INDUSTRIAL DESIGN

Great concept images are wonderful tools – necessary for inspiration and setting the visual bar.

However, there is no substitute for deep Industrial Design when it comes to making things real.
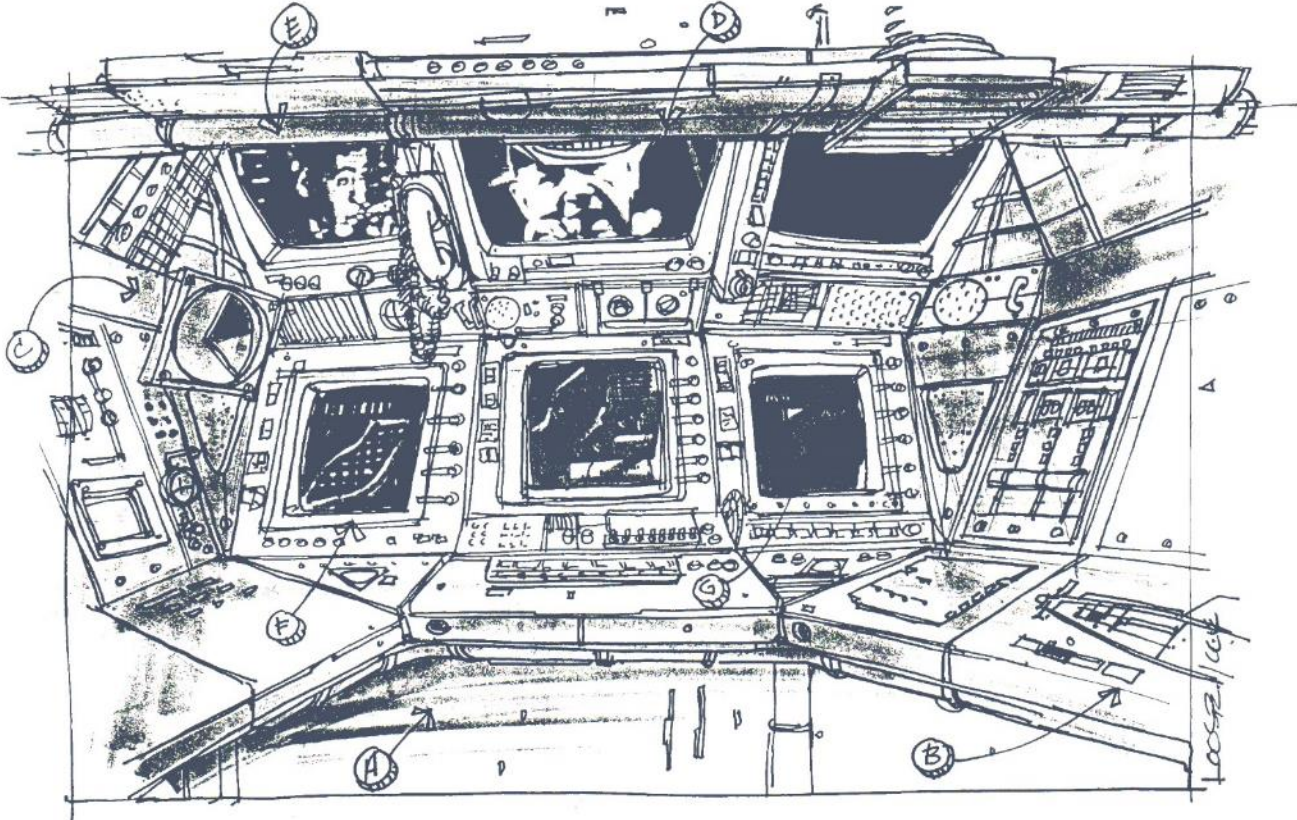
Artists go by many titles – I am, first and foremost, an Industrial Designer

One of my strengths is the ability to take a concept and make it producible.

This document is a vertical slice through my portfolio.

It's How I Think.

Gameplay - Understanding the core mechanics of a game drives and informs the art
Disney Interactive product were created to explore the use of film assets from the movie

① ENTER VENUE

RETURN TO "WEPS" STATION

• "CLUE" DIRECTION MESSAGE

• MOVIE FOOTAGE - FRAMED MATTED BY 2D ART MAPPED ONTO CUBE INTERIOR

• 3D AREA FOR GAMEPLAY INTERACTION (INTERCOM, SECURITY MONITOR, CAPTAINS "REPEATER")
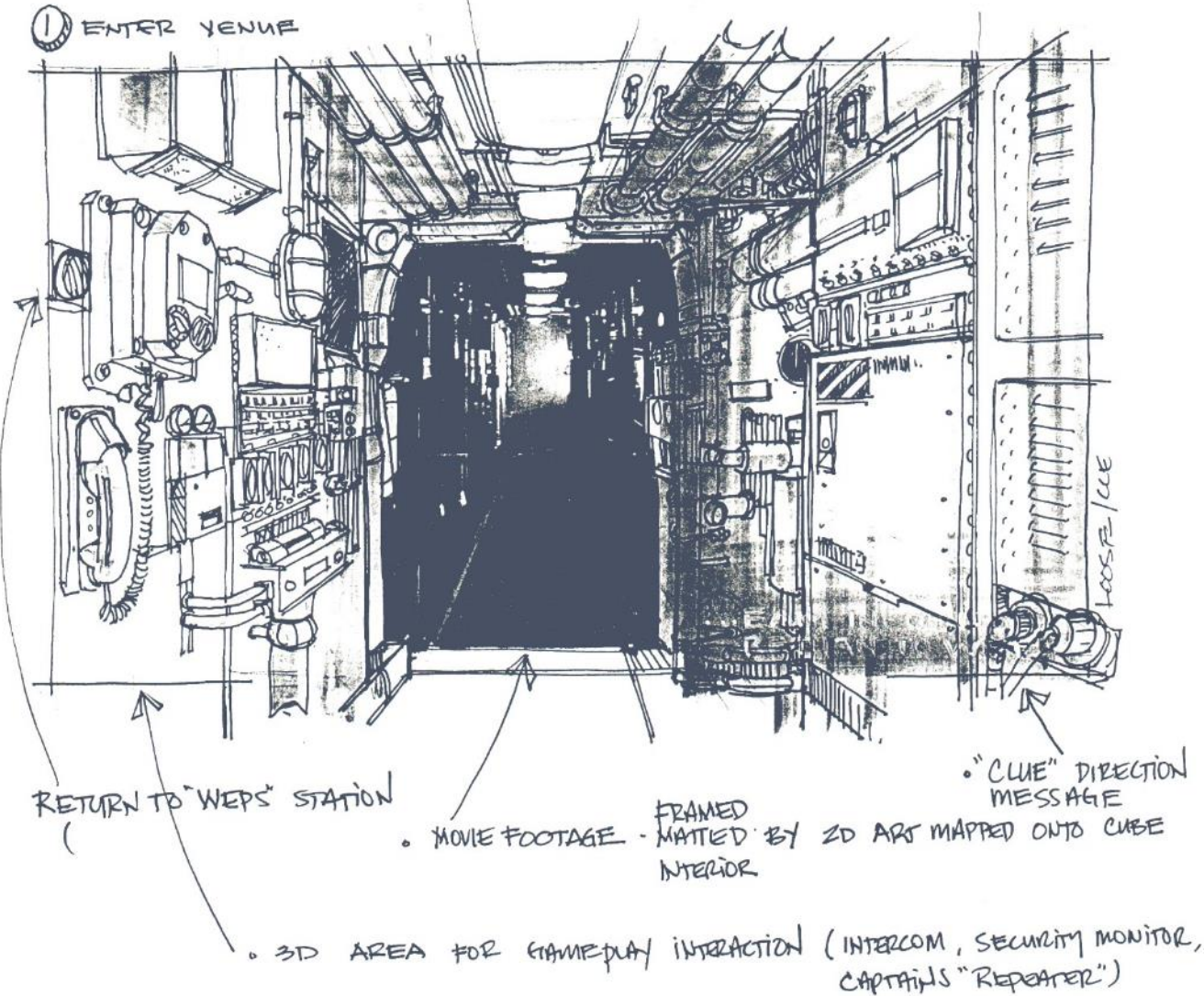
• WEPS STATION

○ PURPOSE -
Ⓐ ○ CENTRAL AREA OF GAME
Ⓑ ▷ PROVIDES NAVMAP TO GO TO DIFFERENT AREAS OF BOAT (SHOWS ACTIVITY STATUS)
Ⓒ ▷ MISSION CLOCK (20 MINUTES)
Ⓓ ▷ RECEIVE CAPTAINS AUDIO/VISUAL MESSAGES (FILM CLIPS)

ONE, BOTH, NONE
VISUAL / AUDIO

Ⓔ ▷ MONITOR OTHER AREAS OF BOAT (LEVEL OF ACCESS DIFFERS) WITH MISSION SCENARIO

EG. ATTEMPT TO ACCESS REACTOR AREA - CAMERA ACCESS IS DISABLED - MUST GO AND PERSONALLY OBSERVE, OR ONLY AUDIO AVAILABLE, OR ONLY VISUAL AVAILABLE

③D INTERACTIVE ENVIRONMENT

Ⓕ ▷ TRIGGER EVENT - SELECT MISSION BY INPUT & SELECT MAP COORDINATE FOR MISSILE LAUNCH

Ⓖ ▷ MESSAGE SCREEN (SHOWS UP SUPERIMPOSED IN OTHER PARTS OF SHIP)

② ○ TURN LEFT TO
▷ ACCESS INTERCOM, RETURN BUTTON, BOAT NAV MAP

③ ○ STEP FURTHER IN
▷ WATCH LIVE ACTION FOOTAGE SLIGHTLY FRAMED BY 2-D ART
▷ RECEIVE CLUE - DIRECTION MESSAGE

④ ○ STEP BACK TURN LEFT TO ACT ON CLUES/INFO HIT RETURN BUTTON TO
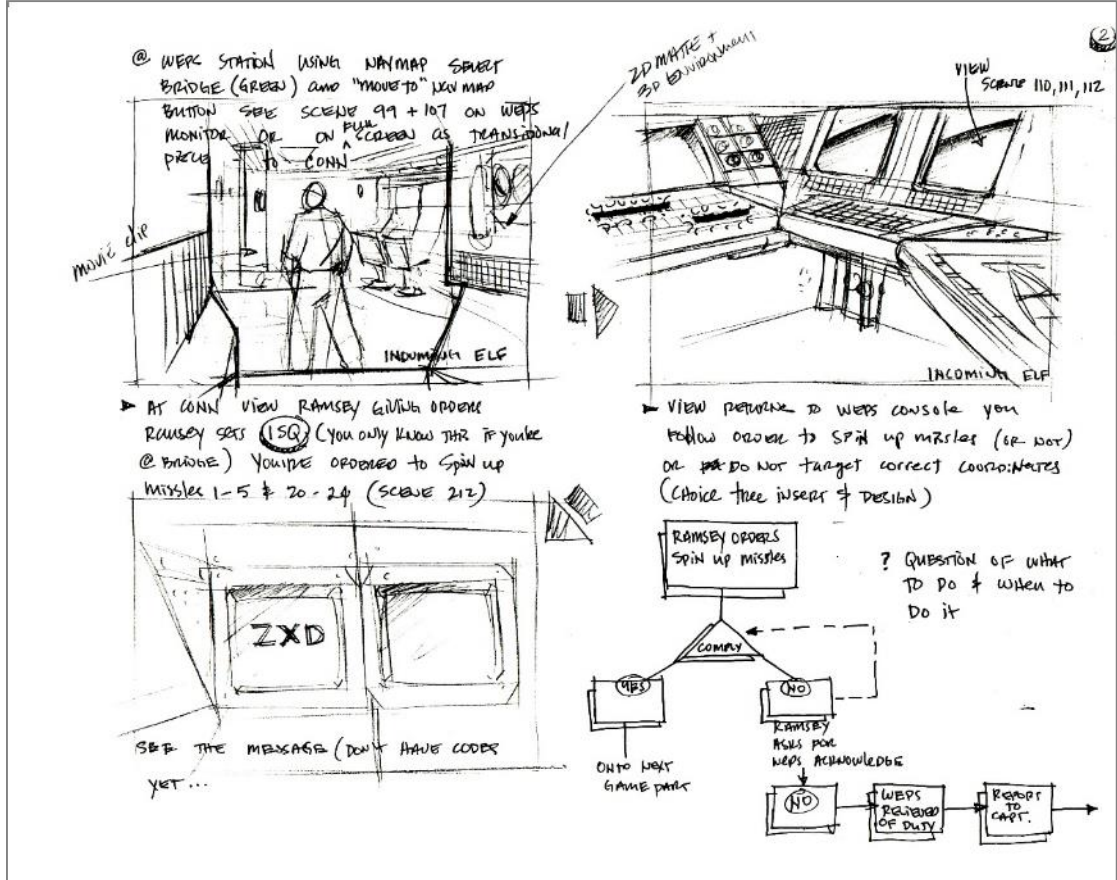▷ RETURN TO WEPS STATION -
▷ MOVE TO ANOTHER PART OF BOAT VIA NAVMAP
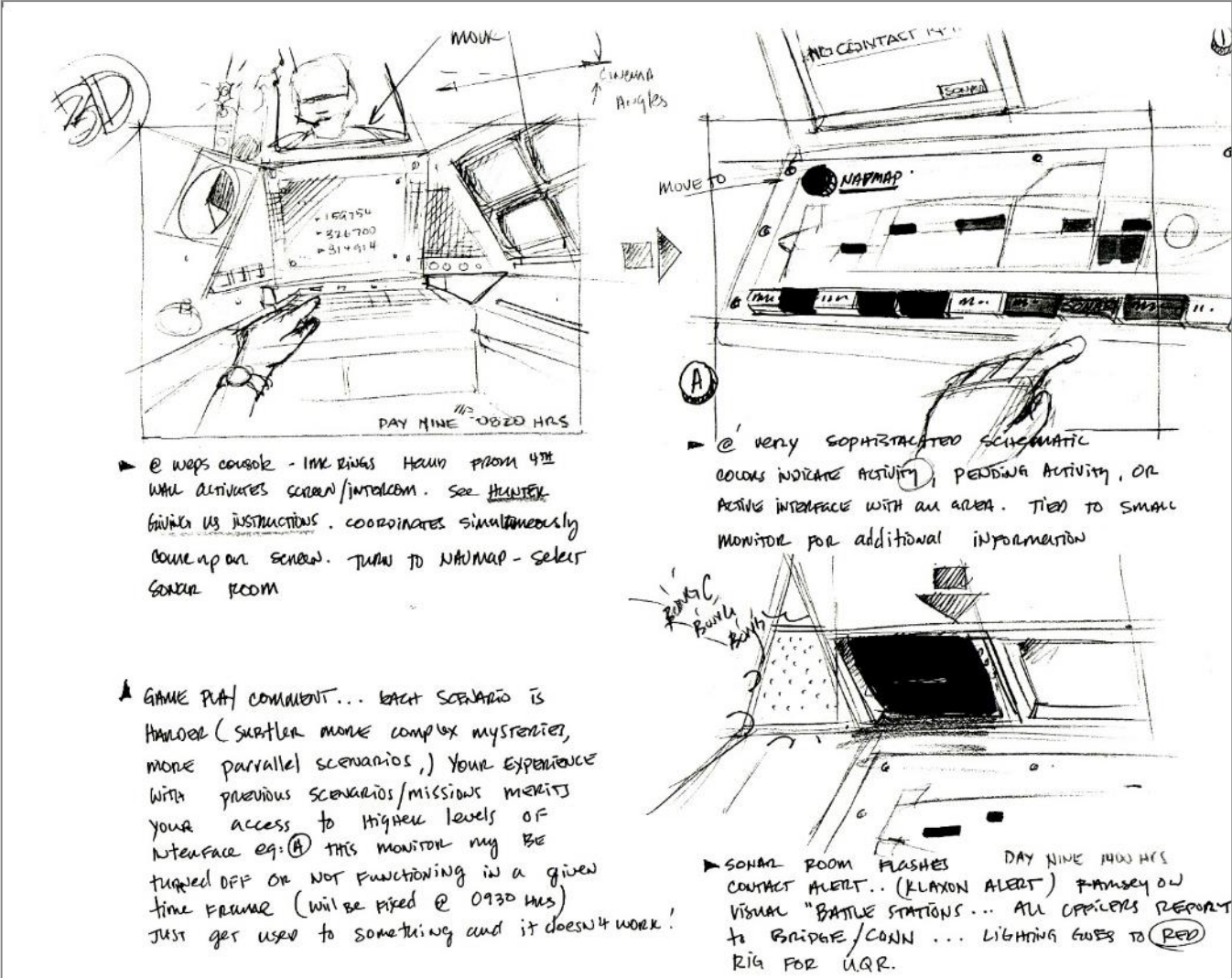
Kitchen Work

Nuts and bolts development is kitchen work and it's critical to deep industrial deign. Cooking up the final product with great ingredients, hard work and an excellent recipe – baked just right.

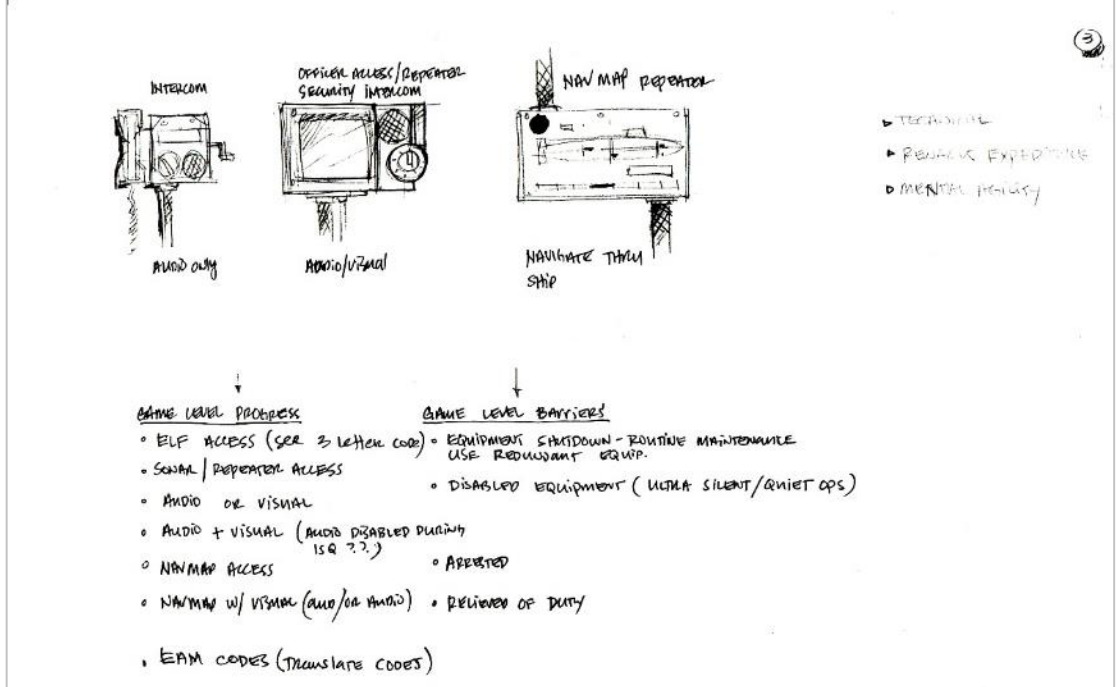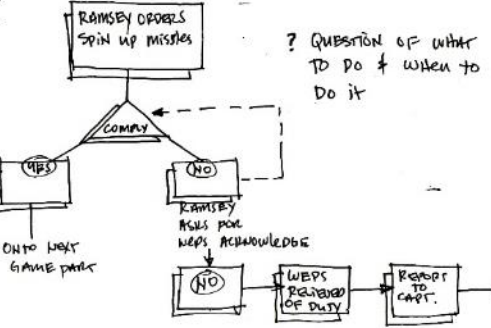Concepts for: Crimson Tide Adventure Game

Thumbnails

Little drawings – lots of detail – fun to create.

