



CLOUD

CLOUD

UTOPIE PRO DESET BILIÓNŮ LIDÍ

Kateřina Kulanová, A2, ZS16

Nová vrstva planety, dnes aplikovaná na Zemi.

Vzniká jako odpověď na dočasnost předešlých utopií (ideovou, politickou a technickou) a současnou společenskou situaci, tak dobře ilustrovanou současnými architekturami Brasílie.

Brasíliá kritiku utopie podněcuje, stává se tak vhodným kandidátem na iniciační město Cloudu.

Netečná architektura politiky šedesátých let křečovitě chráněná současnou politikou UNESCO odráží reálnou situaci celé země Brazílie. Nové město bez vrásek (z pochyb o správnosti modernity), město odmítající známky proběhlého života, negující změny v čase a tedy odmítající současnost.

Brasíliá: matka, obklopená nezadržitelným množením svých nechtěných dětí, jako první vytváří podmínky pro takovou symbiózu nedotknutelnosti a změny: Cloud. Nevyhnutelný růst podněcuje rozšíření obytné plochy, vytvoření si vlastní budoucnosti: paralelního města. Sjednocuje Zemi, mění měřítko: planeta se stává městem, město domem, dům místností.

Cloud funguje paralelně, v symbióze s již existujícími světy. Typicky se adaptuje, využívá lokálních podmínek. V principu však zůstává stejný: proměnný energetický oblak.

Cloud je samostatný, nenfunguje však odděleně. Nadbytky vlastní produkce (energie i produktů) sdílí, jeho trh je politicky korektní.



CLOUD

SVOBODNÁ UTOPIE PROMĚNNÝCH.

Žijí v novém městě, v maximální samostatnosti. Sdružují se v osobních modulech či v jednotkách tomu určených. Mohou tak čerpat z nabízené absolutní samoty i společenského života. Již mnoho Aeronautů se stalo velkými mysliteli.

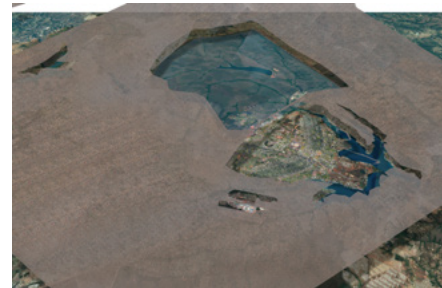
Dobrovolně si volí život v jednom z paralelních měst (Země/Cloud). Volba však neznámá jejich odloučení: návštěvníci, zdánlivě nejmenší složka aeronautické společnosti, svými moduly postupně vytvářejí základ a podmínky pro bezpečí obyvatel Cloudu. Naopltátku je návštěvníkům nabízena nehmotná zkušenost obyvatel Cloudu. Vzniká tak nová forma diplomacie.



AERONAUTI
SOVOBODNÍ OBČANÉ NOVÉ VRSTVY.

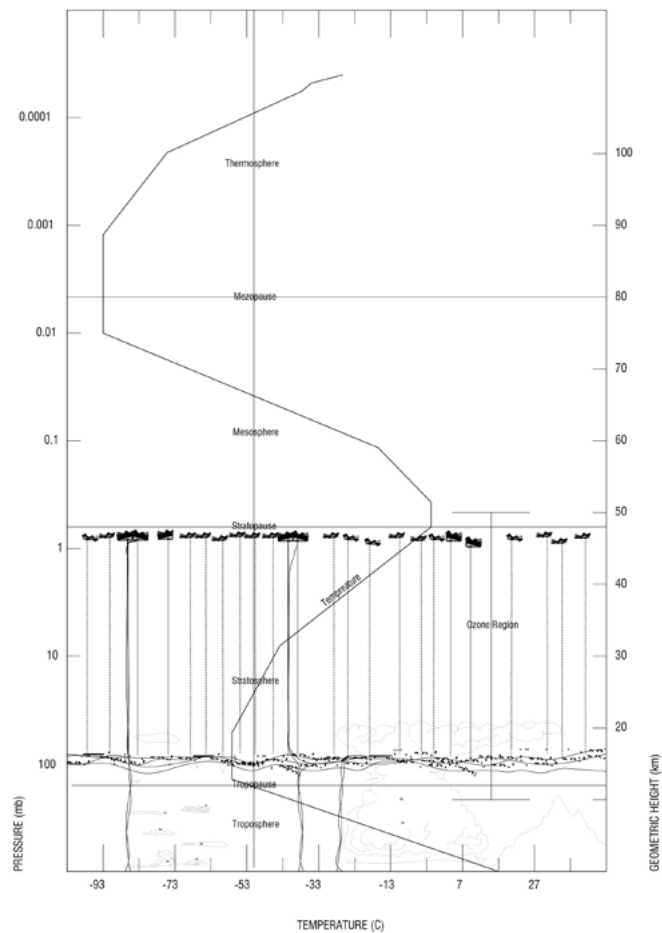
VÝVOJ (zleva dolu)

