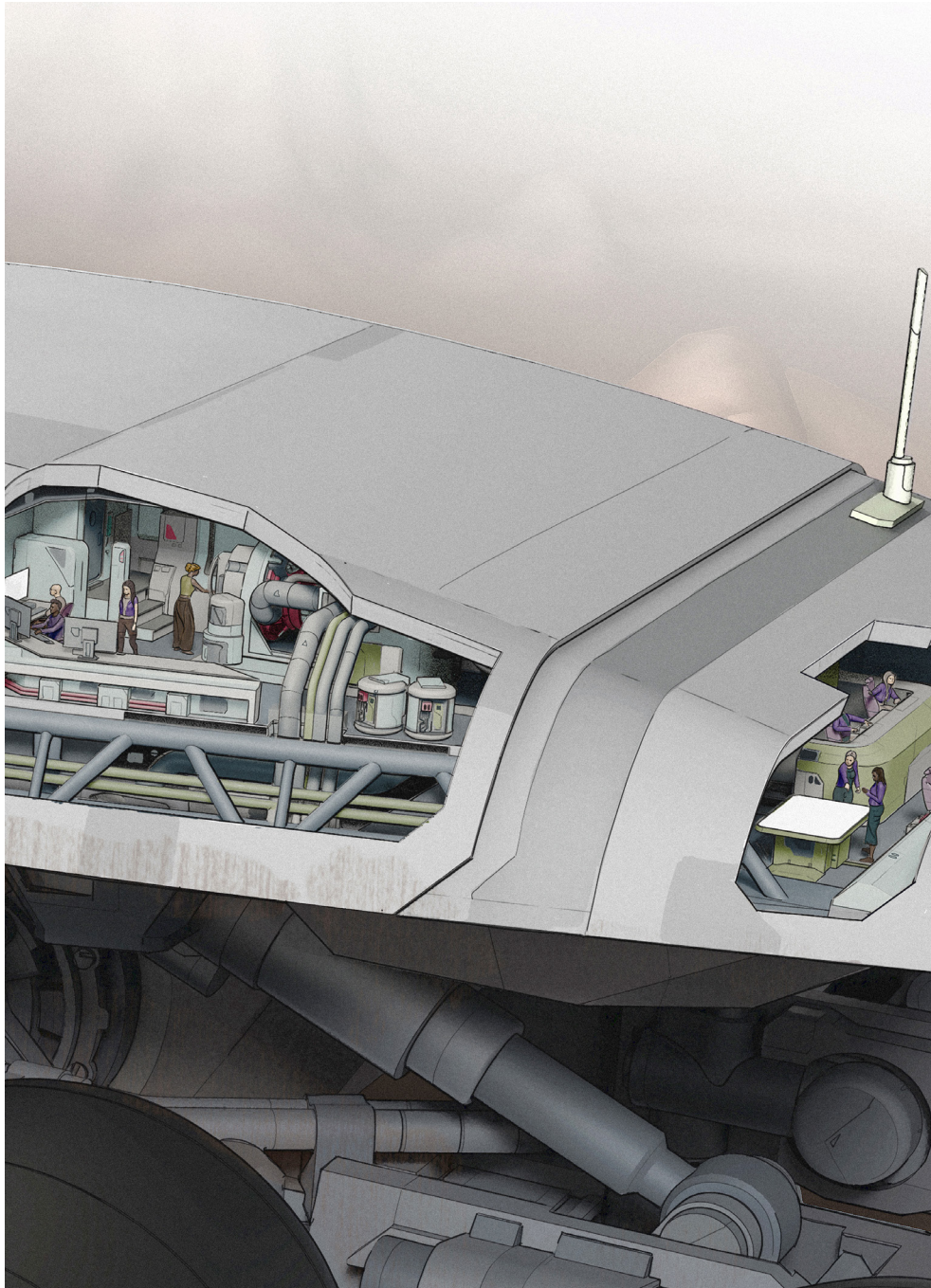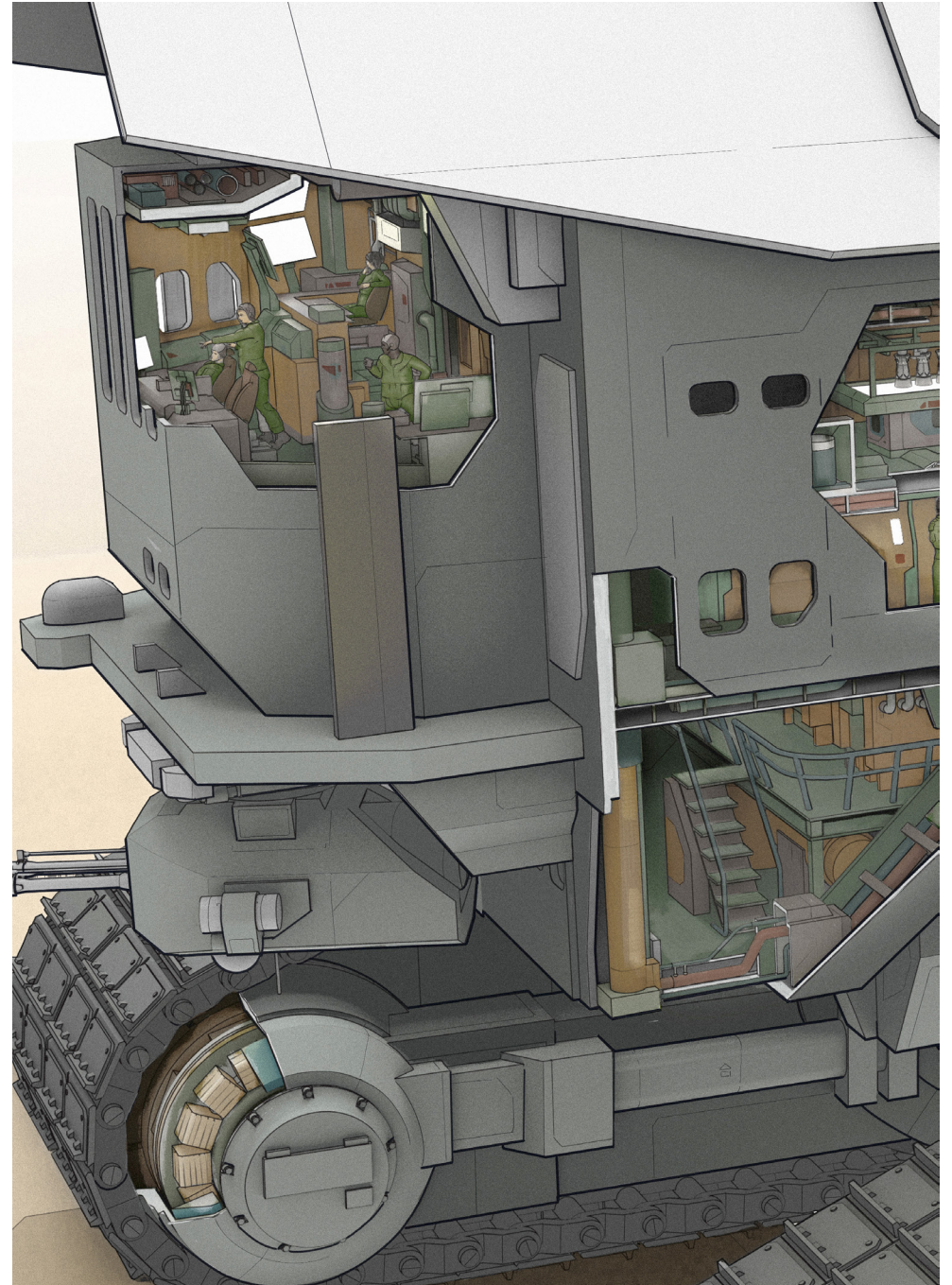**Figure 51.** Athos Alliance Cutaway Sub-Images