These thumbs were created for FASA's Virtual Geographic League- the fictional construct founded by Tesla and AG Bell.
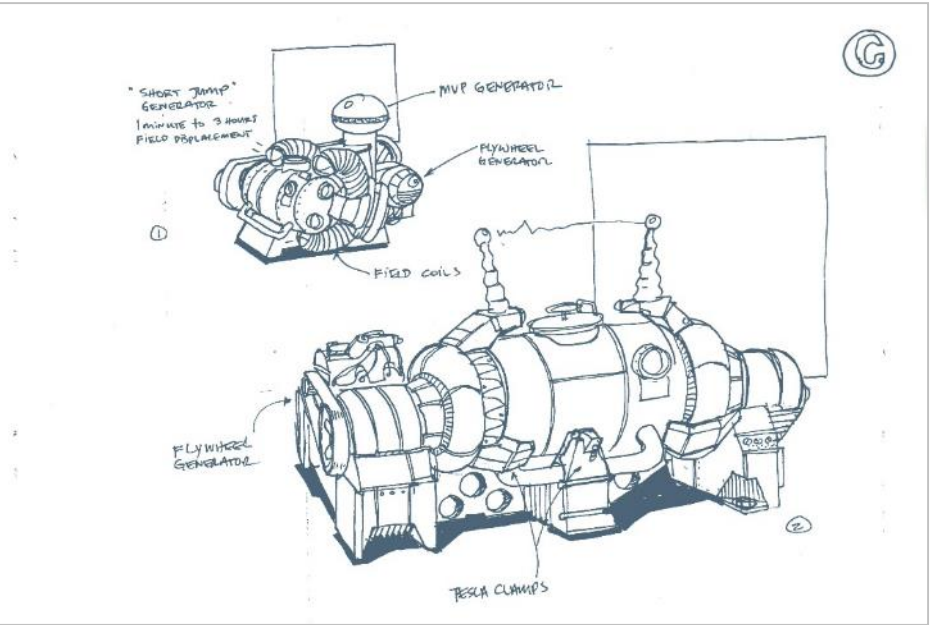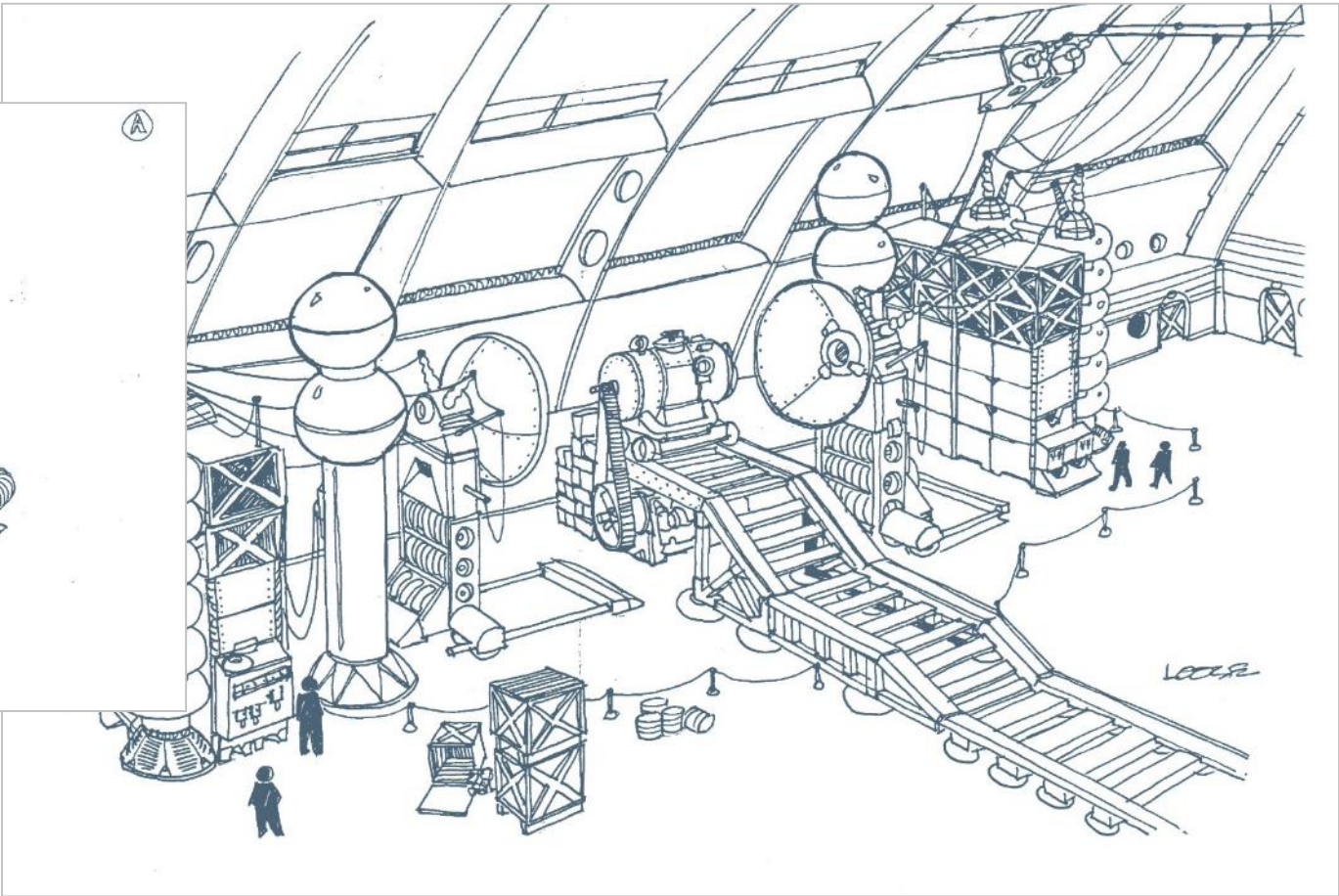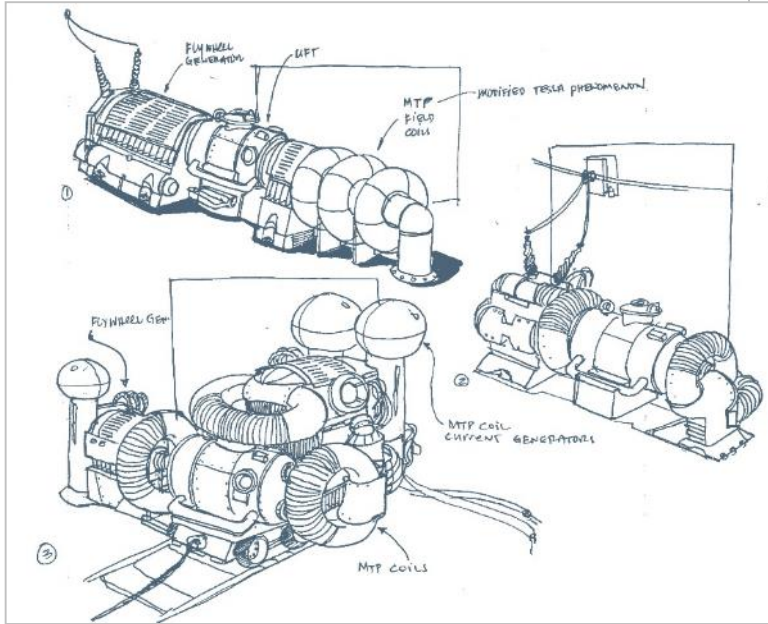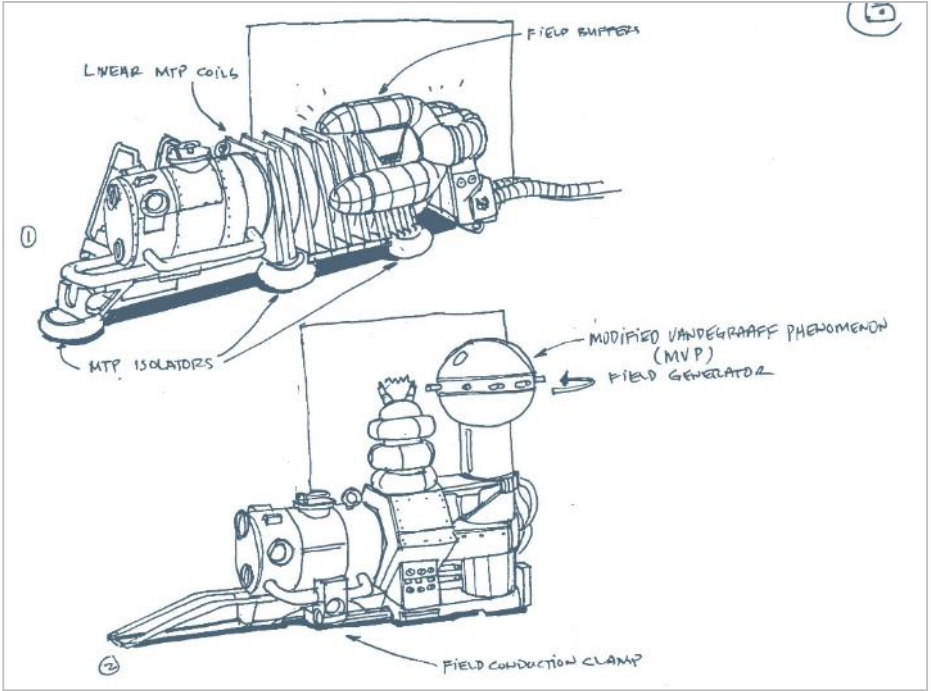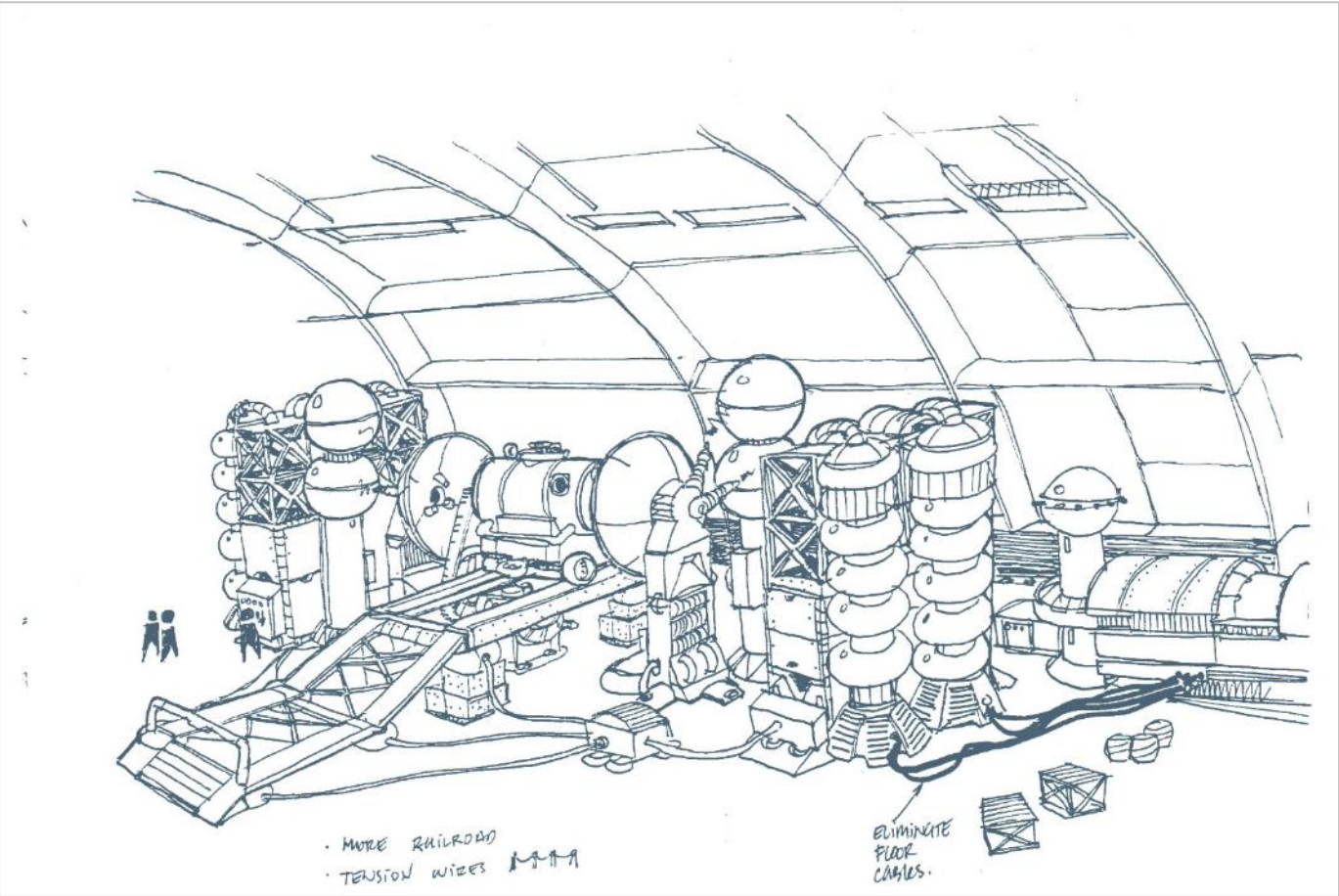
Concepts for: FASA VGL

Roughs

Roughs help work out the visual story I'm trying to tell. These two, created for a Virtual Disney World invaded by aliens -never made it past the pencil stage. I had some help on the cartoon characters from my friend Matt Bates

Concepts for: Disney Interactive – Virtual Disney World
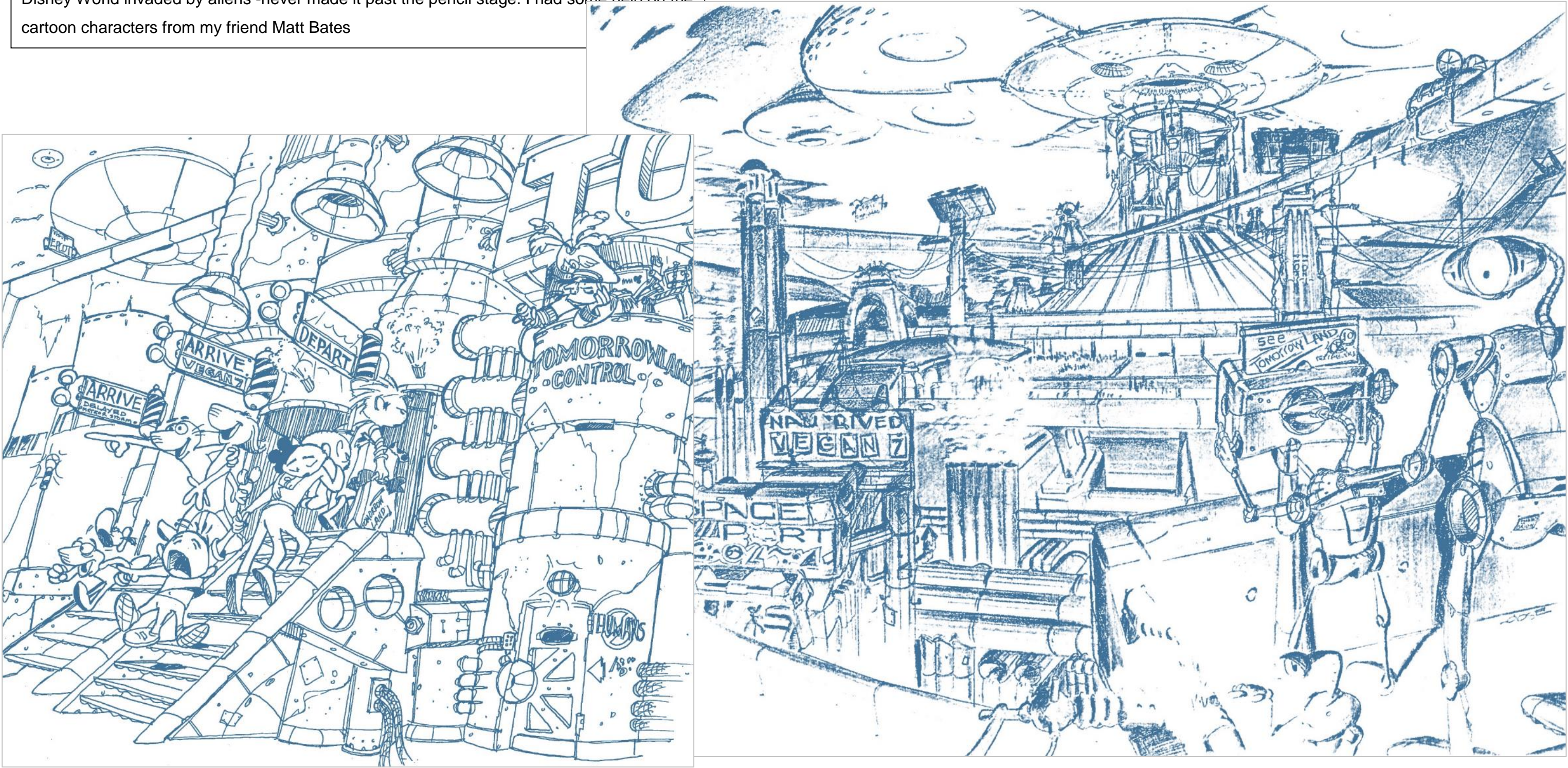
Story Boards…useful for telling stories. Here are some samples using marker (TUT) and Photoshop (IBH) for rendering

NEFRETIRI ENTERS THE INNER PYRAMID OF THE PALACE.. THROUGH THE STONE WALL (THERE IS NO PHYSICAL DOORWAY/ENTRANCE INTO THE PYRAMID) TUT.. ASTONISHED AT HER DRAMATIC FEAT OF WALKING THROUGH A SOLID STONE.. DETERMINES TO FOLLOW HER FROM HIS HIDING PLACE AT THE BASE OF THE PILLAR

NEFRETIRI SPEAKS TO TUT OUT OF THE BLINDING GLARE OF THE DISK OF THE SUN "COME CLOSER AND YOUR REQUEST SHALL BE HEARD…" AWESTRUCK … THAT A GOD SHOULD SPEAK TO HIM … TUT QUAKES WITH FEAR AND STANDS FROZEN WHILE WADJET COAXES HIM TO MOVE.

TUT.. TERRIFIED, VULNERABLE RUSHES INTO THE SOOTHING SEDUCTION OF HIS STEP MOTHERS ARMS THE FIRST STEP OF HER PSYCHOLOGICAL DOMINATION OF HER STEPSON COMPLETE SHE LEADS HIM FROM THE ANTE CHAMBER INTO HER APPARTMENT.

NEFRETIRI CALLS SETH FROM THE WELL OF SOULS GATEWAY TO THE NETHERWORLD.

LOOK INTO THE SOUL OF ETERNITY
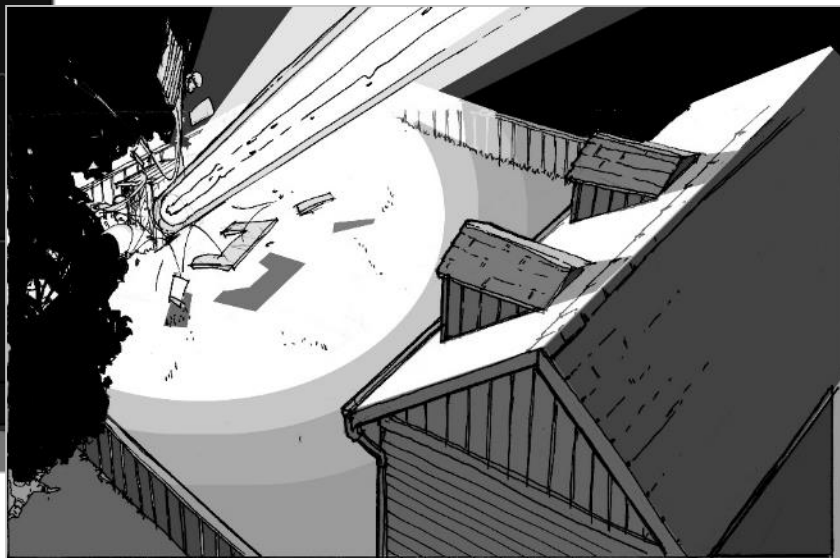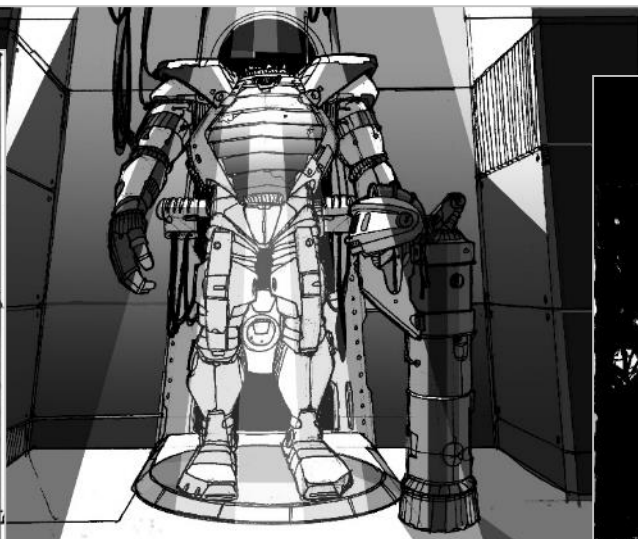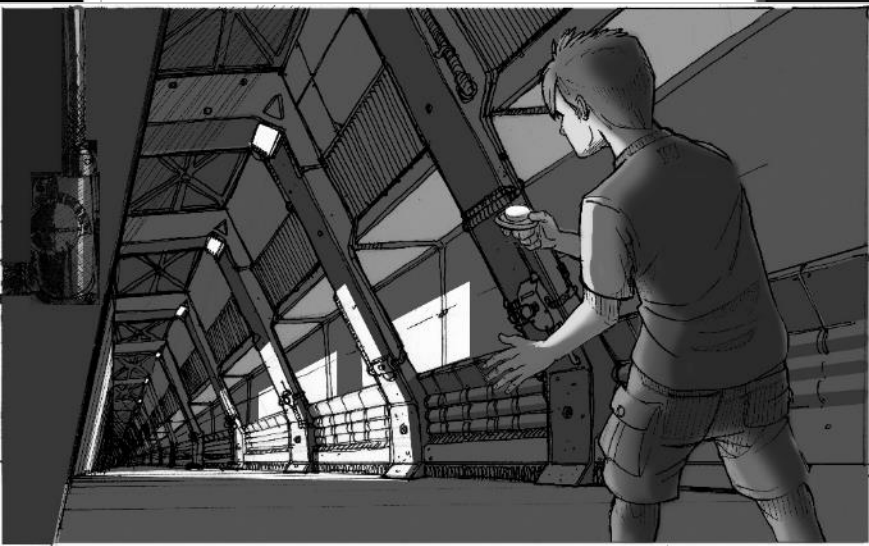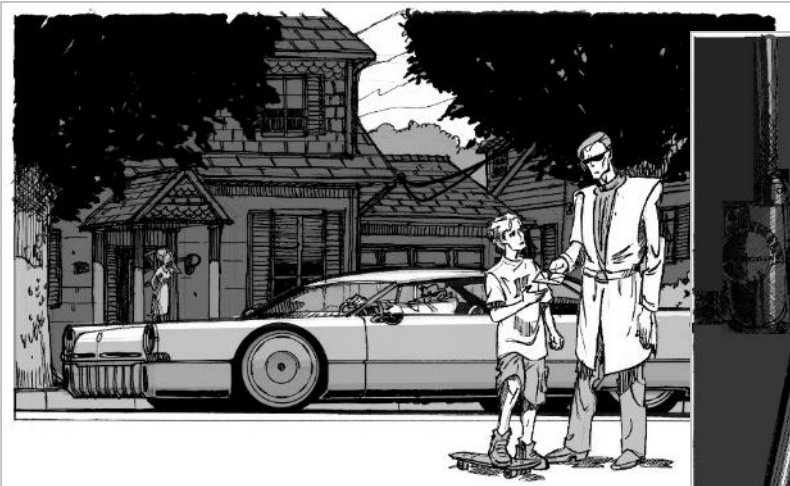
Storyboards for: Intergalactic Bounty Hunter (IBH) + TUT – IBH characters by David Molina