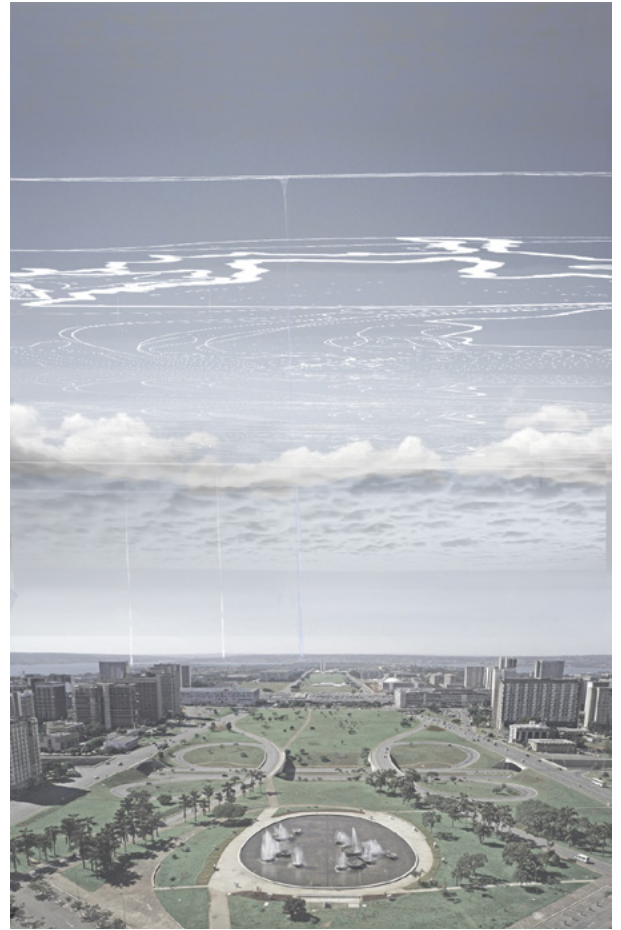
Brasília a její předměstí dnes
růst předměstí - vymezení limitů
růst předměstí - maximum
nová vrstva, Cloud - vymezení prostupů respektuje tradici, umožňuje
prostup
nová vrstva, Cloud - fluidita - proměnlivost

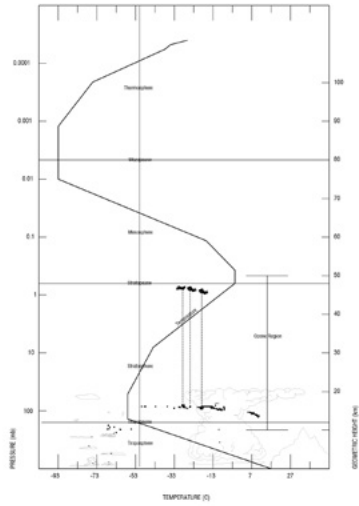


ŘEZ ATMOSFÉROU, STADIUM X

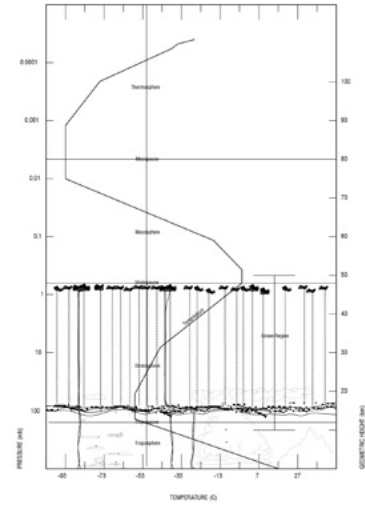
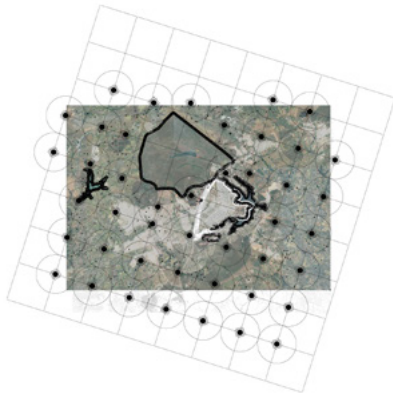
dvě vrstvy Cloudu, produkční (40-50km n. m.) a obytná (12-20km n. m.),
nově vzniklá propojení slouží jako kotvy a transferní cesty mezi vrstvami
Cloudu a Zemí