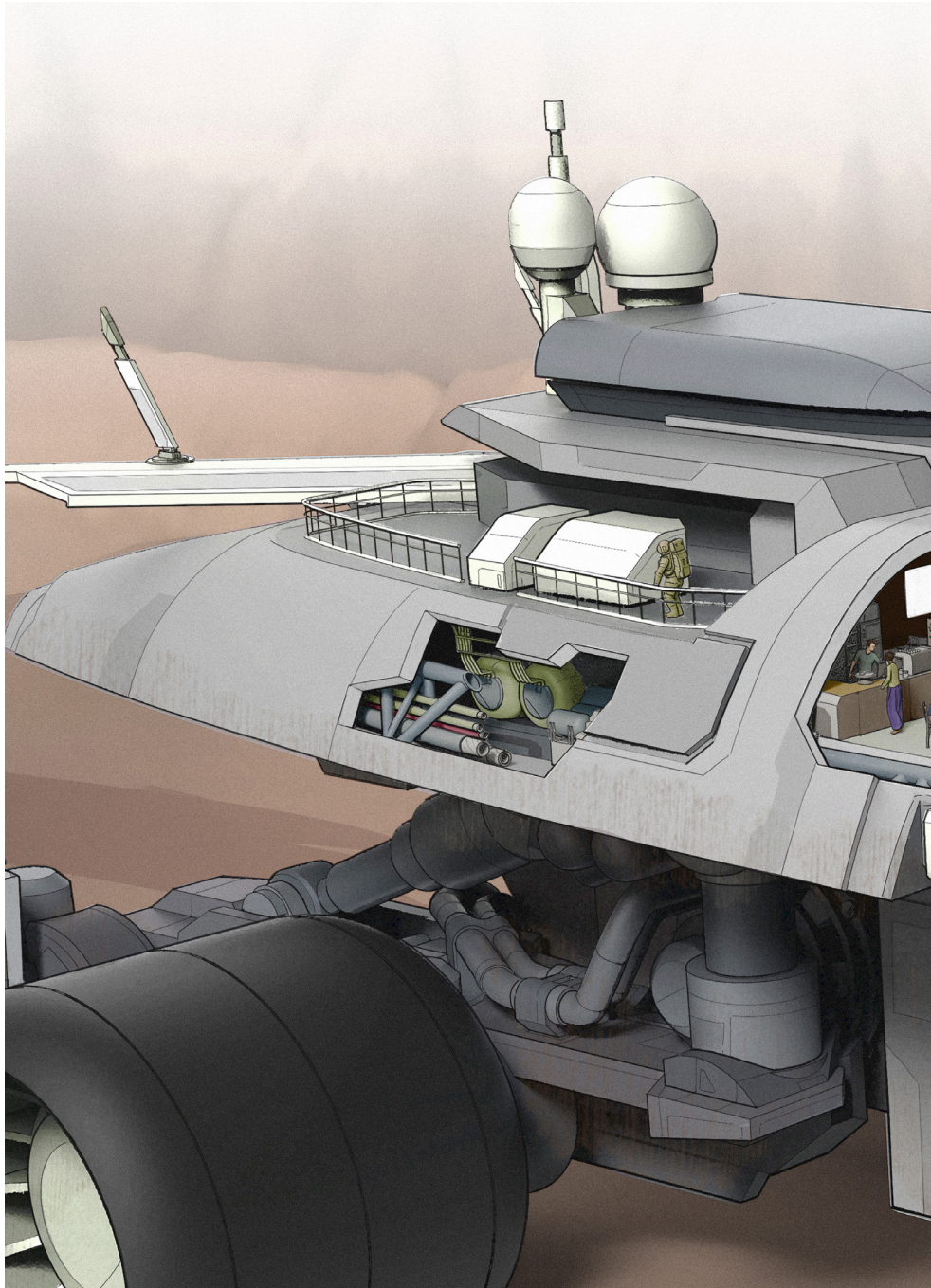**Figure 52.** Vara Republic Cutaway Sub-Images