Story

Every image tells a story. These sketches for **Intergalactic Bounty Hunter** were created to explore the main narrative layers of the game levels. The extensive side notes also articulate functional and engineering concepts using existing and projected possible technology. All of this is motivated by the need to move beyond superficial aesthetic into deep industrial design.
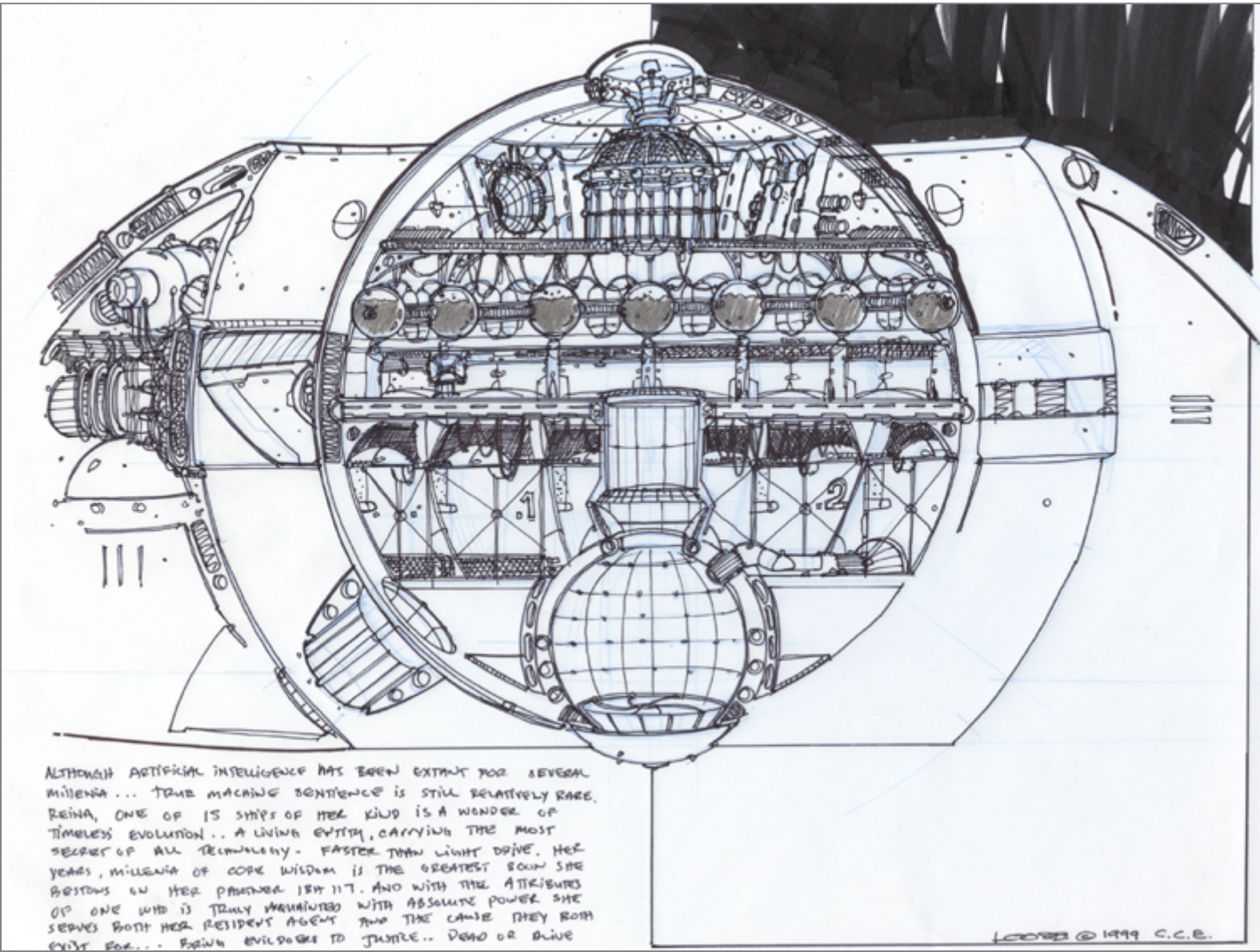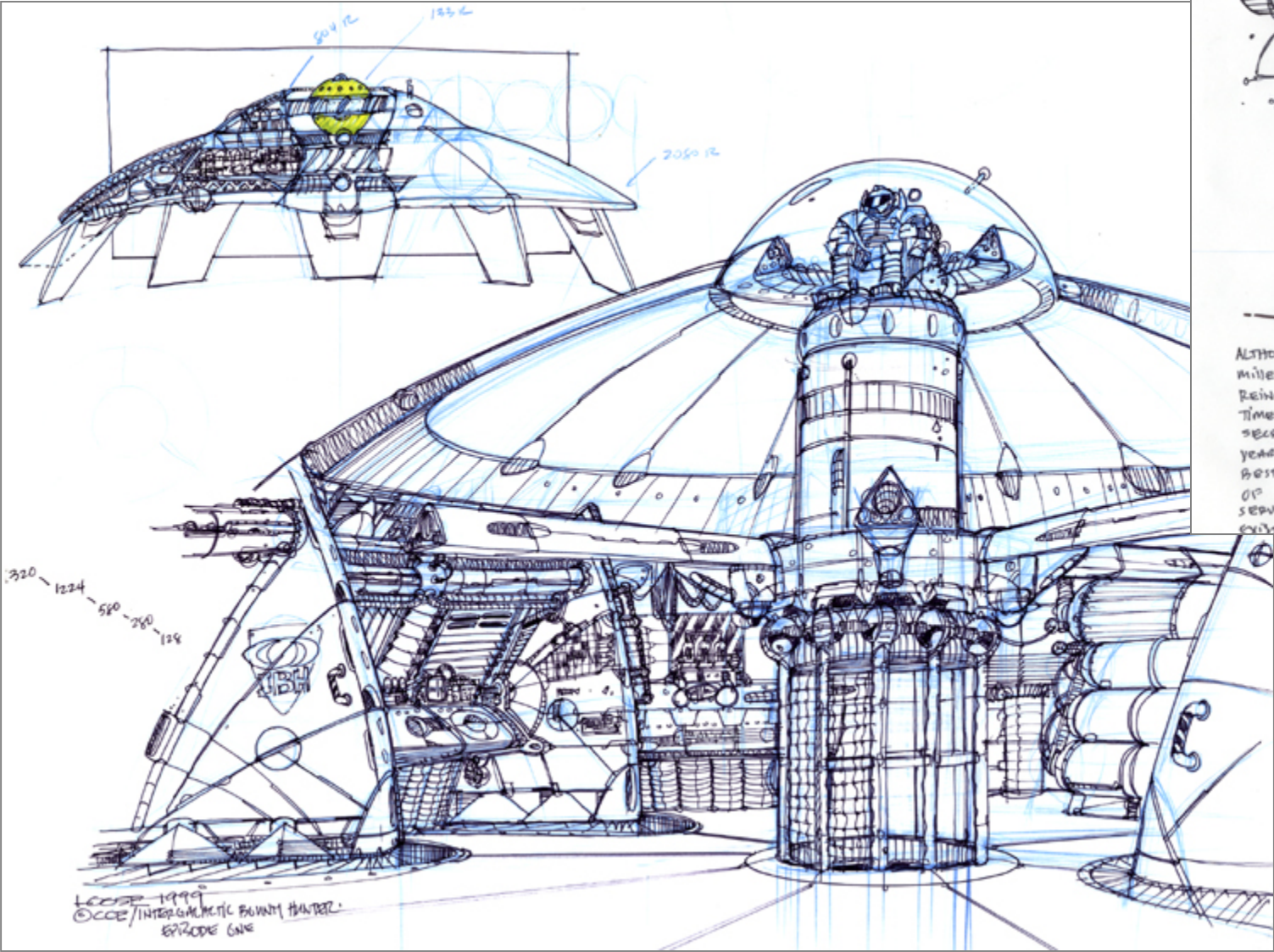
Industrial Design

I approach everything I work on as if it were an actual product, vehicle or building/environment with realistic and exacting engineering requirements. The "thing" has to "work" - mechanically, aesthetically and intellectually.

Concepts for: Intergalactic Bounty Hunter

REINA ON LANDING PLATFORM

ARCTURAS-TOMBSTONE: ONCE A BOOMING MINING/PROCESSING FRONTIER TOWN IN THE KESSELRAT REGION OF UNCHARTED PERIMETER: OORT/MAXIM GALACTIC QUADRANT, A-T IS NOW ABANDONED TO THE GIANT INDIGENOUS REPTILE/ARACHNOIDS AND THE DEMON/WRAITH'S RESPONSIBLE FOR ITS DESERTION.

UNDERGROUND TRANSIT STORAGE - 5 MAJOR PREFAB UNITS

ANCIENT ALIEN POWER TRANSMISSION STATION. POSSIBLE PORTAL GENERATOR- SOURCE OF WRAITH DEMONS

DECOMPRESSION/HOSPITAL - 3 INSTALLED AUTOMATED UNITS!

CAVE IN

DEEP MINING TECHNOLOGY USES PROGRAMMABLE ROBOTICS FOR LONG TERM MINING ACTIVITIES. HUMANOID CREATURES ARE USED BUT CAN ONLY BE UNDER FOR 8-10 HOURS AFTER WHICH THEY MUST DECOMPRESS FOR THE SAME AMOUNT OF TIME AT 3 STATIONS ON THE TRANS TUBE TO THE SURFACE.

OUTPOST MINING NODES ARE BASICALLY HOLLOWED SPHERES THAT THE HYPER PLASTIC ROCK/ORE TRAINS INTO. UNDER INTENSE SUBSURFACE GRAVITY WAVES, THE "PULSE" OF THE PLANET, THE LIFE BLOOD OF THE PLANETS BEATING HEART (CORE) IS DRAINED OF ITS HIGH GRADE ORE.

MOLTEN ROCK/ORE CONTAINING VALUABLE HEAVY ELEMENTS ARE PUMPED THROUGH FEEDER TUBES INTO THE "SPIDER"

THE "SPIDER" IS A MOVEABLE MINE HEAD THAT SERVES 2 PURPOSES. FIRST TRANSPORT "CORE" ENERGY TO THE SURFACE USING FISSURES FROM SUBTERRANEAN VOLCANO-LIKE STRUCTURES - SECOND PROVIDE TRANSPORT OF THE "MINED" HYPER PLASTIC ORE FROM THE OUTPOST MINING NODES.

THE MAIN FACILITY IS ACTUALLY A VERY POWERFUL SPACECRAFT. IT'S ALSO A REFINERY & SHELTER TO A CREW/CLASS OF APPROXIMATELY 8,000. THE MOVABLE REFINERIES ARE ABLE TO "MINE-OUT" A WORLD SUCH AS TOMBSTONE IN ABOUT 3 YEARS. GO ONLY FOR THE MOST HIGH OF ORE LEAVING THE TAILINGS. MINERS FED UP WITH SHIPBOARD IMMEDIATELY BUILD A SHANTY IN THE SHADE OF ONE OF THE MASSIVE THRUSTER OUT...

TOP SECRET - UNDER CONSTRUCTION

MANEUVERING THRUSTERS USED TO POINT THE SUBSPACE ARRAY FOR TRANSMISSION

ORIGINAL SUBSPACE TRANSMITTER WAS ASSEMBLED FROM THE "SALVAGED" TEN DECKS OF MARRONED/PIRATED SPACECRAFT...

THE FIRST ASSEMBLAGE OF PIRATED SPACECRAFT IS KNOWN AS "HOLE IN THE WALL" AN IMPENETRABLE WARREN OF HULL HEAVY TITANIUM, IT'S HOME TO ANY AND ALL FUGITIVES! HOLE IN THE WALL ALSO IS HOME TO THE BLACK MARKET OF C.T. IF YOU'RE LOOKING FOR SOMEONE ON THE LAM FROM THE LAW, HOLE IN THE WALL...

Concepts for: Intergalactic Bounty Hunter

GPS Penal Colony

SHIVA-COATYL

Architecture – Large Scale Structures

Before studying Industrial Design I studied civil engineering courses in preparation to be an architect. Buildings fascinate me.
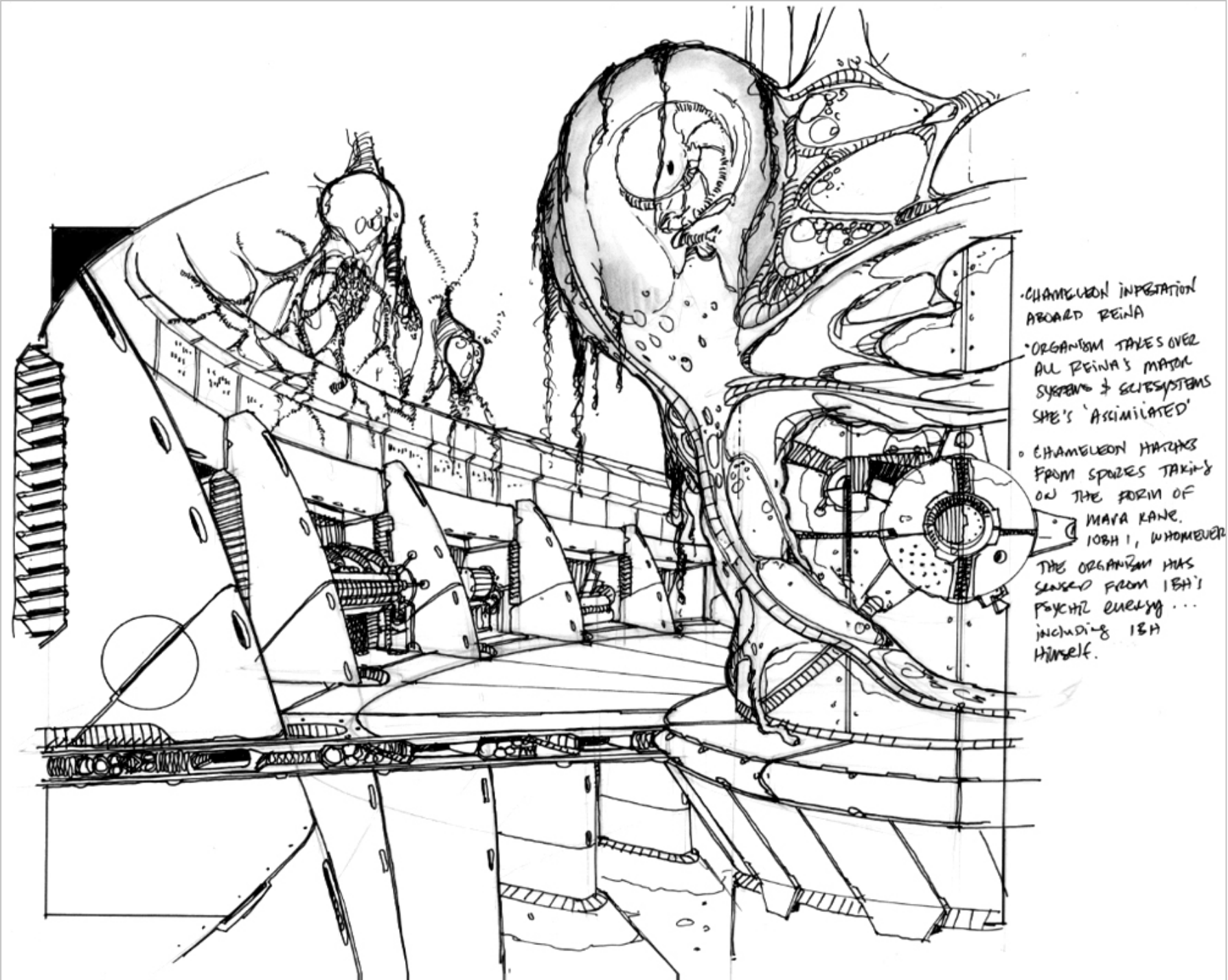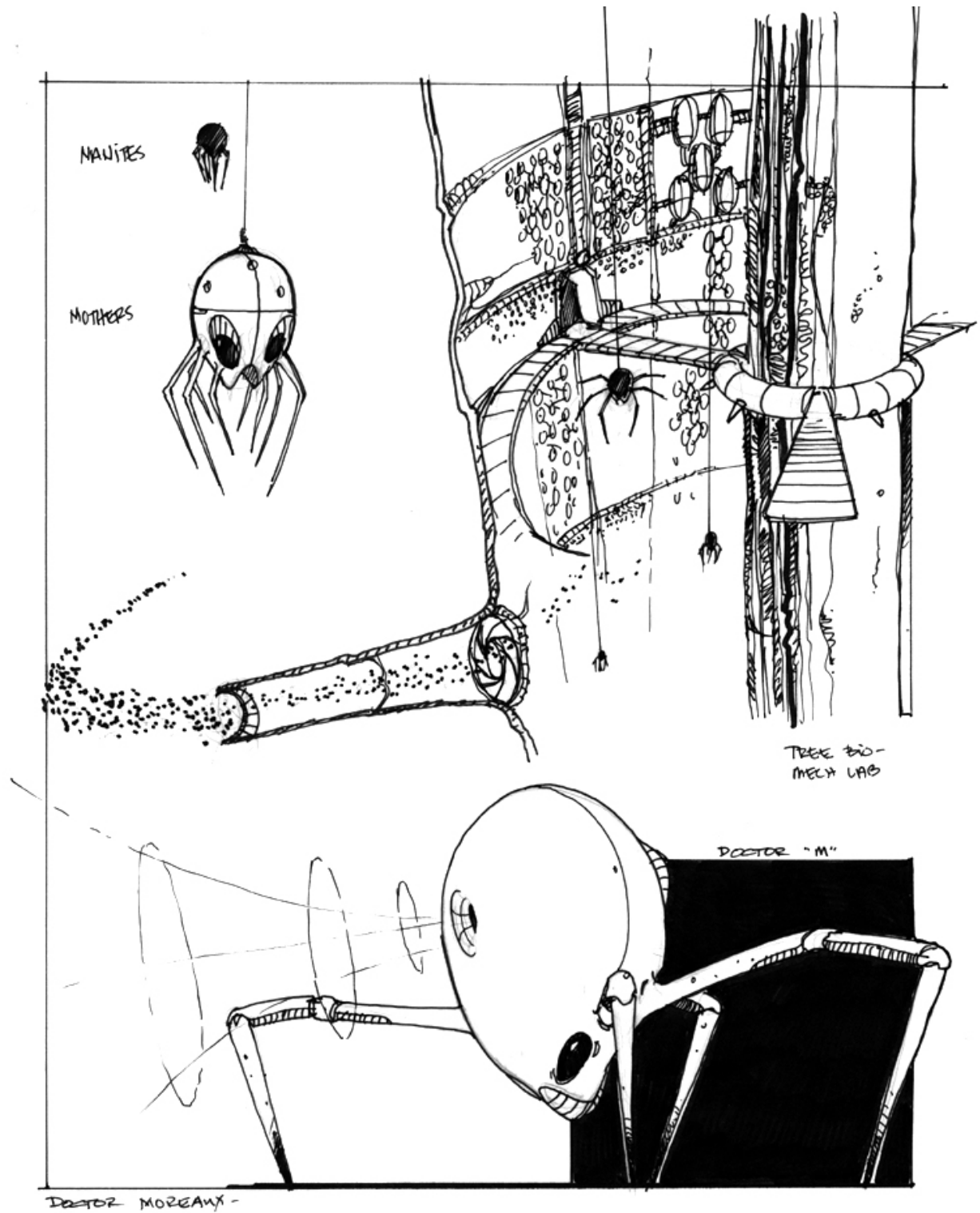
Concepts for: Intergalactic Bounty

NANITES

MOTHERS

TREE BIO-
MECH LAB

DOCTOR "M"