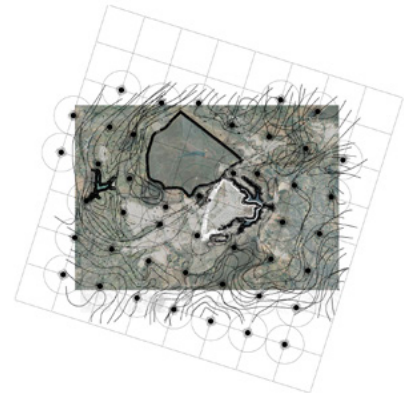




ŘEZ A SITUACE, STÁDIUM 1



ŘEZ A SITUACE, STÁDIUM X



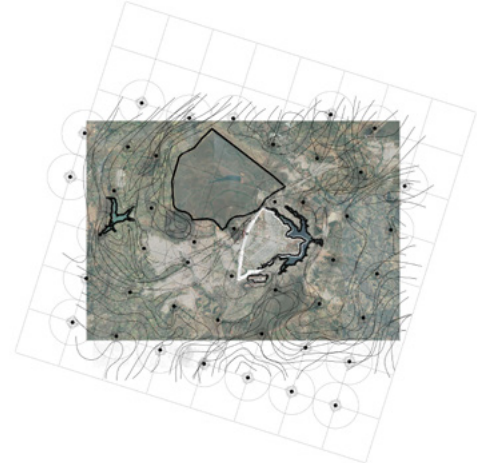
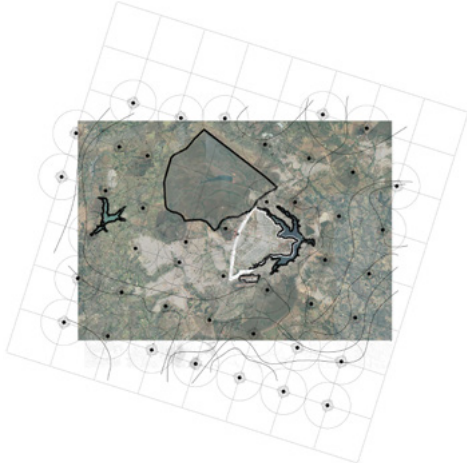
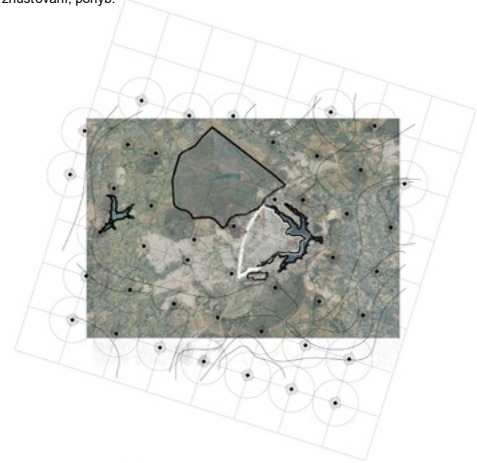
SITUACNI VYVOJ CLOUDU

Prvotní grid produkční vrstvy zajišťuje bezpečnost pohybu modulů ve vrstvě spodní: obytné.

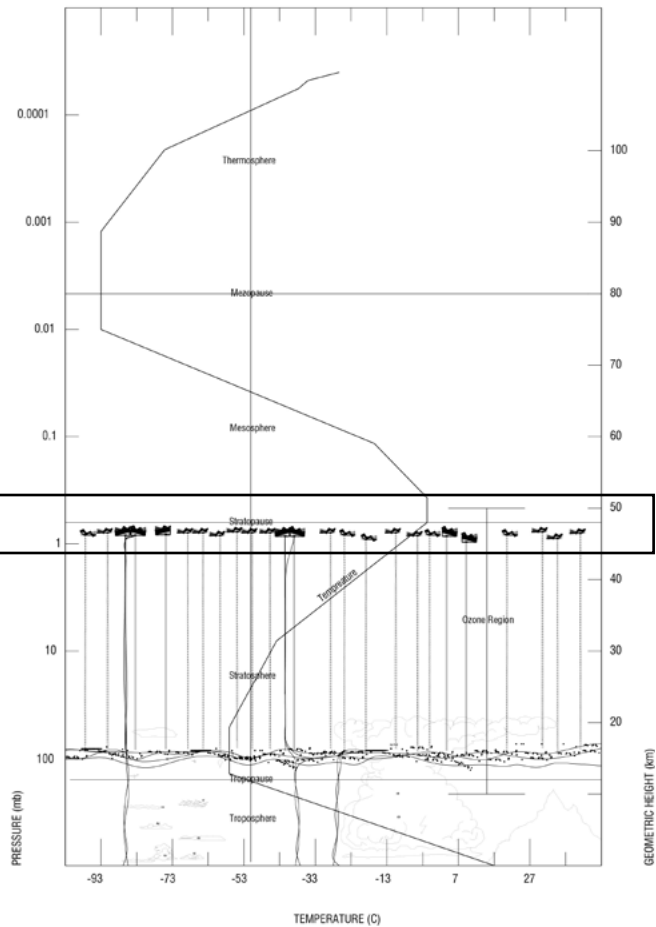
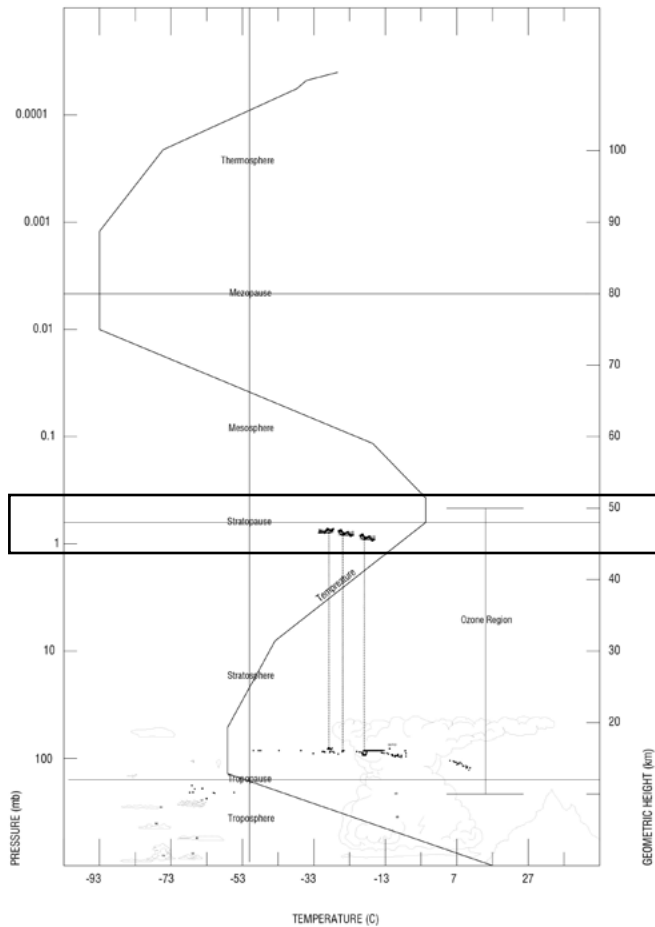