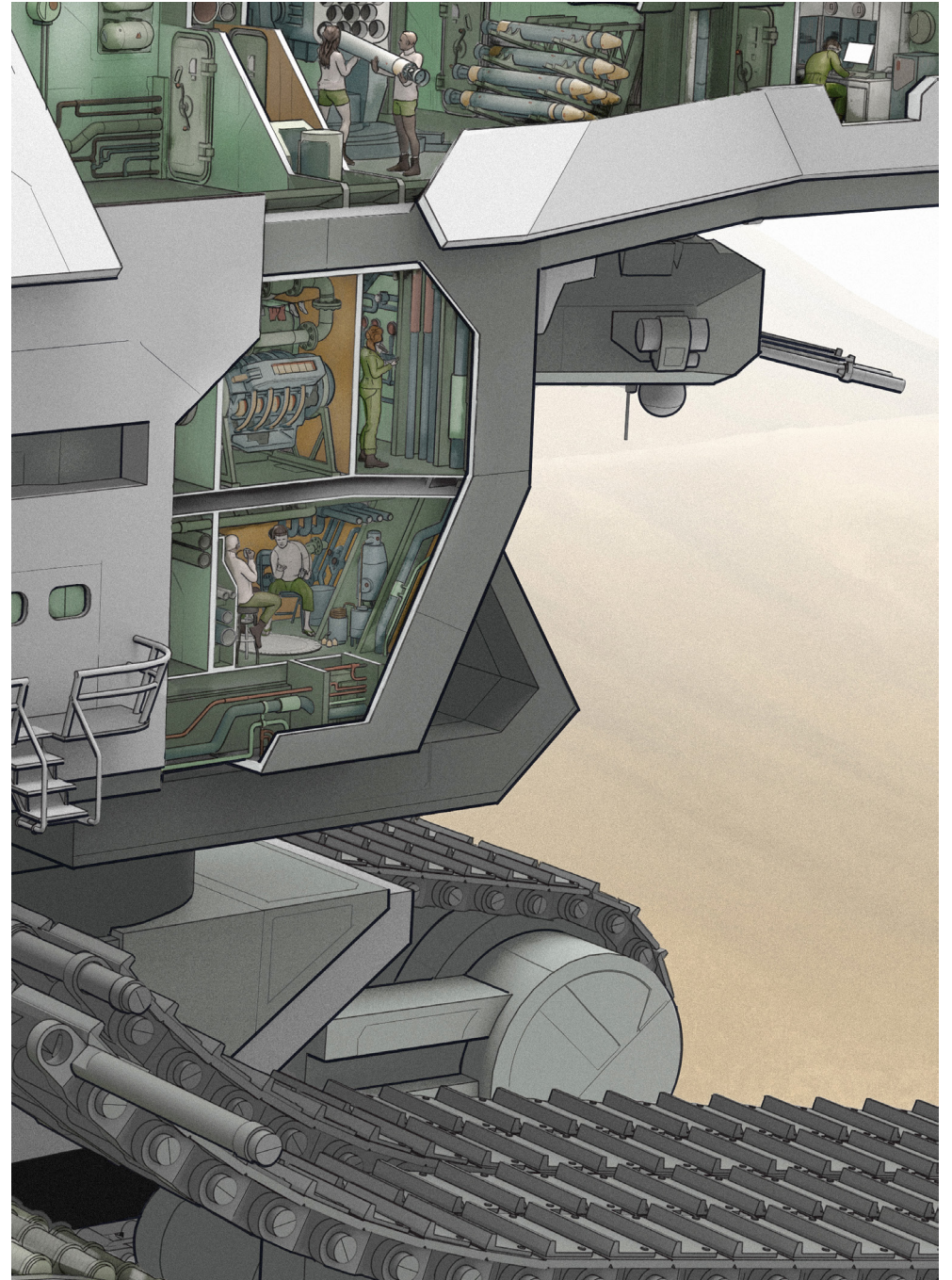**Figure 53.** Athos Alliance 'Hierophant' Class Landship Forward Details