DOCTOR MOREAUX

- CHAMELEON INFESTATION ABOARD REINA
- ORGANISM TAKES OVER ALL REINA'S MAJOR SYSTEMS & ECOSYSTEMS SHE'S 'ASSIMILATED'
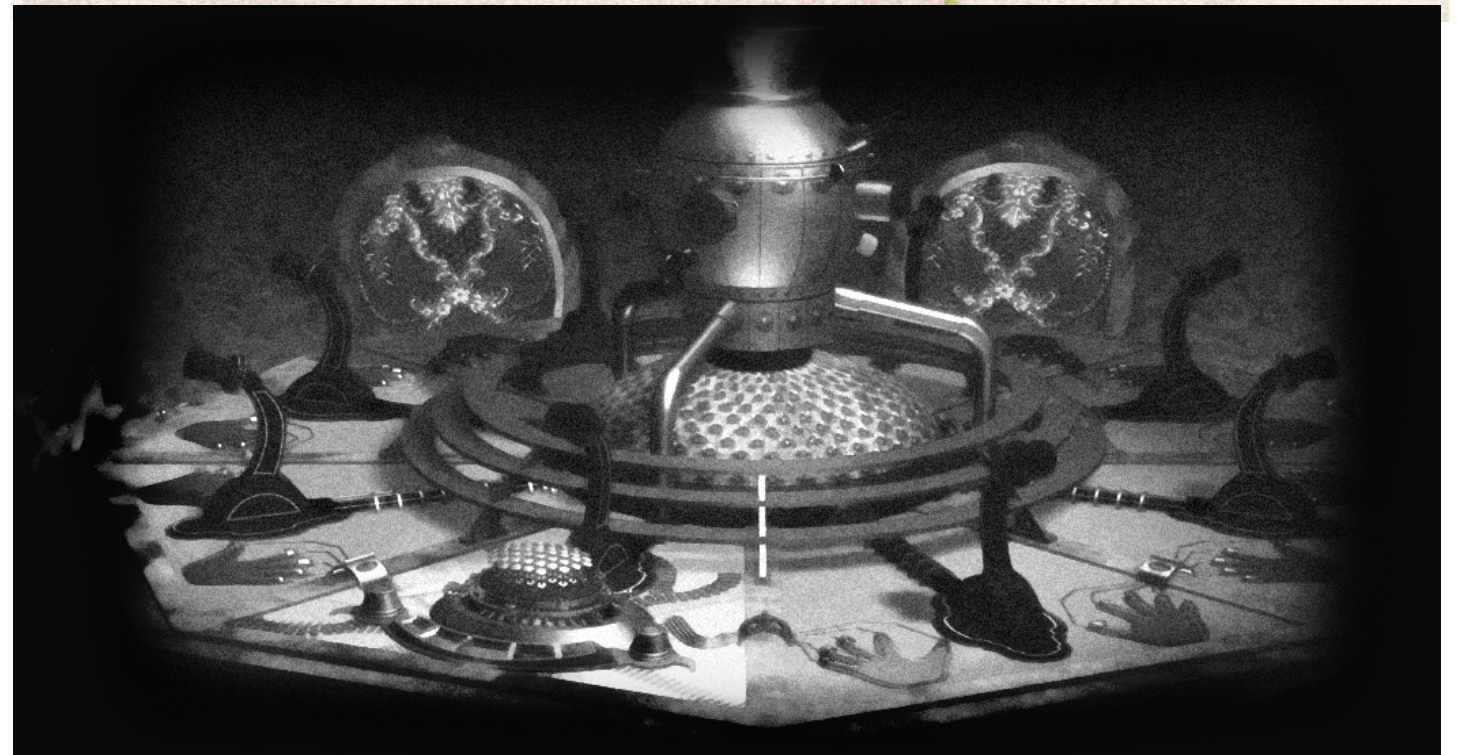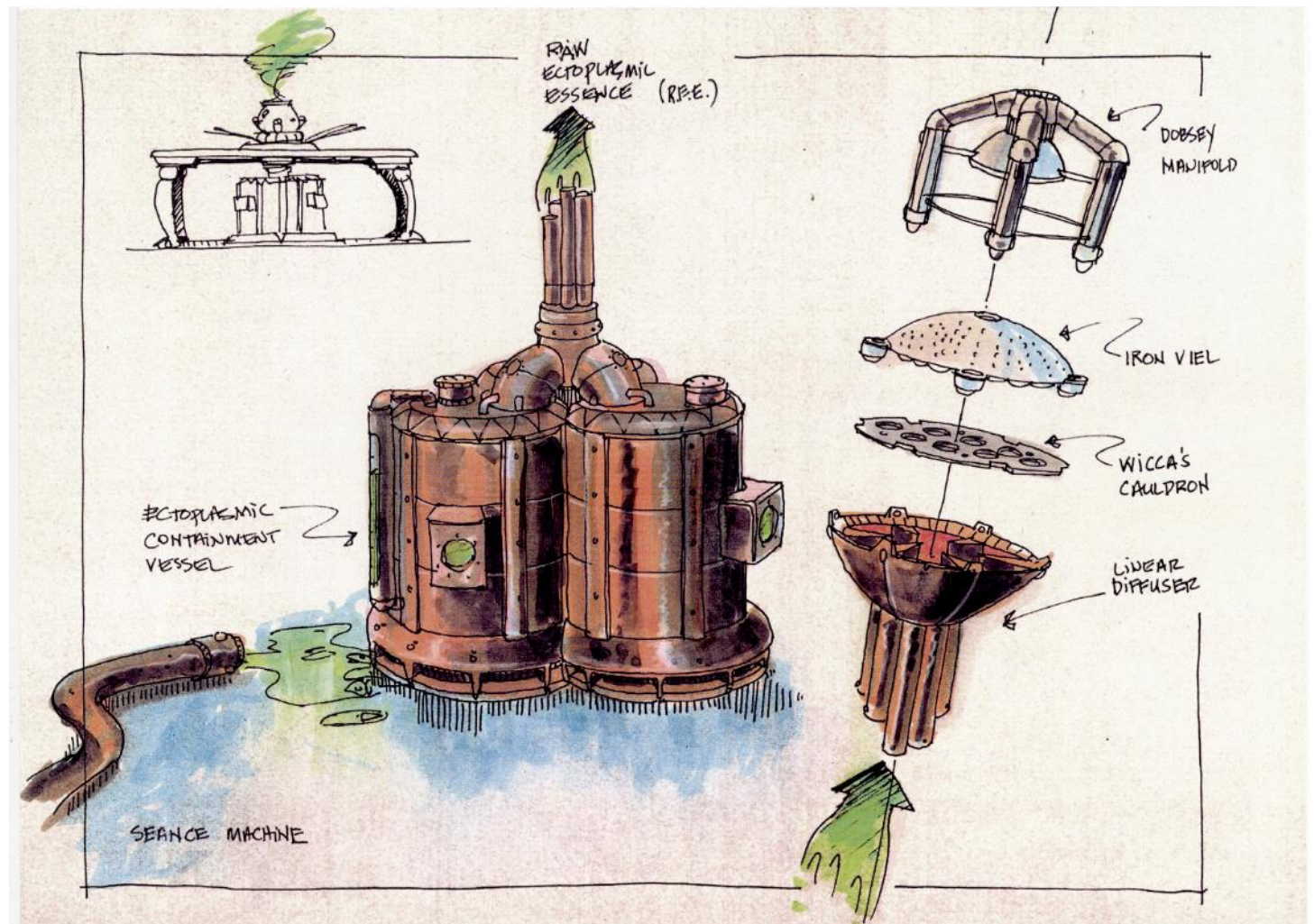- CHAMELEON HATCHES FROM SPORES TAKING ON THE FORM OF MAYA KANE, IBH', WHOMEVER THE ORGANISM HAS SENSED FROM IBH'S PSYCHIC ENERGY... INCLUDING IBH HIMSELF.

Concepts for: Intergalactic Bounty Hunter

Deep Industrial Design

…starts with a core understanding of how things work, their materials and construction. Understanding these 3 basic components also informs how things look when they are destroyed. These concepts for a game featuring Harry Houdini propose supernatural machines powered by raw ectoplasm essence – captured from the living and the dead. Visualizing the product in context is critical to its success as an element in the environment. The models for the Séance Machine were created by a 3D artist using sketches like the one on the right as a guide.

RAW ECTOPLASMIC ESSENCE (R.E.E.)

DOBSEY MANIFOLD

IRON VIEL

WICCA'S CAULDRON

LINEAR DIFFUSER

ECTOPLASMIC CONTAINMENT VESSEL

SEANCE MACHINE

Concepts for: Escape From Beyond

THE REE MACHINE WAS THE FORERUNNER OF THE SEANCE MACHINE. IT WAS THE PROTOTYPE TEST "BED" FOR MANY OF THE NECROMANTIC TECHNOLOGIES THE NEW RIVER GROUP PIONEERED. USING A PUMP A VACUUM WOULD BE GENERATED IN THE BELL JAR. A MIXTURE OF REE & SHLFURIC ACID MOBILPHASE WOULD THEN BE INJECTED INTO THE VACUUM CREATING A UNIFORM DISPERSEMENT OF REE GAS. THIS REE "CLOUD" GLOWING WITH ITS OWN MACABRE ENERGY WOULD FILL THE BELL JAR COMPLETELY LOOKING FOR A WAY TO ESCAPE AS IF IT WERE ALIVE. AN ELECTRIC CURRENT (DC) OF HIGH VOLTAGE WOULD THEN BE INTRODUCED INTO THE BELL JAR PRODUCING A FLOURESCING PHENOMENON NOT UNLIKE A VACUUM-TUBE. USING THE FOCUS CONTROLS TO VARY THE ELECTRIC CURRENTS ATTRIBUTES THE REE CLOUD COULD BE FORCED TO COALESCE AROUND THE METAL SKULL FILAMENT IN THE JAR CENTER. ALTHOUGH RECEPTION WAS POOR & MESSAGES GARBLED H.H. DID HAVE MUCH SUCCESS IN ACCESSING THE DEAD WITH THIS MACHINE.

SPEAKER

PLATINUM SKULL FILAMENT

DOROTHY MAN. WITCH'S CAULDRON

MOBILPHASE

REE

SPEAK HERE TO TALK TO THE DEAD

FOCUS CONTROLS

OBSERVATORY

Concepts for: Escape From Beyond

Tiberium ORCA

As the Oculus opens, an ancient KANOKA disk inscribed with the symbol of each metru is revealed

The entire Questing disk rotates to the next metru position. Note that the oculus remains level,

A_ Light Stone
B_ Light Stone Bracket
C_ Oculus Axel
D_ Questing Disk Overlay
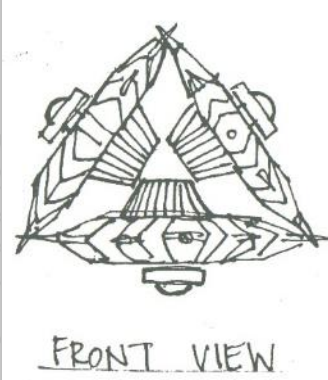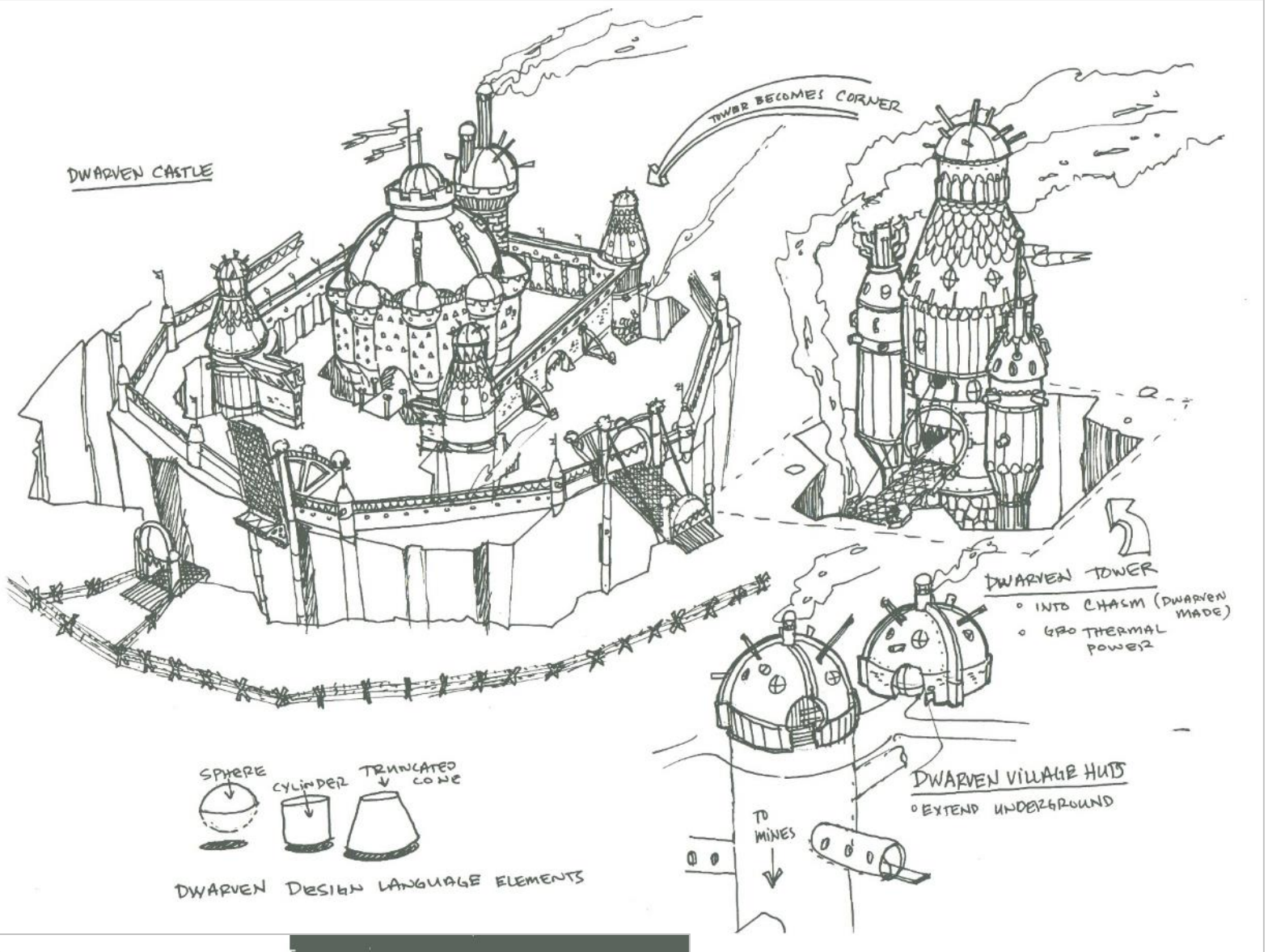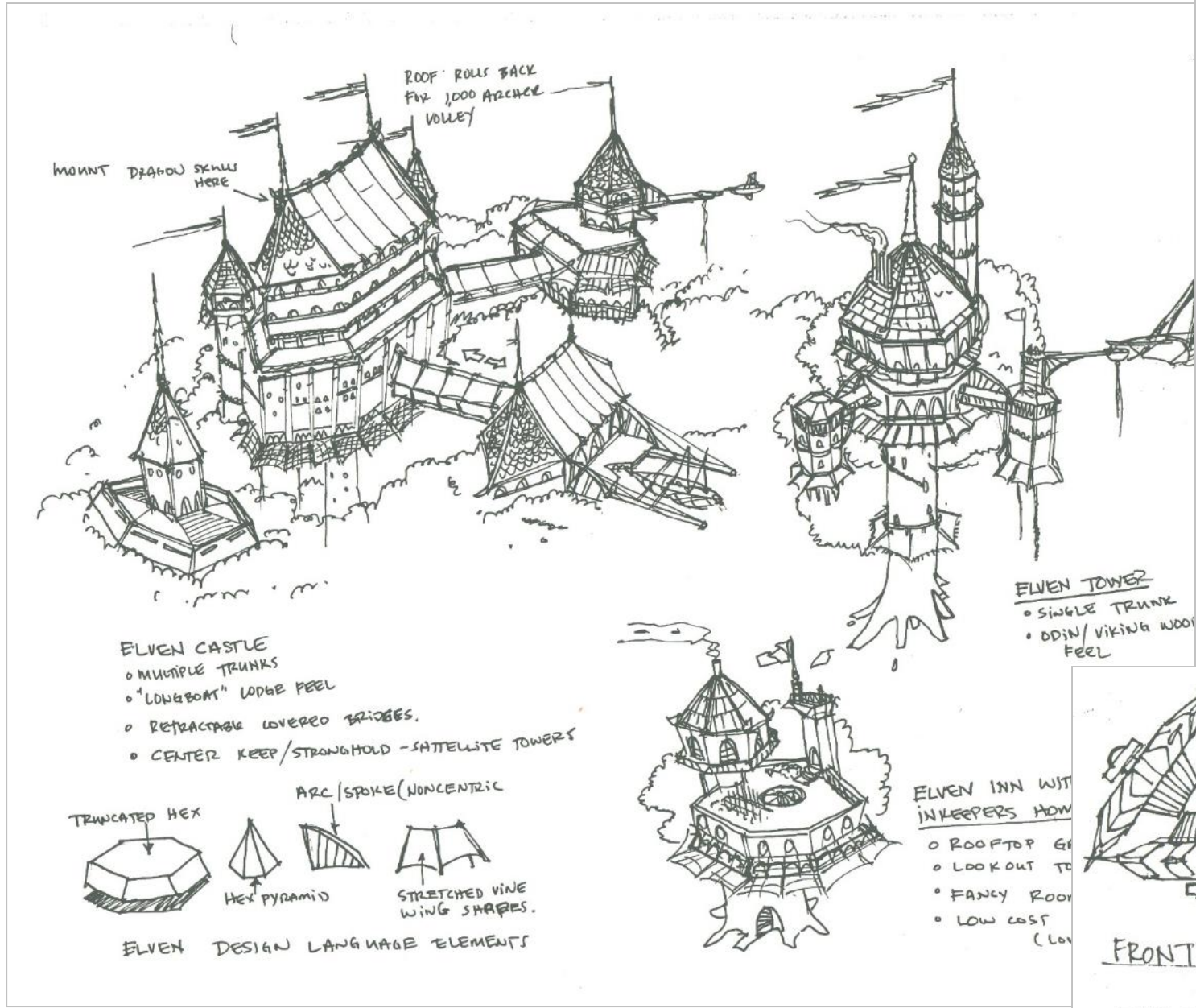E_Questing Disk
F_Oculus
G_Oculus Orbit
K_ Kanoka Disk

Deep Industrial Design

…helps visualize the pieces and parts, construction and so forth. Exploded views are great tools for describing engineering.
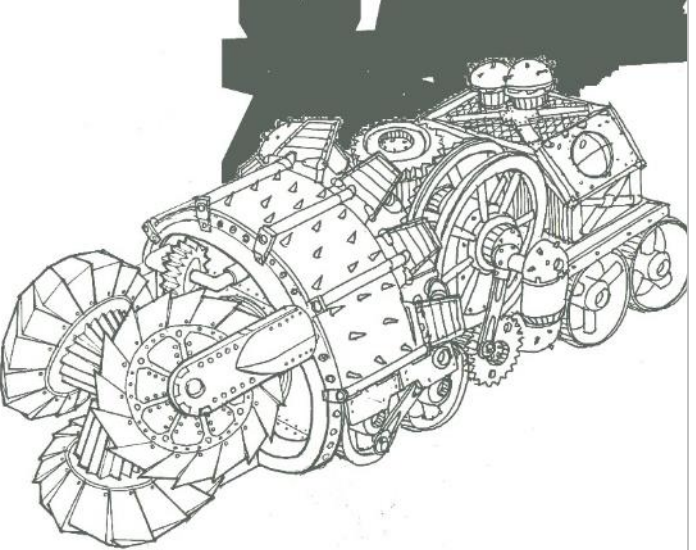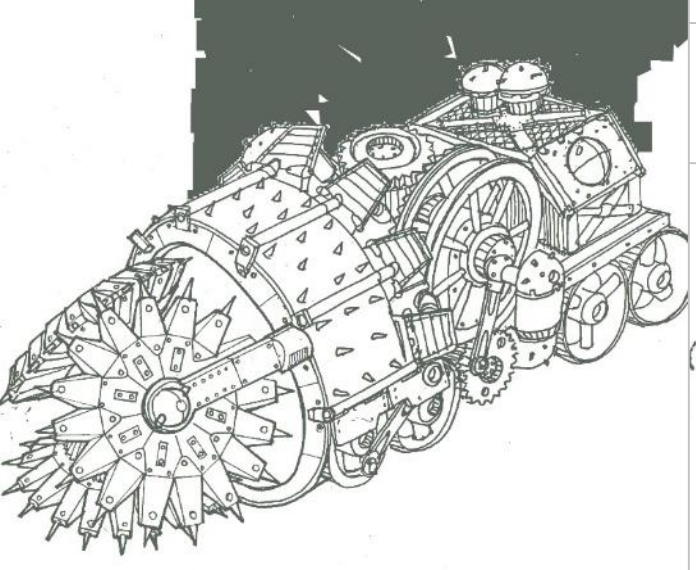
The Questing Oculus in Bionicle: Legends of Metru Nui was a concept that required a complex animation. The exploded view helped the animators to be able to animate its function correctly.