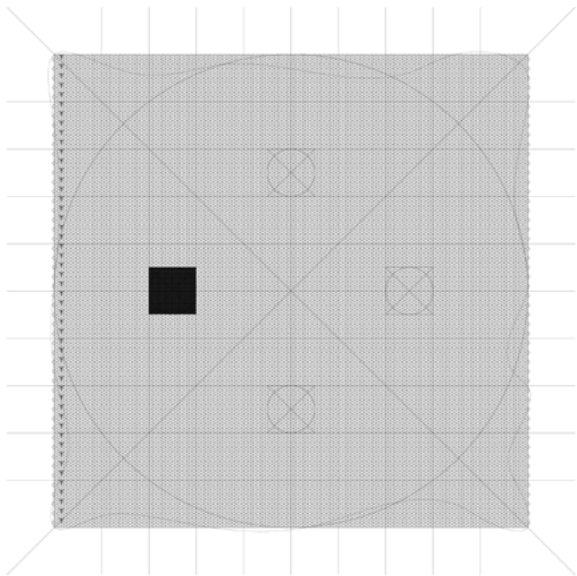
FLUIDNÍ STRUKTURA

Proměnlivá kotevní síť tvořená návštěvními moduly, její vývoj, zhušťování, pohyb.

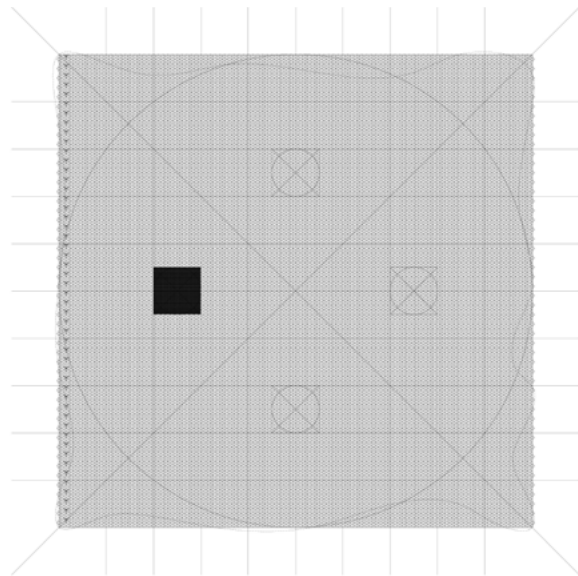
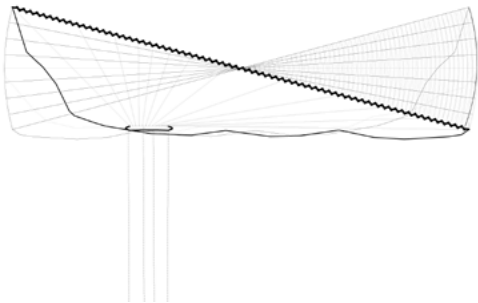


PRODUKČNÍ VRSTVA
(40-50km n. m.)