Figure 54. Vara Republic 'Frogbox' Class Landship Forward Detail

Figure 55. Athos Alliance 'Hierophant' Class Landship Aft Details

Figure 55. Vara Republic 'Frogbox' Class Landship Aft Detail

SUMMARY

The Sand Tides cutaways are presented as a starting point for the development of a new video game property, a property which has the potential to provide players with different perspectives of a human future in off-world colonies. The presentation of the two cutaways is intended to provide an illustrative example of what such a future might be like, and how it might be manifested in a video game.

It applies historical experiences of how spaces are used as articles of control in colonial settings to a fictional world, adding a nuanced perspective to the growing public optimism towards a future with offworld colonies . Each cutaway illustration is designed to allow the viewer to imagine what they might do with restricted spaces on a hostile planet, a planet where the creation of wealth and capital is being achieved at the expense of its inhabitants.

The final cutaways are intended to illustrate the conceptual and thematic possibilities of the Sand Tides property, and not as a guide to how gameplay might be designed to achieve meaningful play. They are intended to capture the intent of how a synthesis of these themes and concepts could be coupled to a wider fictional universe. It is for game designers in the future who can produce a playable game where players can challenge their assumptions about the social costs of offworld colonisation.

Ideally, they should be exhibited in a gallery where a viewer can engage with the exterior vehicle design and interior spaces they might provide, but could also be used as promotional material in digital or printed media to grow the public interest in the Sand Tides property. Whether the viewer is a member of the public or part of a game development team, the illustrations will encourage the viewer to imagine the possibilities of how they would engage with these spaces. I designed them to elicit the same type of joy and wonder I feel when I imagine what could be done with such spaces in such an environment.

The next avenue of research for this project would be to engage game designers and developers to create a playable demo, where these possibilities for meaningful play could be experimented on in a playable space. Testing the playability of in-game mechanics would begin a process of creating an experience where the conceptual aspects of the Sand Tides property are playable, immersive and memorable.

By applying the concept design process to a property of my own I have been able to develop my skills as a concept designer, while finding new and novel applications for my pre-existing skills as an industrial designer. I've used the opportunity to explore my personal fascination with the creation of fictional worlds, and how they are used as a starting point for telling meaningful stories through imaginary scenarios.

FIGURES LIST

Figure 1. MARSHA (n.d) .AI Space Factory. Retrieved from: https://www.aispacefactory.com/

Figure 2. Mars Base Alpha (n.d). SpaceX. Via: https://www.humanmars.net/p/mars-base-alpha.html

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Figure 25. Sheppard, C. Faction Values Table (2020).

Figure 26. Sheppard, C. Sand Tides Early Vehicle Experiments (2019).

Figure 27. Sheppard, C. Sand Tides Faction Form Language Experiment (2019).

Figure 28. Sheppard, C. Sand Tides Faction Form Language Profile Experiment (2019).

Figure 29. Sheppard, C. Sand Tides Faction Script & Iconography Sketches (2019).

Figure 30. Sheppard, C. Sand Tides World & Regional Maps (2019).

Figure 31. Sheppard, C. Tides Brutalist Structures Sketches (2019).

Figure 32. Sheppard, C. Tides Urban Environment Sketches (2019).

Figure 33. Sheppard, C. Sand Tides Infrastructure Sketches (2019).

Figure 34. Sheppard, C. Sand Tides Corvette Profile Sketches (2020).

Figures 35 a-f. Sheppard, C. Sand Tides Character Persona Examples (2020).

Figures 36 a-c. Sheppard, C. Sand Tides Landship Criteria Examples (2020).

Figure 37. Sheppard, C. Athos Alliance Exploration Landship Render (2020).

Figure 38. Sheppard, C. Vara Republic Freighter Render (2020).

Figure 39. Sheppard, C. Commonwealth Battleship Render (2020).

Figure 40. Sheppard, C. Sand Tides Faction Logos & Iconography (2020).

Figure 41. Sheppard, C. Sand Tides Urban Environment Concepts (2020).

Figure 42. Sheppard, C. Sand Tides Faction Banners (2020).

Figure 43. Sheppard, C. Sand Tides Faction Interior Moodboards (2020).

Figure 44. Sheppard, C. Sand Tides Landship Class Variations (2020).

Figure 45. Sheppard, C. Sand Tides Interior Space Explorations (2020).

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Albatross class cruiser, CSS Adjudicator. Current flagship
of Commonwealth's 7th Trade Enforcement Squadron.
Manufactured by Royal Gemini Shipwrights in Port
Viscount, Planet Maru.

Max Range: 3,400km

Speed: 49kph Cruising, 62kph Max

Nominal Hull Thickness: 160mm

Souls Aboard: 72 Crew and Officers (Rated to 92 max)

Operational Machine Intelligence: Mk4c 'Quartermaster'
Integrated Tactical Mainfraine
Generator: Northstar Electrical, DT Class, Dual Helix
Fusion Drive with Active Thermal Recovery System.

Insurance Provider: Lewis, Young & Richards Group

Coverage Type: Full Engagement Protection (front line
preemptive engagement protection liability rates do
apply).

Operational Safety Rating: A-