Modularity

Using repetitive elements to helps define a consistent visual language. These sketches for a MMORPG developed by FASA (now owned by Microsoft) were created to define the aesthetic language for two of the factions in the game.
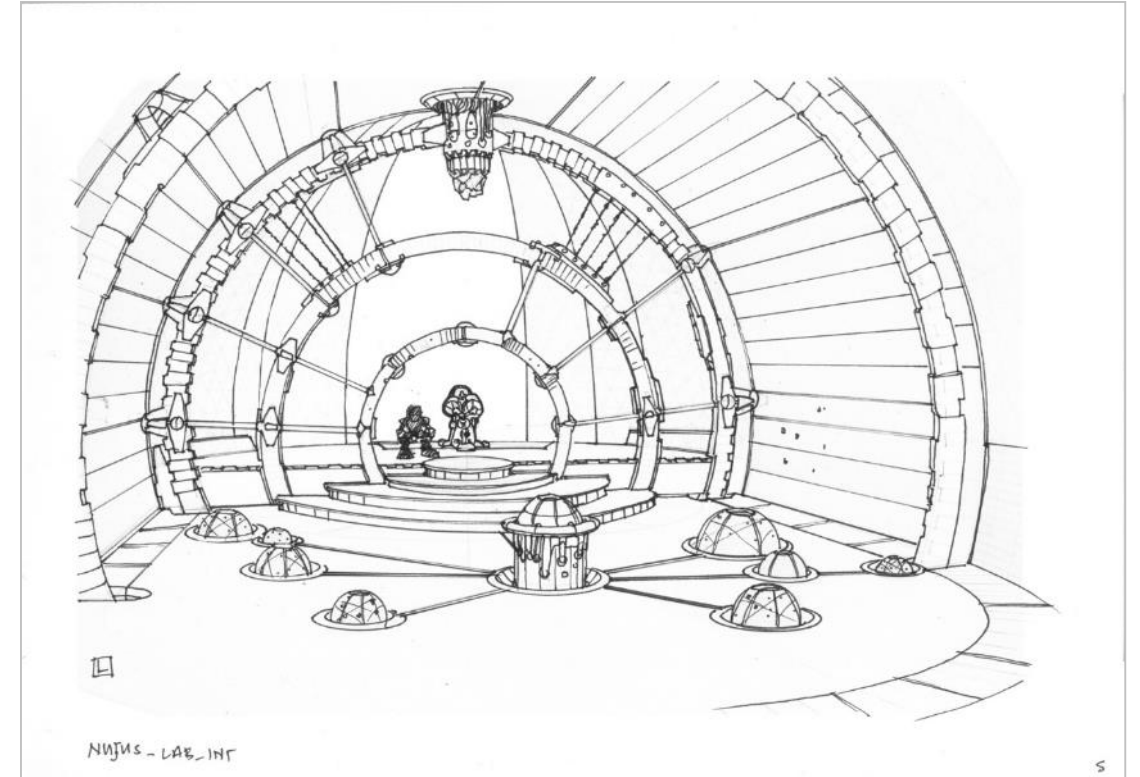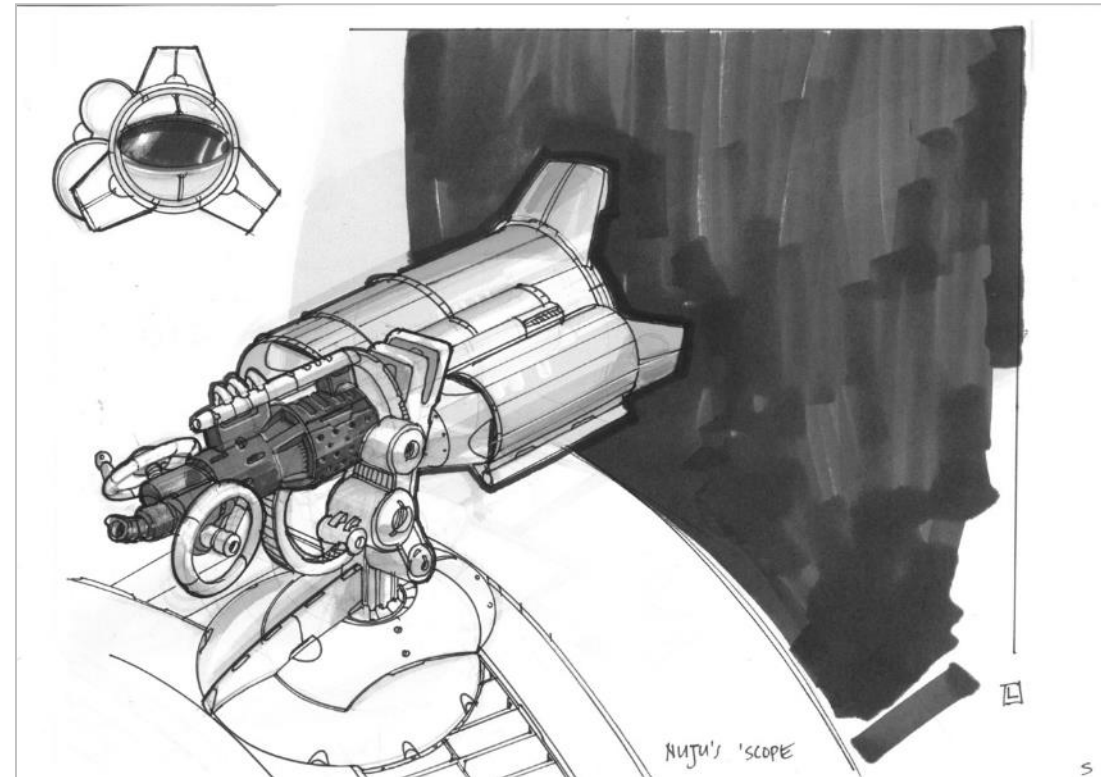

DWARVEN CASTLE

TOWER BECOMES CORNER

DWARVEN TOWER
- INTO CHALM (DWARVEN MADE)
- GEO THERMAL POWER

SPHERE CYLINDER TRUNCATED CONE

DWARVEN VILLAGE HUB
- EXTEND UNDERGROUND

TO MINES

DWARVEN DESIGN LANGUAGE ELEMENTS

ROOF ROLLS BACK FOR 1,000 ARCHER VOLLEY

MOUNT DRAGON SKULLS HERE

ELVEN TOWER
- SINGLE TRUNK
- ODIN/ VIKING WOOD FEEL

ELVEN CASTLE
- MULTIPLE TRUNKS
- "LONGBOAT" LODGE FEEL
- RETRACTABLE COVERED BRIDGES.
- CENTER KEEP/STRONGHOLD - SATTELLITE TOWERS

TRUNCATED HEX   ARC/SPOKE (NONCENTRIC)

HEX PYRAMID   STRETCHED VINE WING SHEETS.

ELVEN DESIGN LANGUAGE ELEMENTS

ELVEN INN WITH INKEEPERS HOME
- ROOFTOP G...
- LOOK OUT T...
- FANCY ROO...
- LOW COST
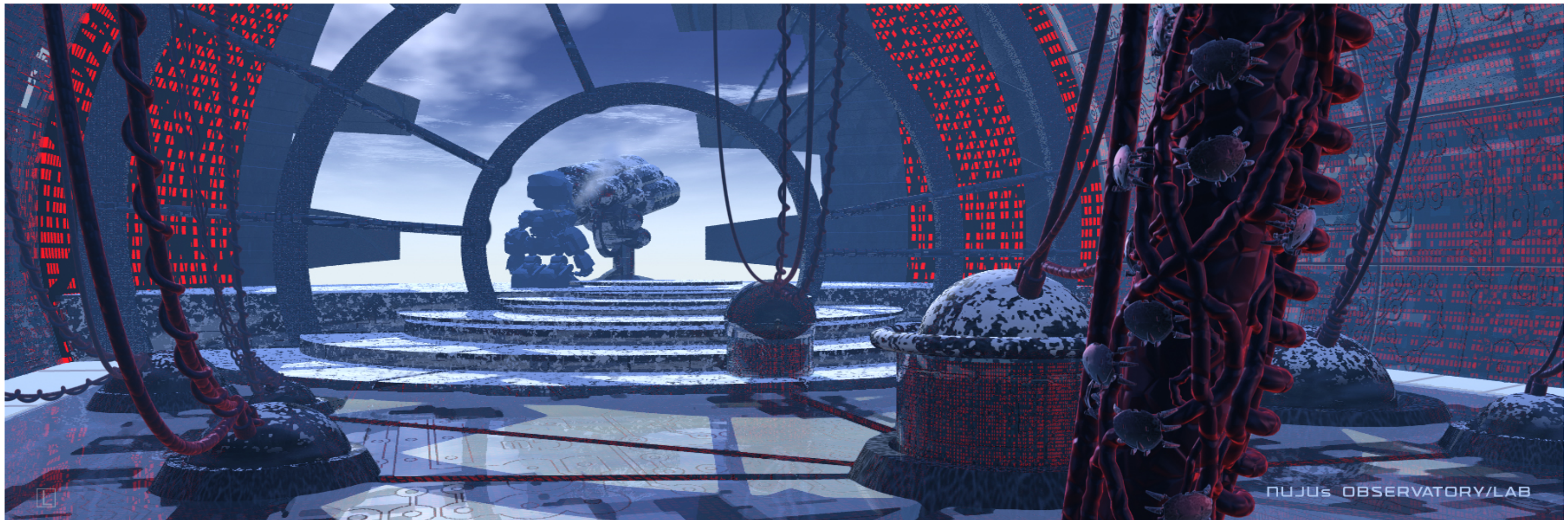
FRONT VIEW

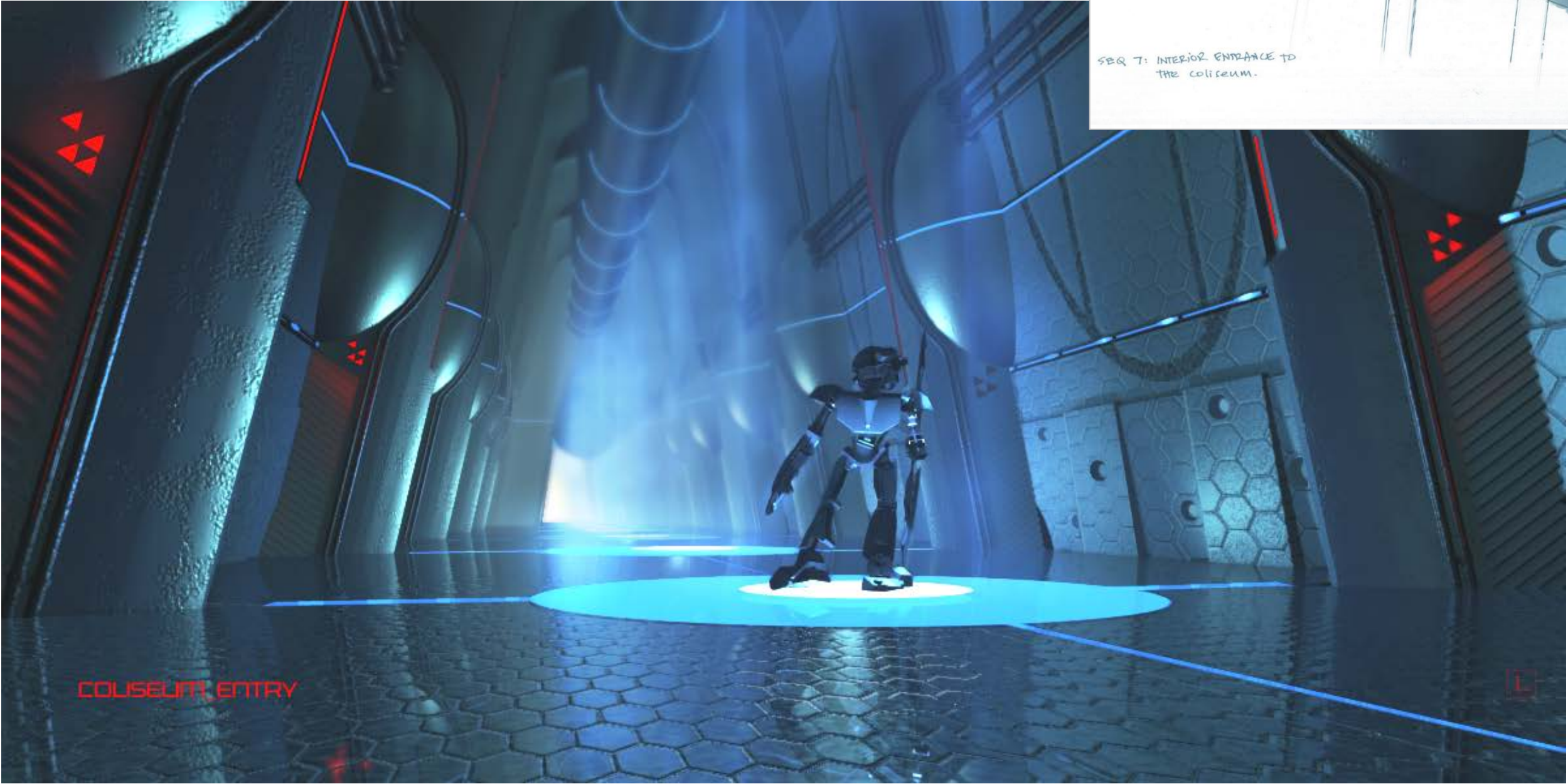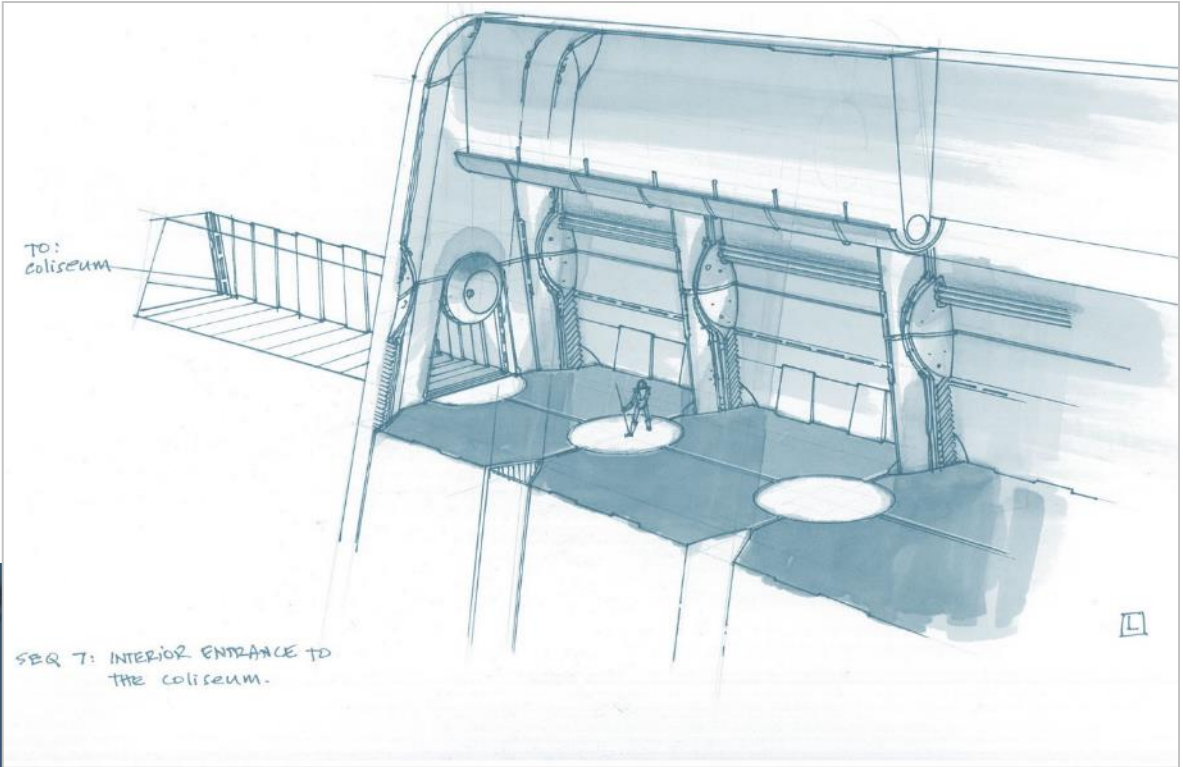DWARVEN MINING MACHINE

Concepts for: Dragons

CG/3D

I have an enduring and long love of 3D and use it extensively in my work. Using 3D tools creates the opportunity to go beyond the limitations of 2D sketches and reveals the changes needed to achieve the desired functional and aesthetic results. These images from my work as production designer, art director and CG supervisor for the Bionicle direct to video features show the translation from sketch to digital image.
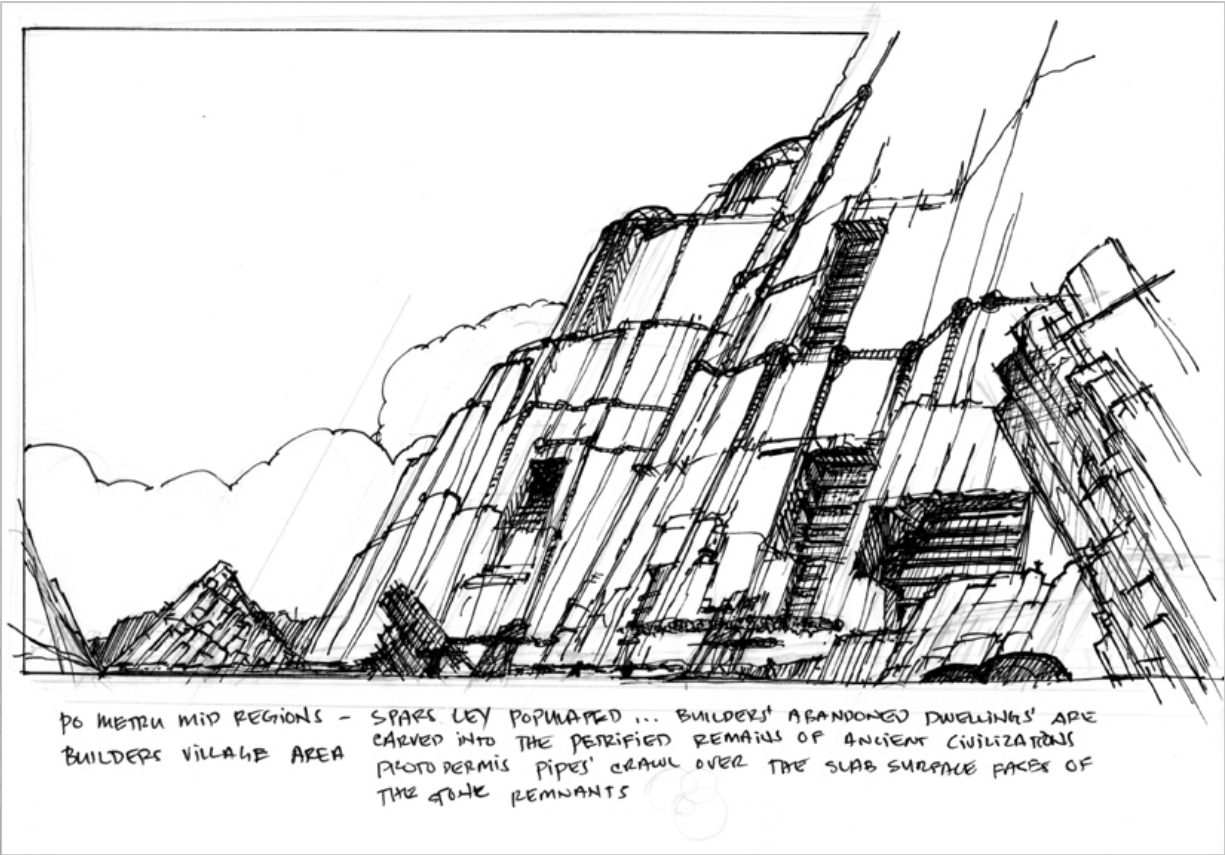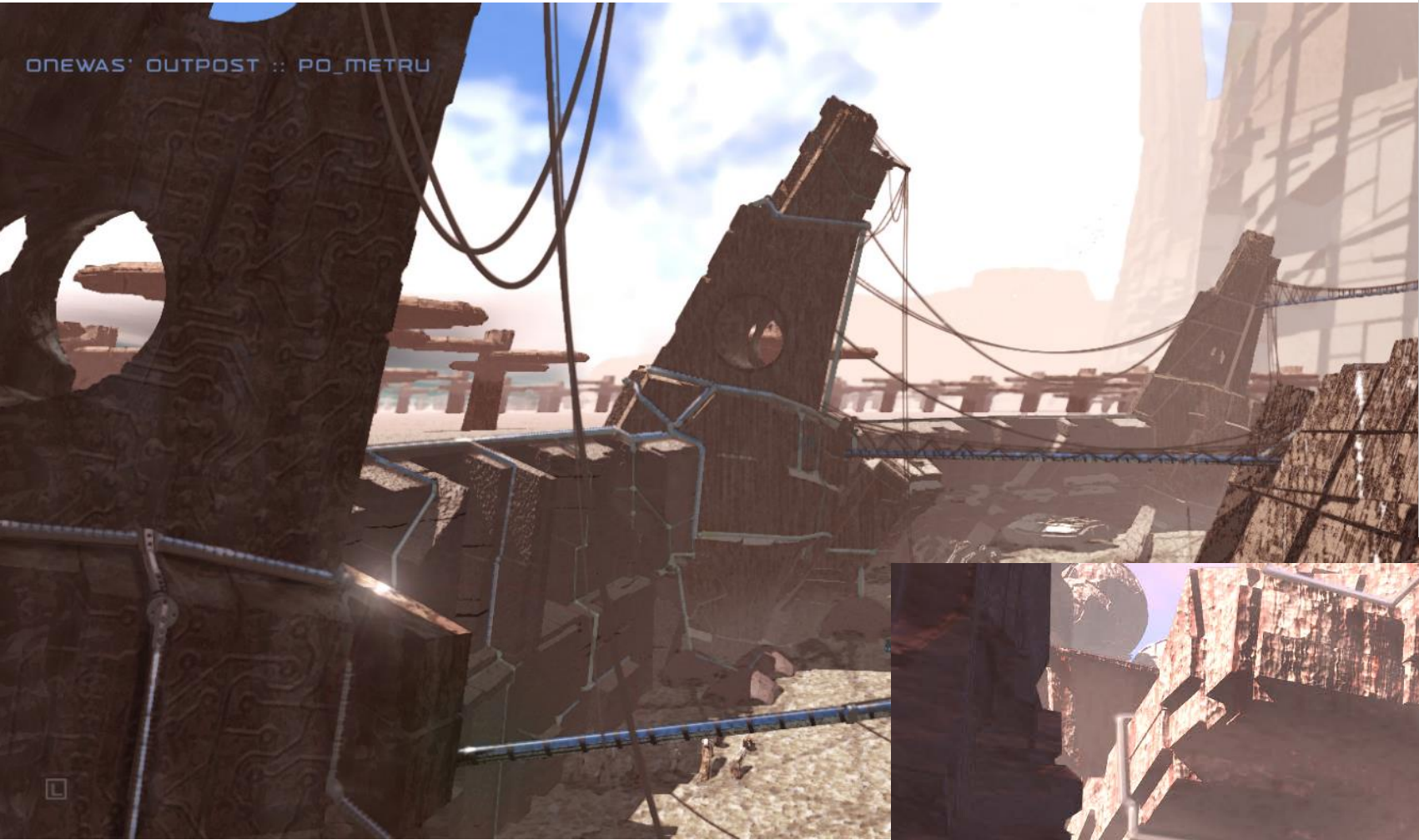
Concepts for: Bionicle: Legends of Metru

NUJU'S 'SCOPE

NUJUS - LAB_INT

NUJUs OBSERVATORY/LAB

Concepts for: Bionicle: Legends of Metru Nui

TO:
coliseum

SEQ 7: INTERIOR ENTRANCE TO
THE COLISEUM.