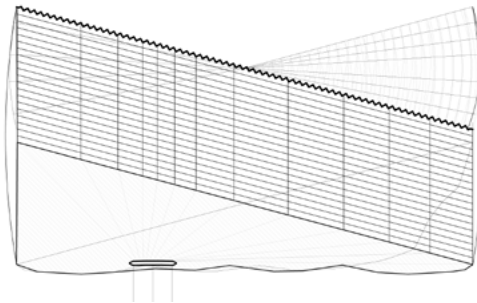




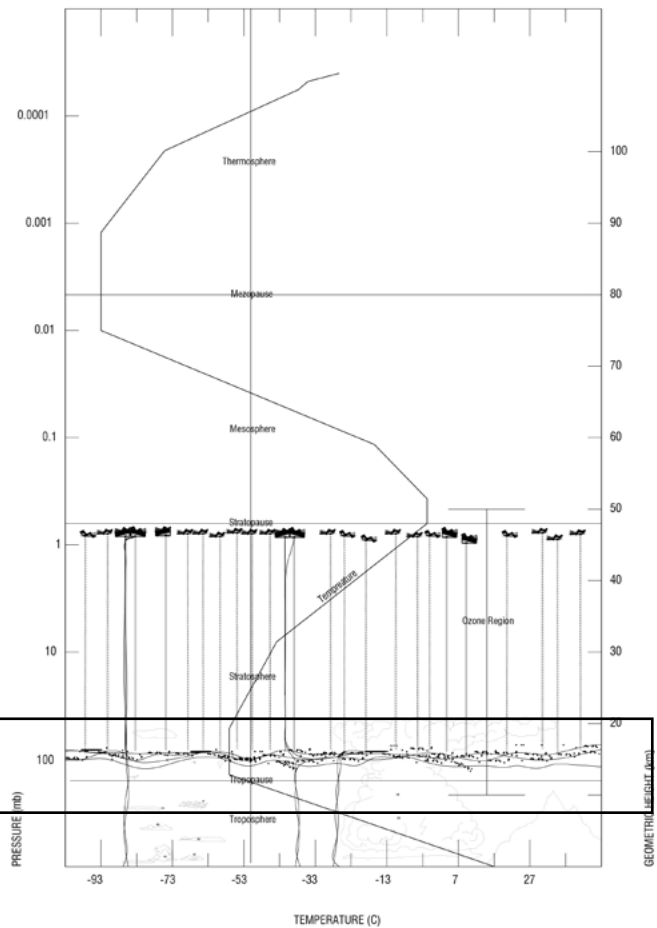
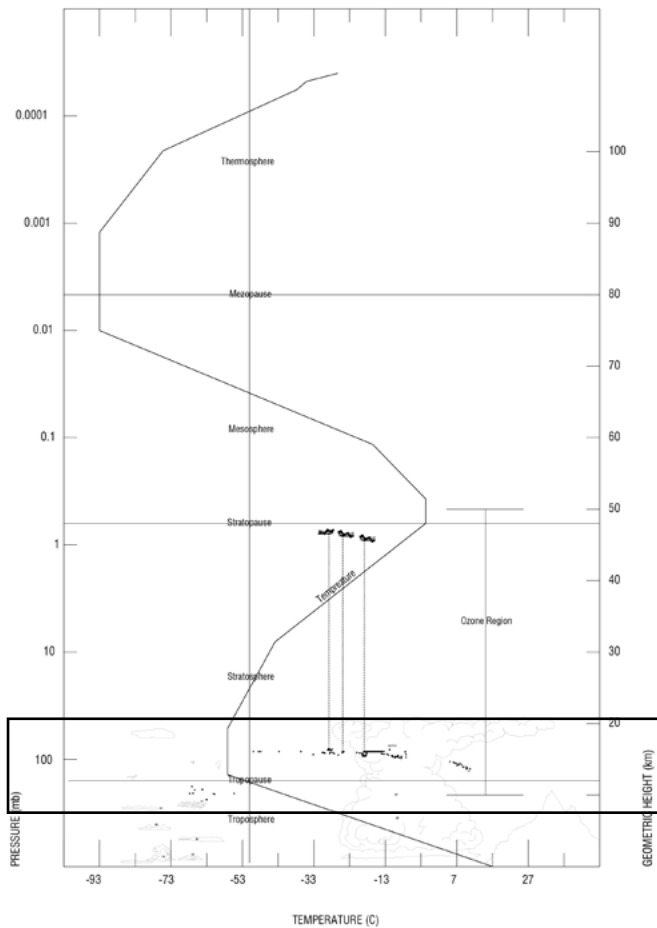
MODUL #1, STÁDIUM 1
 produkce energie koncentrovaného UV záření horní Ozonové vrstvy



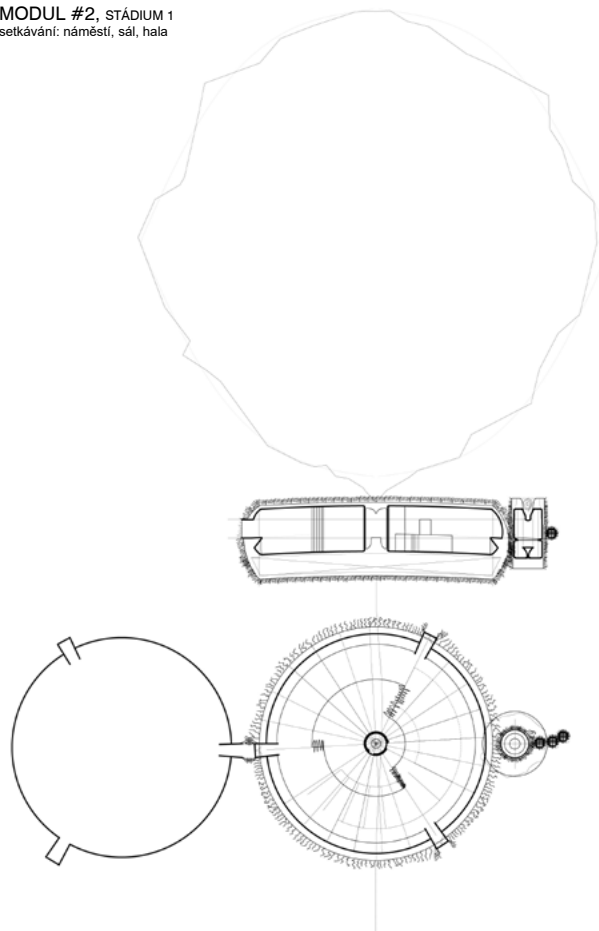
MODUL #1, STÁDIUM X
 produkce energie, zpracování a výroba produktů (odpad, potrava,...)



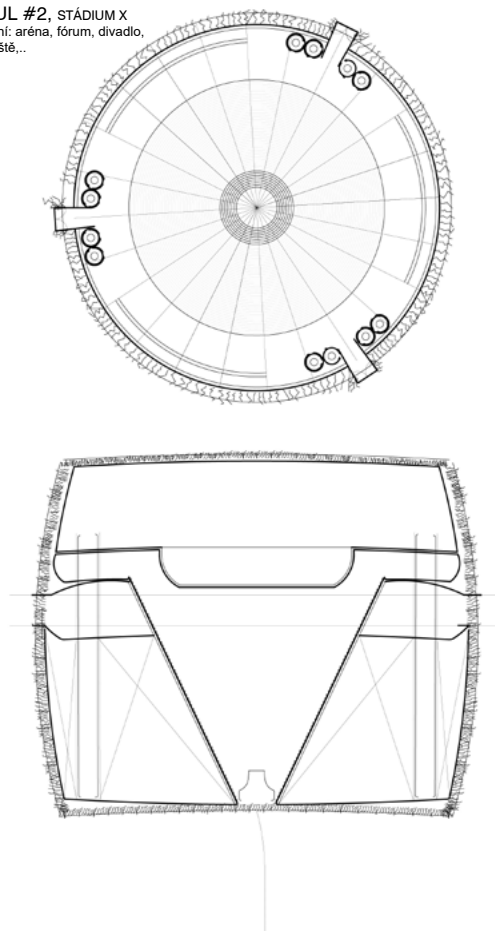
OBYTNÁ VRSTVA
(12-20km n. m.)