COLISEUM ENTRY

Concepts for: Bionicle: Legends of Metru Nui

ONEWAS' OUTPOST :: PO_METRU

PO METRU MID REGIONS - SPARS LEY POPULATED ... BUILDERS' ABANDONED DWELLINGS' ARE CARVED INTO THE PETRIFIED REMAINS OF ANCIENT CIVILIZATIONS PROTO DERMIS PIPES' CRAWL OVER THE SLAB SURFACE FACES OF THE GONE REMNANTS
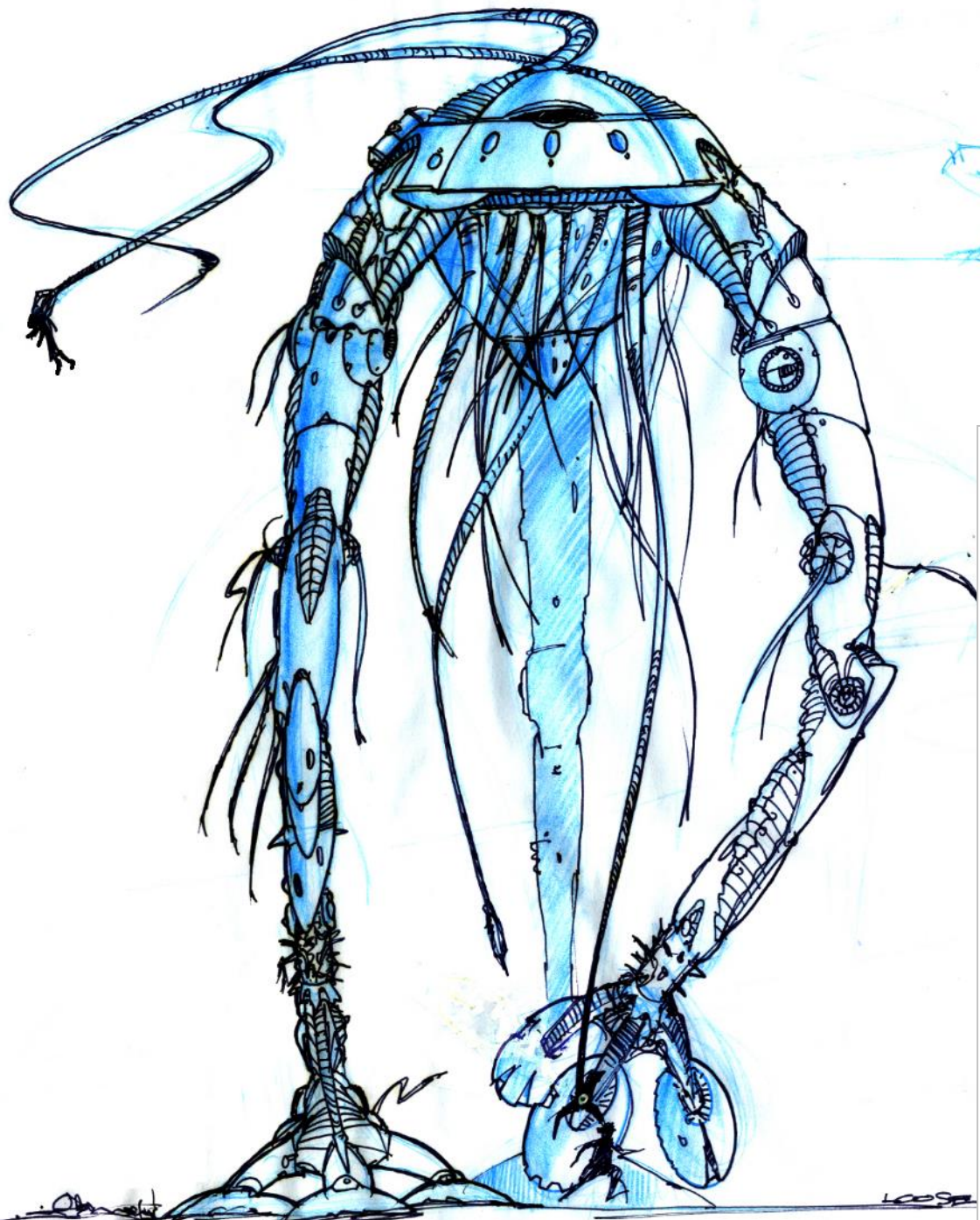
BUILDERS VILLAGE AREA

Bio-mechanical

Combining organic and mechanical elements is intriguing and fun. These concepts for the Martian walkers in HG Wells War of the Worlds – are well described in Wells own words. I simply tried to stay true to his description.

Concepts for: War of the Worlds

(PAGE 159) GIANTS IN ARMOR.. HUNDRED FEET HIGH WITH A MIGHTY HEAD IN A HOOD

(PAGE 149) ...THE BRAZEN HOOD THAT SURMOUNTED IT MOVED TO & FRO WITH THE INEVITABLE SUGGESTION OF A HEAD LOOKING ABOUT

(PAGE 148) .. A WALKING ENGINE OF GLITTERING METAL, ARTICULATE ROPES OF STEEL DANGLING FROM IT.

... HEELING OVER ONE WAY WITH 2 FEET IN THE AIR.. CAN YOU IMAGINE A MILKING STOOL TILTED AND BOWLED VIOLENTLY ALONG THE GROUND

(PAGE 129) ... SLOWLY A HUMPED SHAPE ROSE OUT OF THE PIT AND THE GHOST OF A BEAM OF LIGHT SEEMED TO FLICKER OUT FROM IT FLASHES OF ACTUAL FLAME.. LEAPING FROM ONE TO ANOTHER SPRANG FROM THE .. GROUP OF MEN. ... INEVITABLE SWORD OF HEAT

(PAGE 130) THE BLACK DOMELIKE

(PAGE 229) ALMOST ALL THE JOINTS OF THE MACHINERY PRESENT A COMPLICATED SYSTEM OF SLIDING PARTS MOVING OVER SMALL/BEAUTIFULLY CURVED FRICTION BEARINGS ... LONG LEVERAGES OF THEIR MACHINES ARE ACTUATED BY A SORT OF SHAM MUSCULATURE OF DISKS IN AN ELASTIC SHEATH ... QUASI-MUSCLES

(PAGE 229) THE WHEEL IS ABSENT ... IN THEIR APPARATUS SINGULARLY LITTLE USE IS MADE OF THE FIXED PIVOT OR RELATIVELY FIXED PIVOT ... CIRCULAR MOTIONS CONFINED TO ONE PLANE
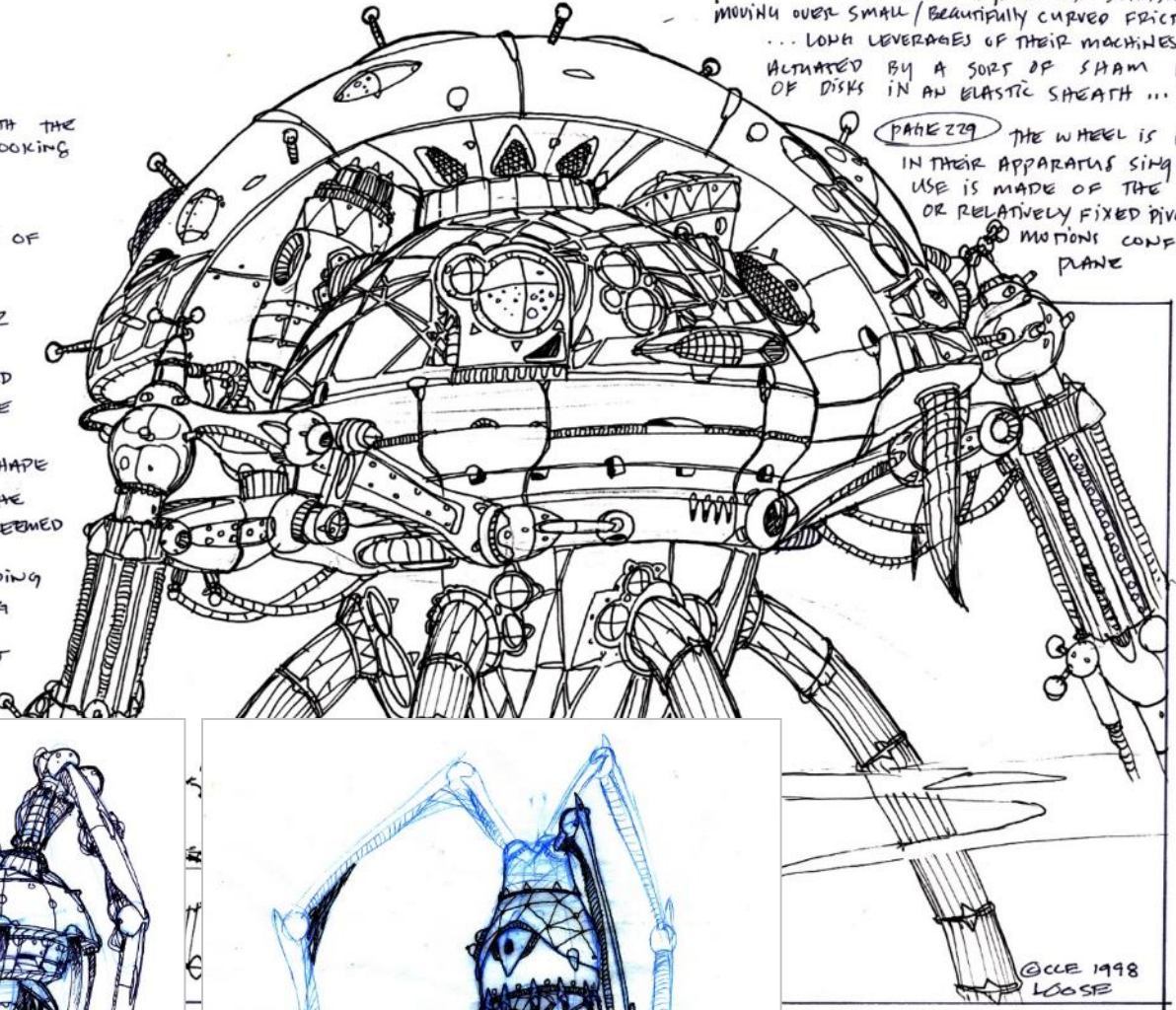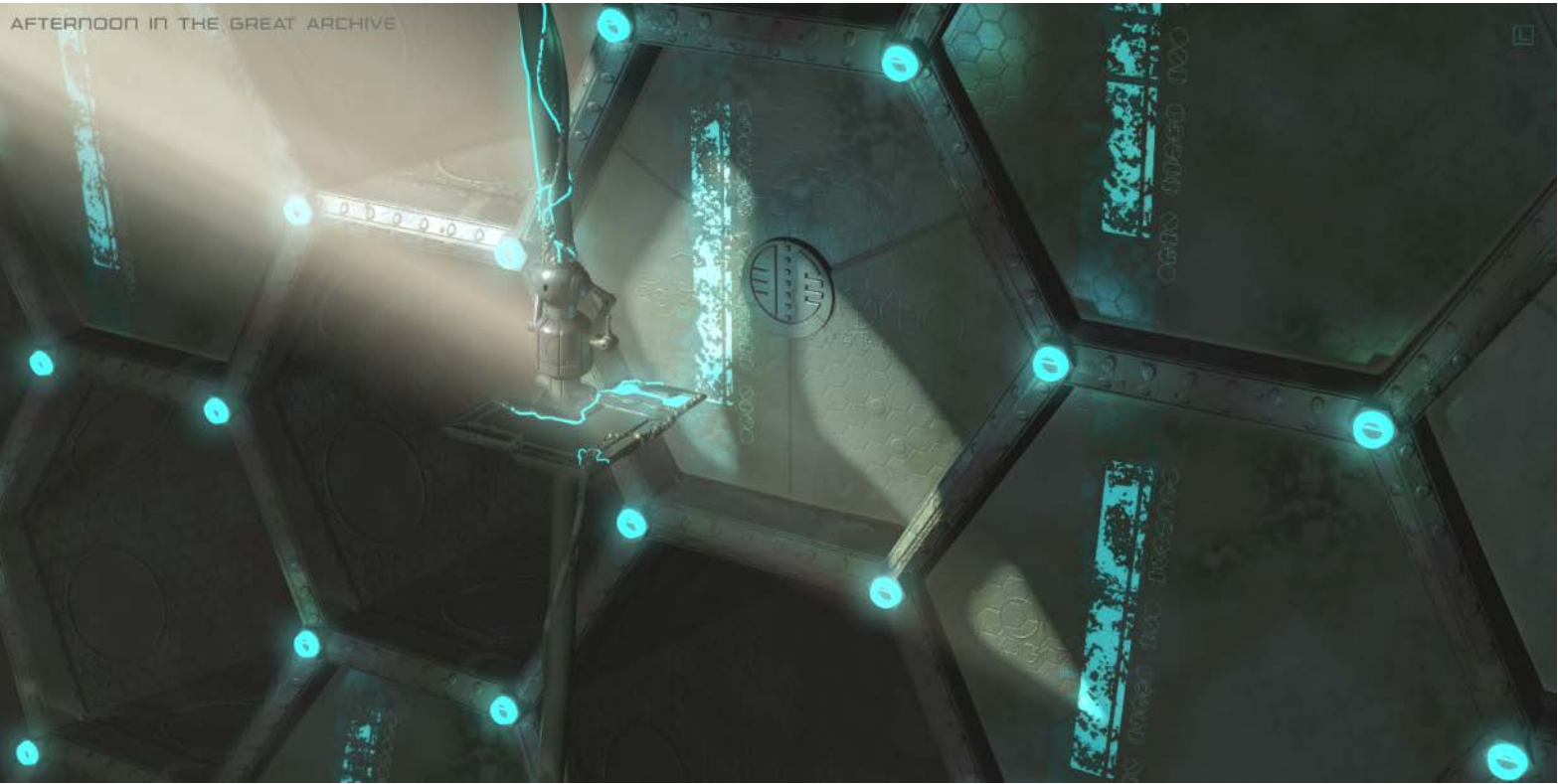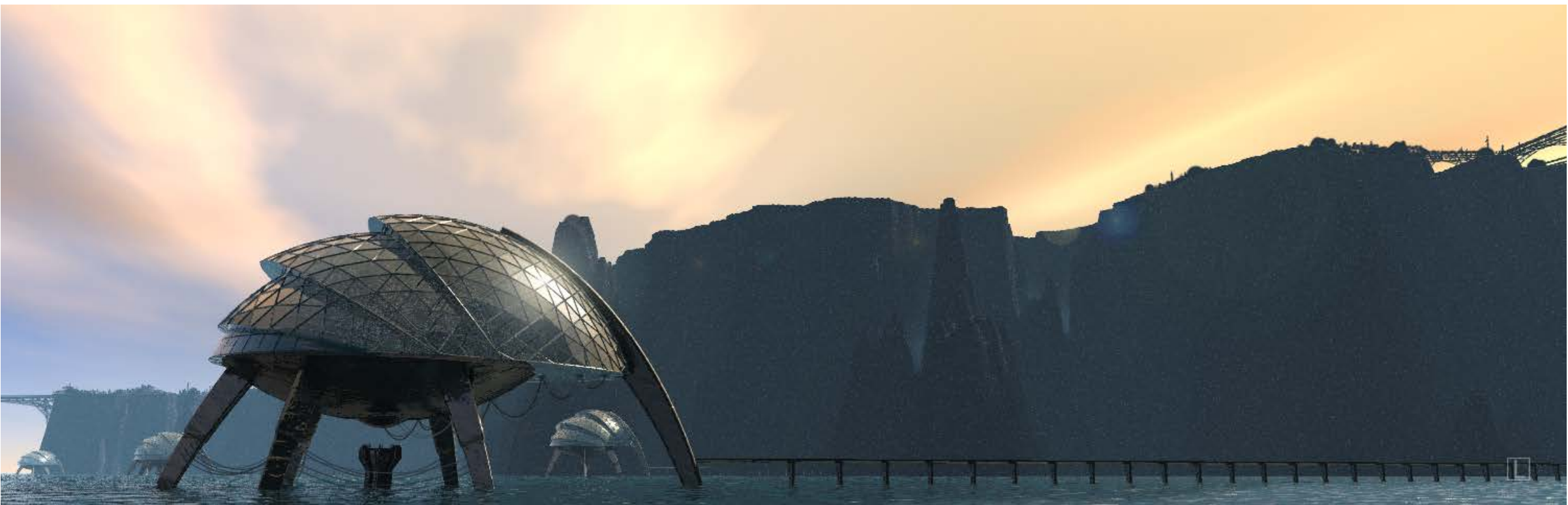
©CLE 1998 LOOSE

MACHINES AS DESCRIBED BY WELLS
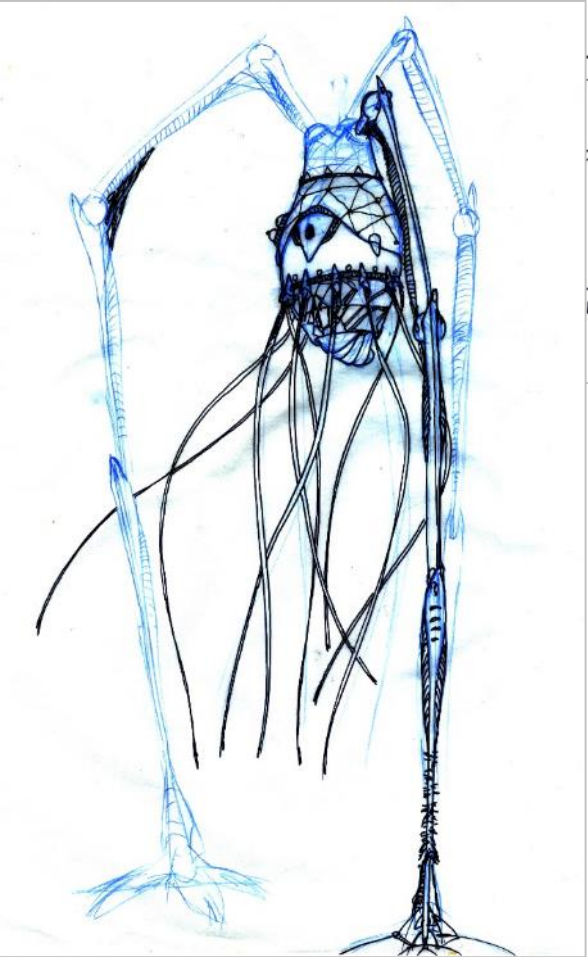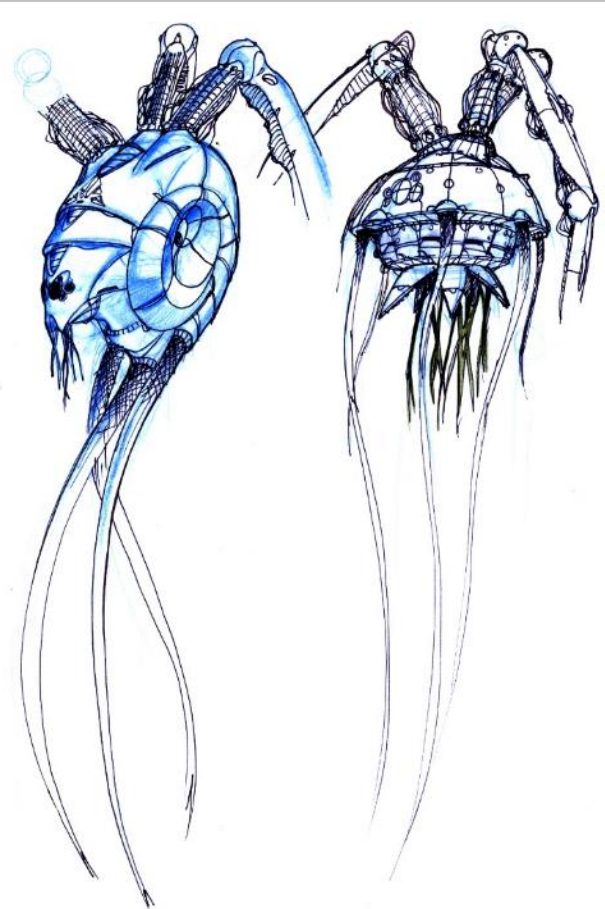
Lighting

I think about lighting all the time I am working. These production paintings for Bionicle set the lighting direction for the final shots in the film – they were also cut up into layers and used as establishing shots.

Concepts for: Bionicle: Legends of Metru Nui

Concepts for: Bionicle: Leg...

Texture

Grit, wear and tear, using microscopic scans of bones to create holes etc. – texture development is a fantastic way to bring concepts to life…real life. And reduce the CG-ness of CG.

VAKAMAs ANVIL

NOTES:

ADD SIMILAR DETAIL TO ALL
SURFACES IN THE CLOSE-UP
SHOTS: SUCH AS
TABLE TOPS, FLOORS,
WALLS, AND SO FORTH.

_RIVETS

_HEX PATTERNS AND DETAIL LINES

_OLD, WORN, USED SURFACES

_ DISCOLORED SURFACES

Texture study for: Bionicle: Legends of
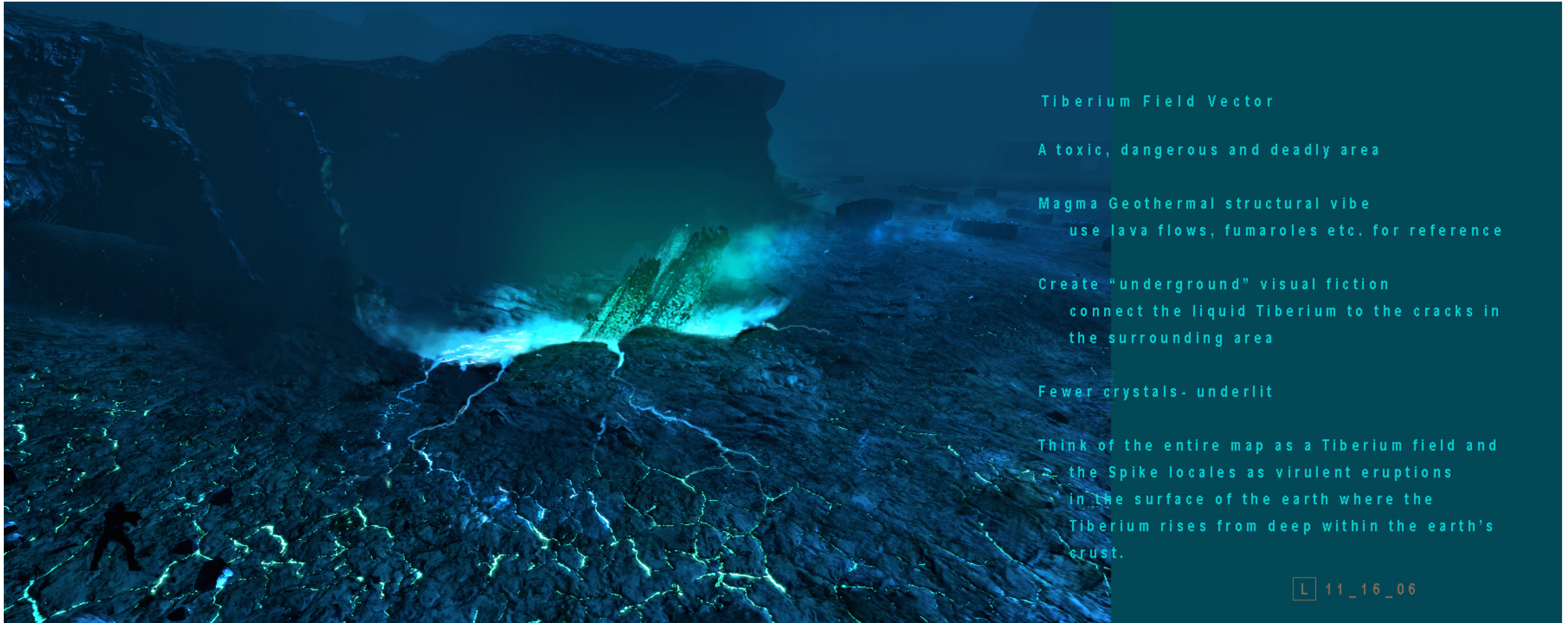
Texture study for: TIBERIUM gun turret

Texture studies for: TIBERIUM alien

Paint-overs Screenshot paint-overs work well for refining the execution of color, lighting and texture.

Current

Current

Current

Target

-Tib Gas drifting out into battlefield
-covering spike bottom
-covering liquid Tiberium
-push to blue green
-variation in gas intensity - blue green to blue

hotter - warmer specular

Target

-Tib Gas drift - add a little clumpiness - cover the bottom of the spike
and crystal intersection with the liquid tiberium plane
-Crystal tops dark
-push to blue green
-variation in gas intensity - blue green to blue

Target

-Tib Gas drifting - dry ice like
-lower to ground
-push to blue green
-variation in gas intensity - blue green to blue

hotter - warmer specular

Paint-overs for: TIBERIUM

Tiberium Field Vector

A toxic, dangerous and deadly area

Magma Geothermal structural vibe
    use lava flows, fumaroles etc. for reference

Create "underground" visual fiction
    connect the liquid Tiberium to the cracks in
    the surrounding area

Fewer crystals- underlit

Think of the entire map as a Tiberium field and
    the Spike locales as virulent eruptions
    in the surface of the earth where the
    Tiberium rises from deep within the earth's
    crust.

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Paint-overs for: TIBERIUM

Production Paintings

Production Painting: Command and Conquer 3

Production Paintings: Command and Conquer 3

GDI – SHIPYARD

Production Paintings: GEMINI DIVISION Posters

Production Paintings: afterworld –Dr. Helm's blimp crashes in SF bay
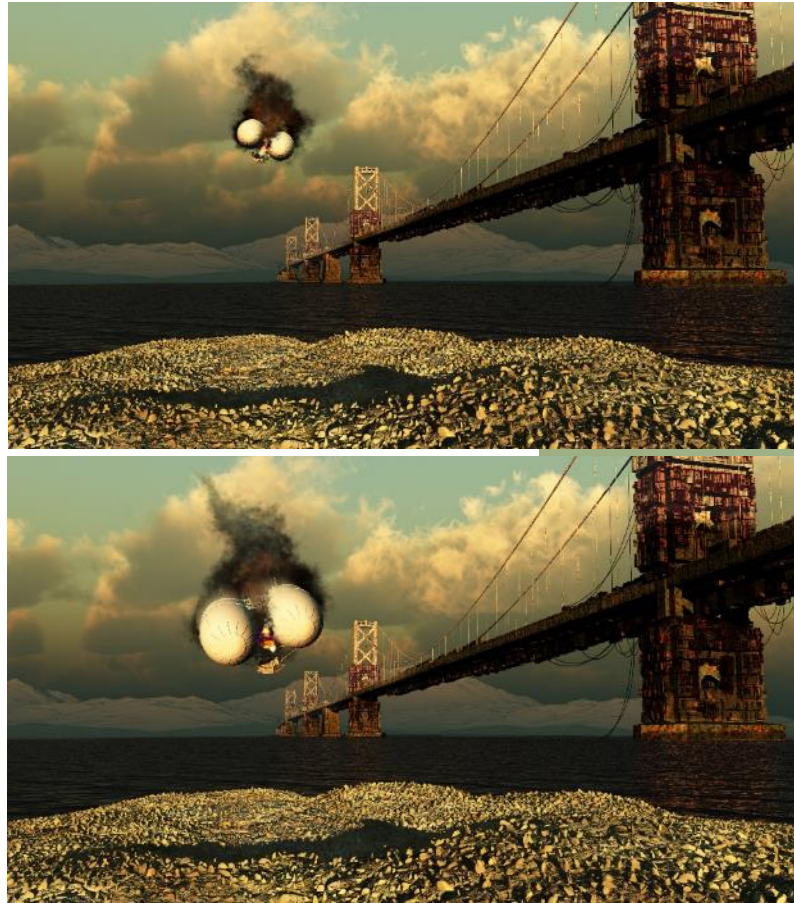
Random Concepts
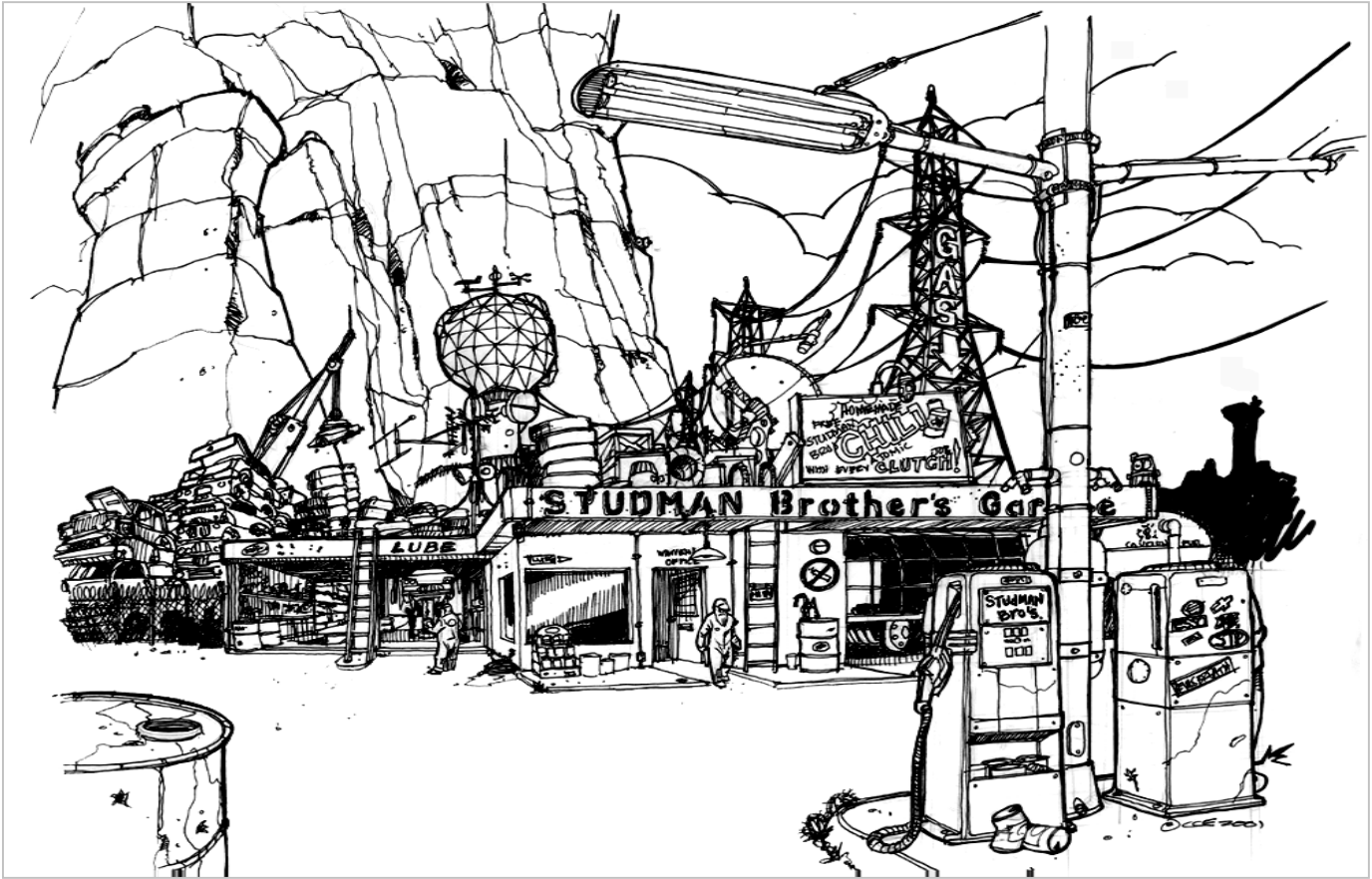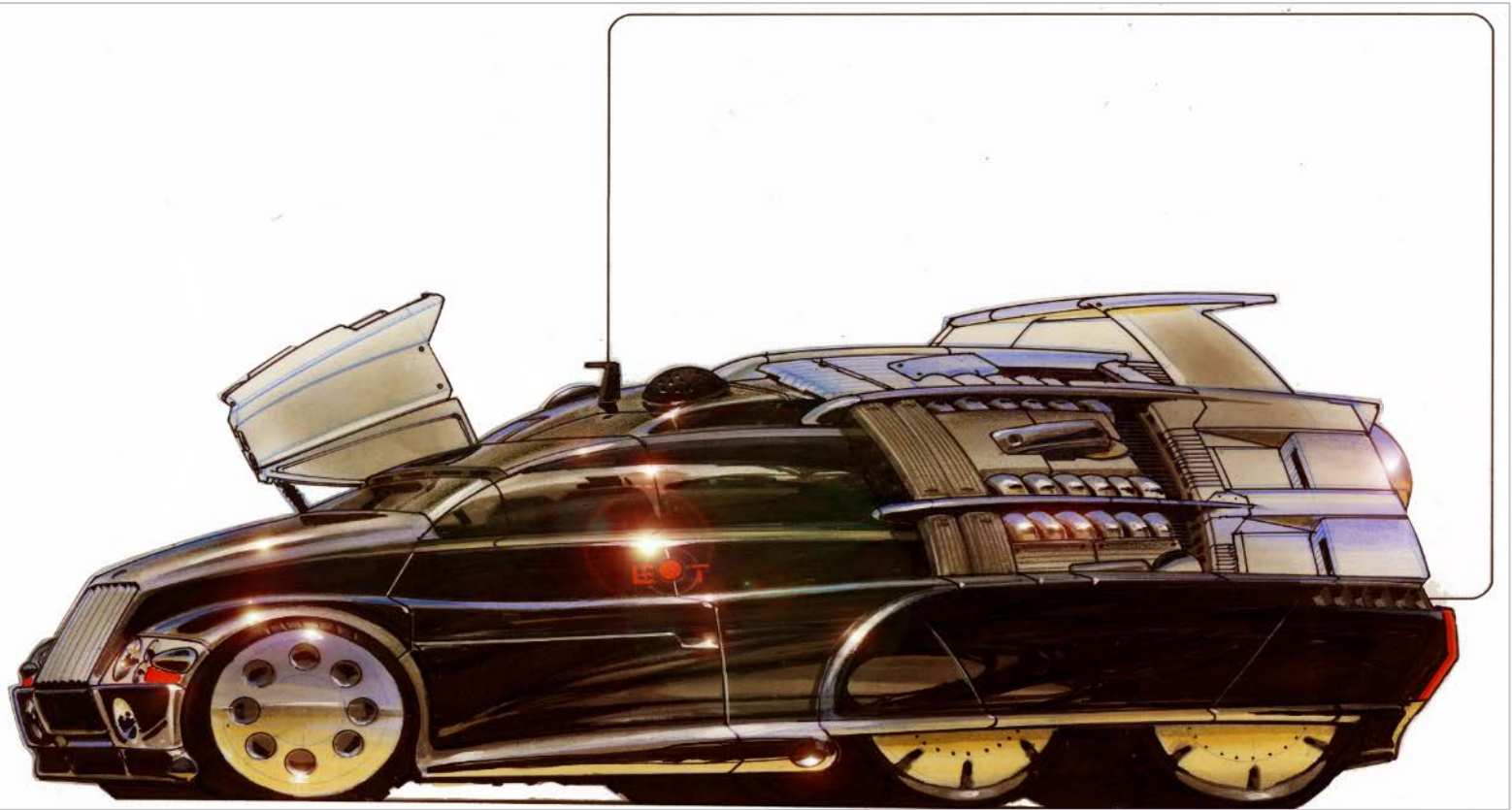
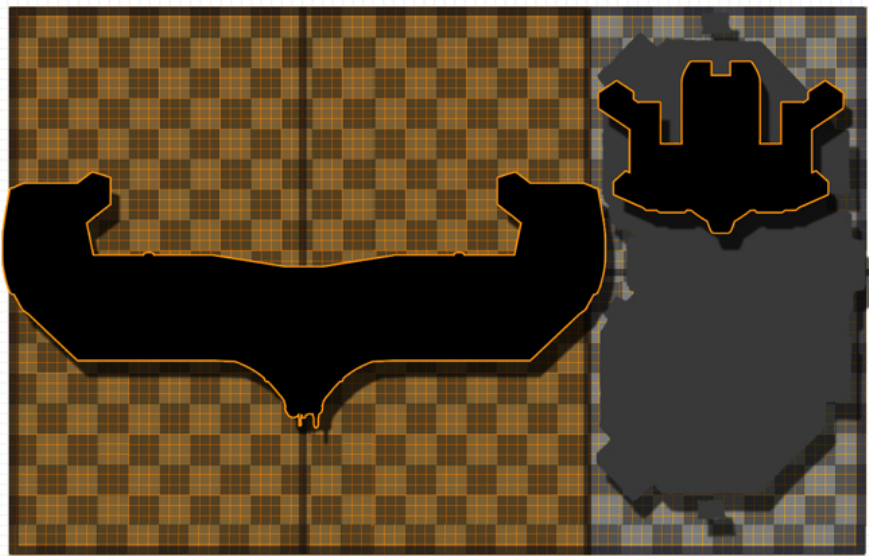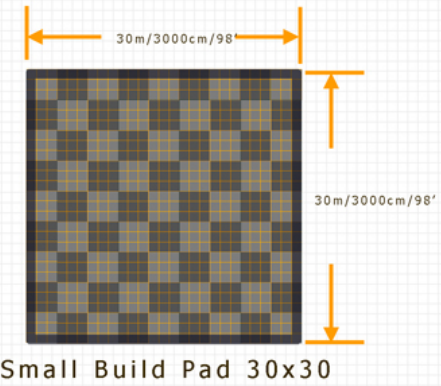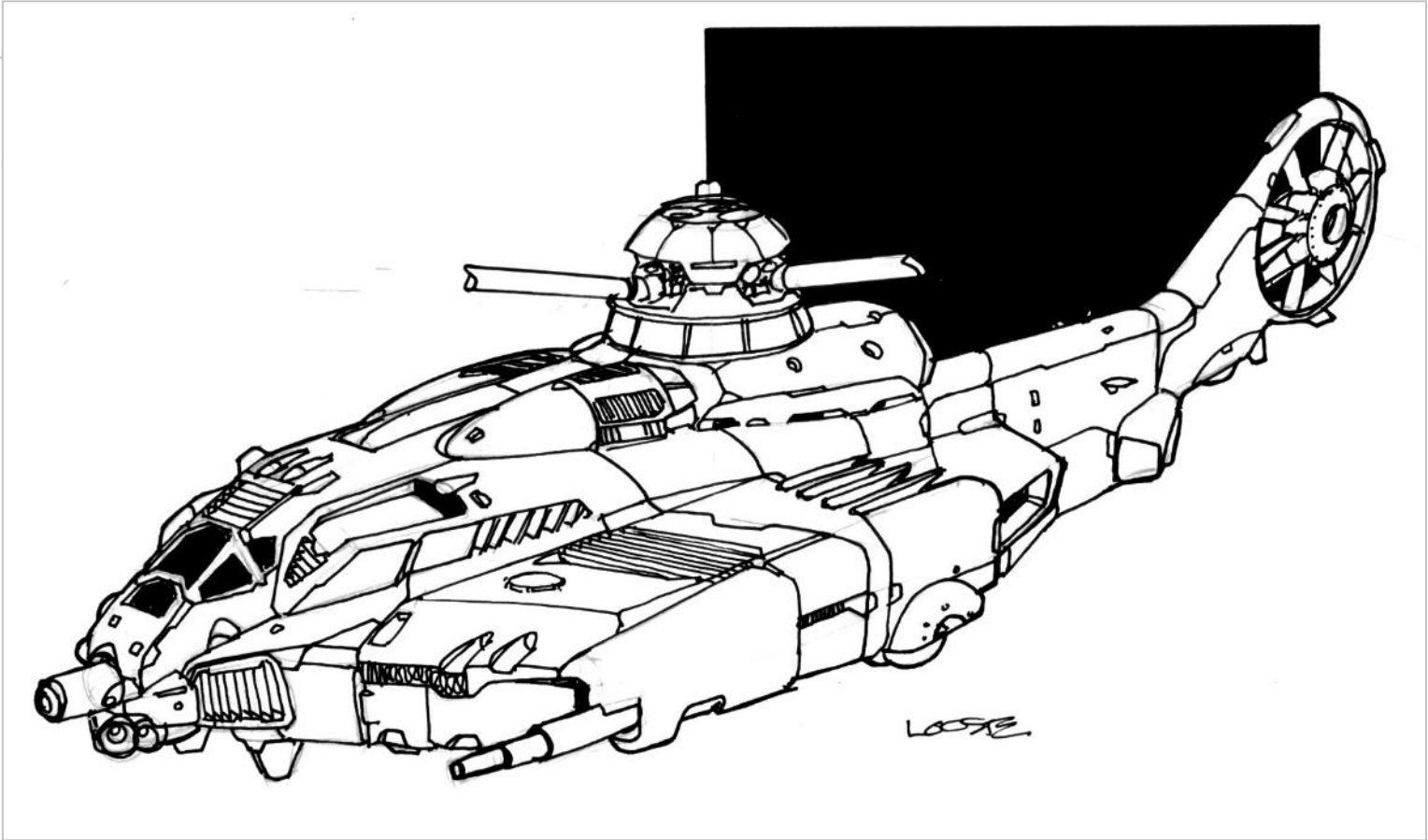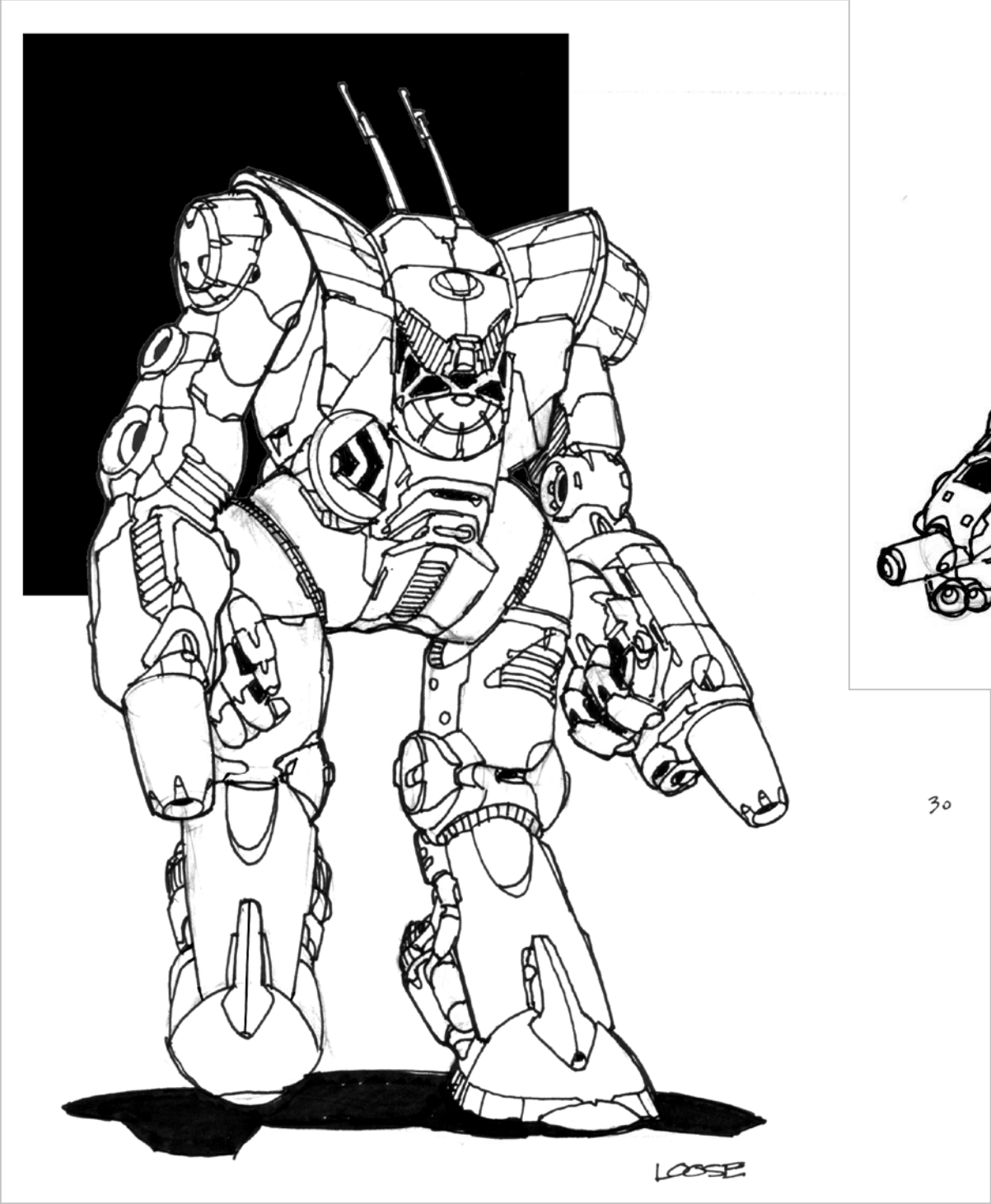Concepts for "Studman Brothers" the greatest mechanics on earth!