MODUL #2, STÁDIUM 1
setkávání: náměstí, sál, hala

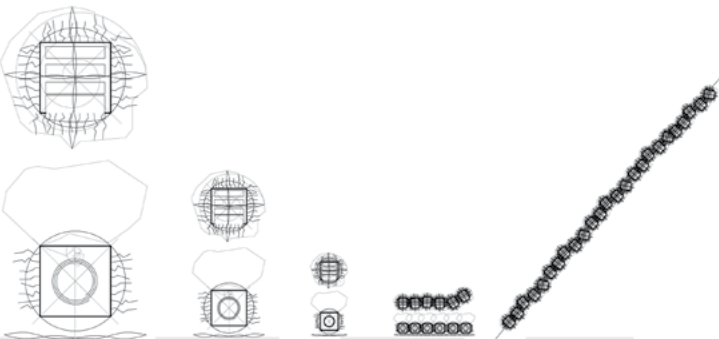


MODUL #2, STÁDIUM X
setkávání: aréna, fórum, divadlo,
sportoviště,...



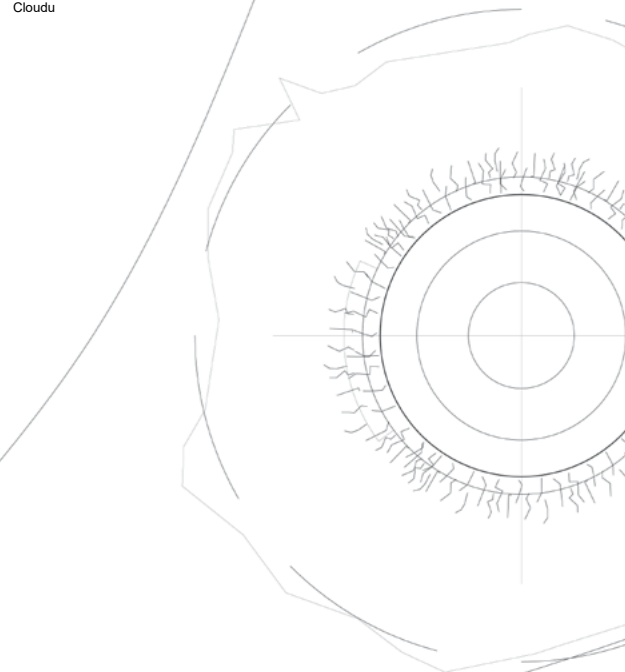
MODUL #4, STÁDIUM 1

návštěvní modul: VR dron
dole vpravo upgrade a sdružování dronů do vláken kotevní struktury
Cloudu

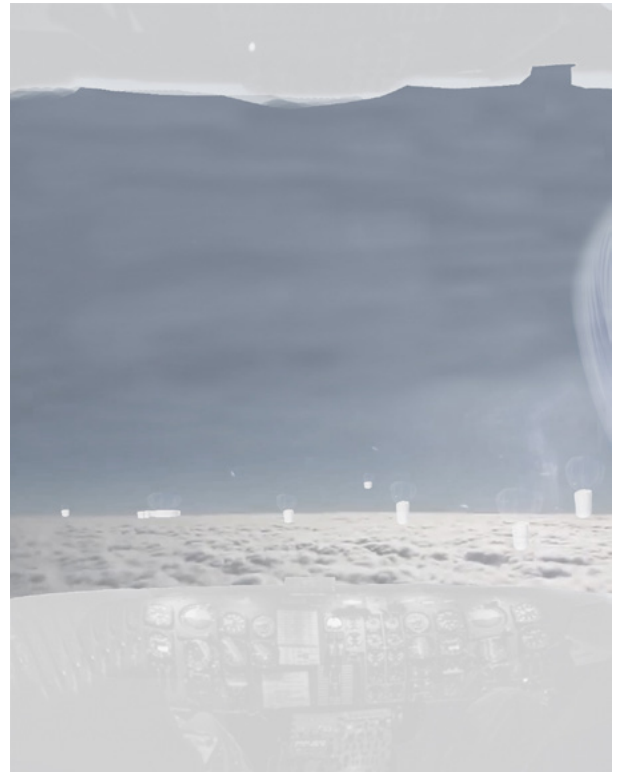


MODUL #4, STÁDIUM X

jednotka návštěvníka: VR dron
dole vpravo upgrade a sdružování dronů do vláken kotevní struktury
Cloudu



#	1	2	3	4
název	aurora parum	cumulus supra	allocumulus supra	cirrus fibratus
rozměr (v/š/h) [m]	15/ 2100/ 2100	3/ 50/ 50	3/ 1.5/ 1.5	0.3/ 0.3/ 0.3
výška [km.n.m]	35-50	20-30	20-30	20-30
Uživatel	skupina	společnost	individuuum	individuuum
úroveň užívání	fyzicky dlouhodobě	fyzicky, střednědobě	fyzicky, střednědobě	virtuálně, proměnlivě
frekvence upgradu [rok]	stálý, upgrade technologie 5-10	stálý, upgrade technologie 5-10	5 – 10	1 – 3
Účel	výroba/ sklad / zpracování primárně energie	komunitní	obytný/ transportní	komunikační/ zážitkový
Modifikace	energetický / zemědělský/ odpadní/	sdužování/ kultura/	sdužování	sdužování a tvorba podúrné struktury pro 2 a 3
sdužování	ne	Ano [2-3]	Ano [2-3,3-3]	Ano [3-4, 4-4]
transport modulů	#1 – 5	#2 – 4	#3 – 4	
frekvence zásobování	soběstačný, zásobuje #2	Zásobuje #3	Zásobuje #4	Zásobování #3
energie	radiace UV, tření větru, akumulace v baterii	z #1, baterie, tření větru	Z #2	Z #3
evoluce	cumulus supra	allocumulus supra	cirrocumulus supra	fibras
měřítka	1 – 15000	N1: 1 – 150 N2: 1-450	1 – 75	1 – 15



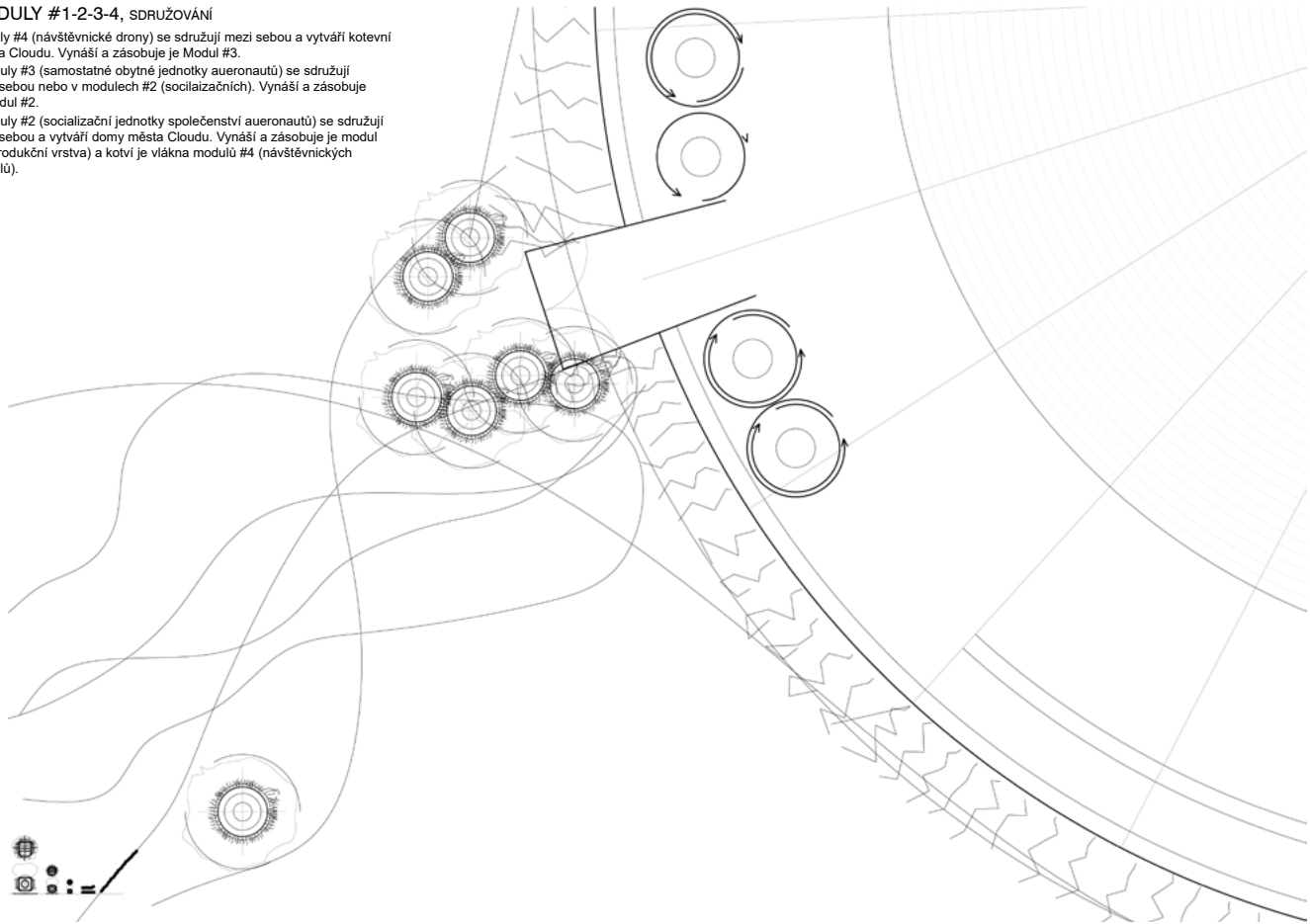
SDRUŽOVÁNÍ
support

MODULY #1-2-3-4, SDRUŽOVÁNÍ

Moduly #4 (návštěvníké drony) se sdrůžují mezi sebou a vytváří kotevni vlákná Cloudu. Vynáší a zásobuje je Modul #3.

Moduly #3 (samostatné obytné jednotky aueronautů) se sdrůžují mezi sebou nebo v modulech #2 (socializačních). Vynáší a zásobuje je modul #2.