DZ_PAD

36m/3600cm/118'

12m/1200cm/39'

512 Pixels/3 meters

3 m

1 m

182 cm/ 6'

1 m

SCALE

170.667 Pixels/meter
1.7 Pixels/cm

TEXEL Density
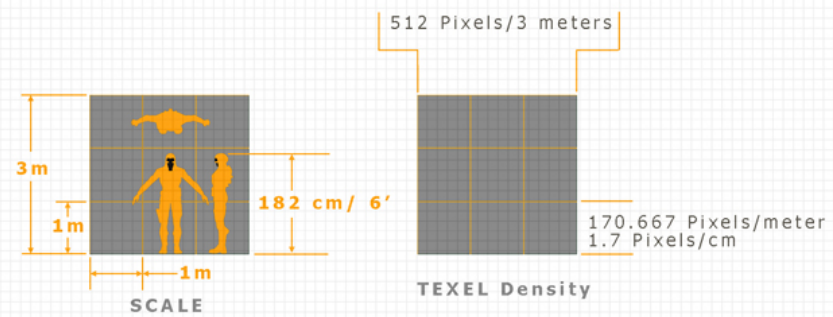
100cm = 1 m
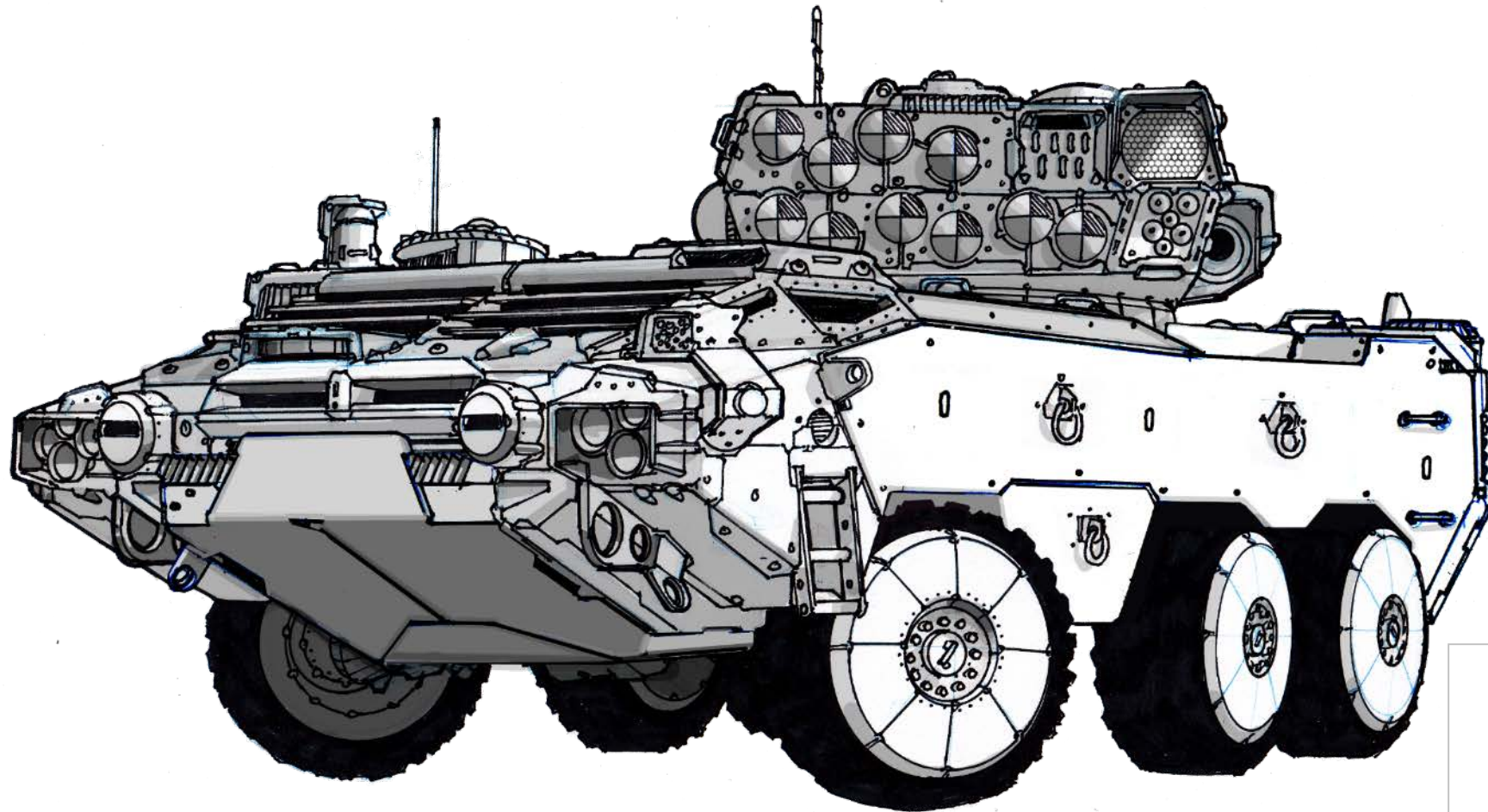1000m = 1 km
1 km = 100,000 cm

TIBERIUM GDI UNITS SCALE

LARGE Build Pad 60x90m (Drop Zone Configuration)

30m/3000cm/98'

30m/3000cm/98'

Small Build Pad 30x30

30
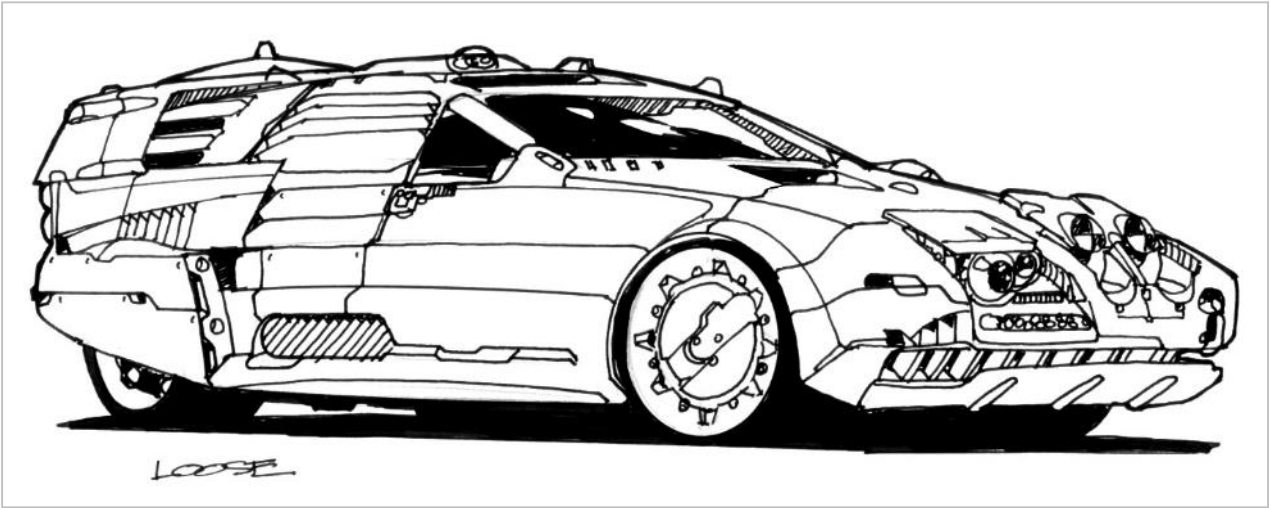
It's very rare that one gets a second chance to revise the design of a former project. In 2016 I was asked to update the designs of some of the vehicles I created almost 30 years ago for BATTLETECH.

Here's a look at some of the redesigned units. The direction was to be true to the original visual "soul" of the old designs while updating them to reflect current and near-future military technology.
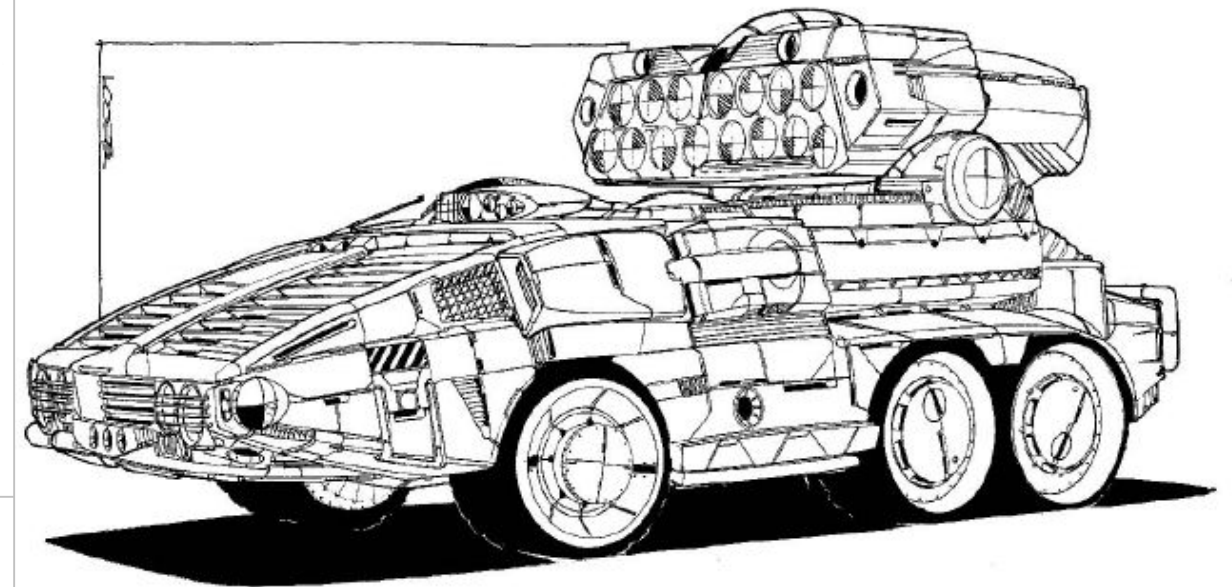
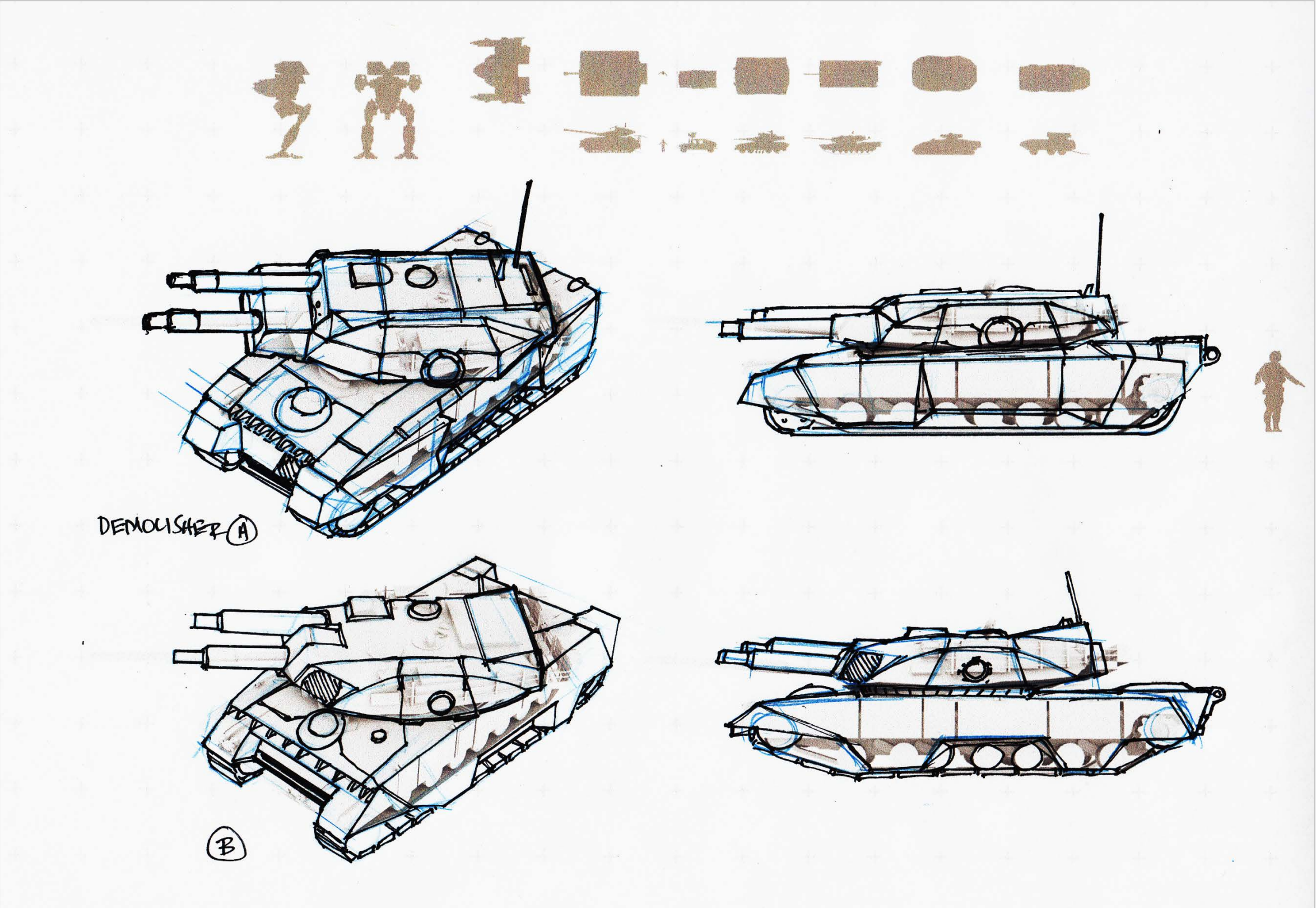STRYKER: UPDATED

CLASSIC STRYKER
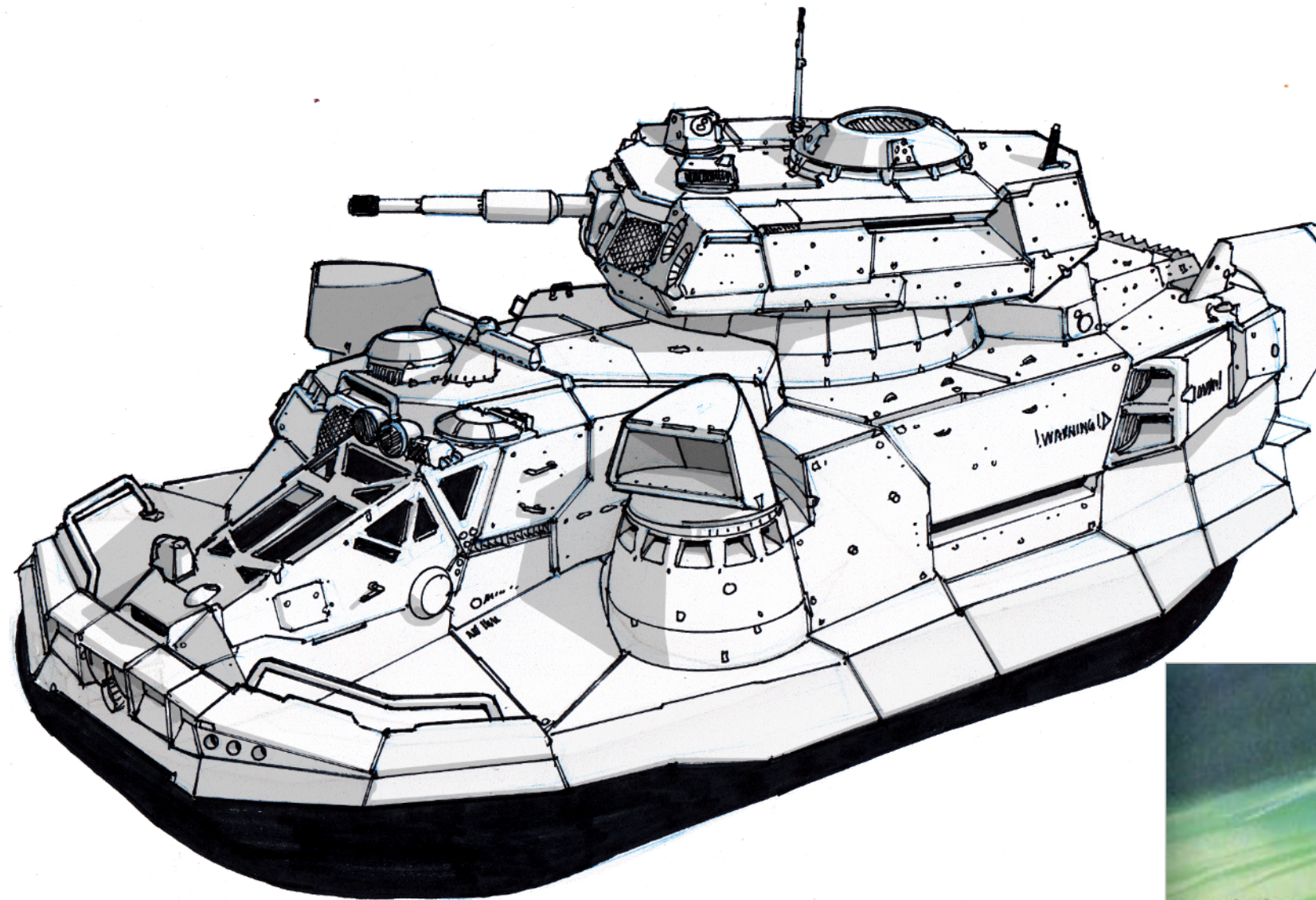
Elements of the Bradley Fighting Vehicle and the US MARINES LCAC informed the re-design of the J EDGAR.

J EDGAR: UPDATED

CLASSIC JEDGAR

Rough sketches focusing on comparative size, tactical silhouette and capturing the intent of the original units were created to guide the final design.

DEMOLISHER (A)

(B)