Moduly #2 (socializační jednotky společenství aueronautů) se sdrůžují mezi sebou a vytváří domy města Cloudu. Vynáší a zásobuje je modul #1 (produkční vrstva) a kotví je vlákná modulů #4 (návštěvníkých modulů).



VLÁKNA
fluidní struktura cloudu

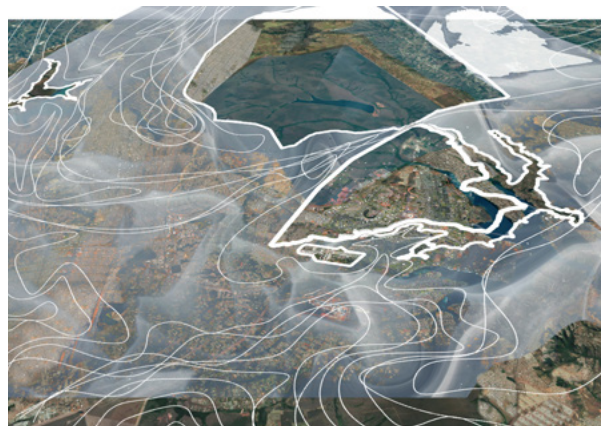
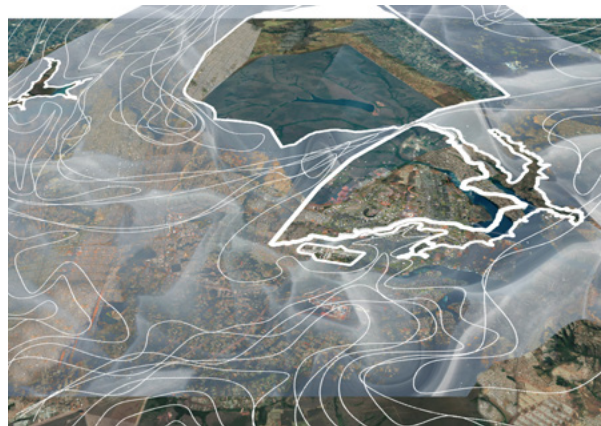
VLÁKNA: FLUIDNÍ STRUKTURA CLOUDU

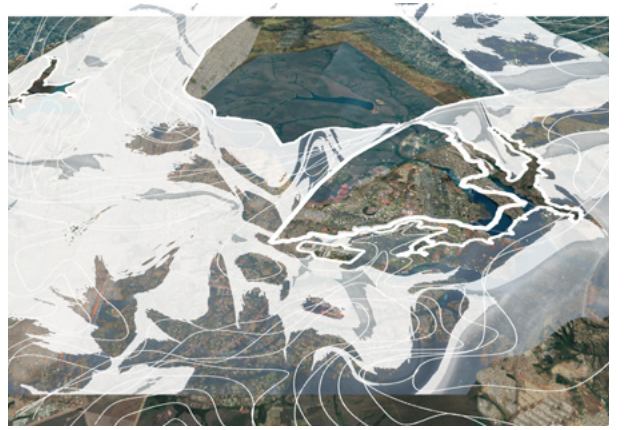
Reflektuje aktuální podmínky a zároveň potřeby aeronautické společnosti.

Přenáší energii v rámci Cloudu: základní materiál této utopie.

Respektuje zakázaná území: nedotknutelné prostupy Cloudem.

Zprostředkovává kontakt dvou měst: dvou vrstev Cloudu a vrstvy Země.







PŘÍPRAVA



BRAZIL



POLITIKA KULTURY

#20 MOST POPULAR BRAZILIAN TELENOVELAS

<http://thebrazilbusiness.com/article/most-popular-brazilian-tele-novelas>

ROQUE SANTEIRO

Roque Santeiro is the most popular Brazilian telenovela of all time. It aired between June 1985 and February 1986 and was the most watched telenovela of all time, according to IBOPE. The telenovela was situated in a fictitious city in which a man was supposedly killed while defending it from thugs. Seventeen years later, Roque Santeiro reappears, creating confusion in the city, since most people made profit from exploring his "martyr" image.

TIETA

Tieta, an adaptation of Jorge Amado's famous novel, Tieta do Agreste, aired between August 1989 and March 1990 and was situated in a city in the Northeastern Region of Brazil. Tieta is kicked out of her city by her father and moves to São Paulo, but comes back 25 years later, determined to take revenge upon those who mistreated her.

O SALVADOR DA PÁTRIA

O Salvador da Pátria aired between January and September 1989. The telenovela revolved around an extramarital case in which the most powerful man in the region, a Federal Congressman, was involved.

RENASCER

Renascer aired between March and November 1993. The telenovela was about a family of successful cocoa farmers and involved a great deal of murders and inheritance issues.

RAINHA DA SUCATA

Rainha da Sucata aired between April and October 1990. The telenovela told the history of two families in São Paulo, a newly-enriched one and a traditional family on the verge of bankruptcy.

PEDRA SOBRE PEDRA

Pedra sobre Pedra aired between January and August 1992. The telenovela, based in Bahia, was about two families fighting each other to be the most powerful family in a city.

FERA FERIDA

Fera Ferida aired between November 1993 and July 1994. The telenovela told the history of a man who returns to his hometown seeking revenge for the death of his father, while pretending to be an alchemist.

VALE TUDO

Vale Tudo aired between May 1988 and January 1989 and was about corruption and the lack of ethics in Brazilian society at the end of the 1980s. The plot involved many fake marriages in which the lead actress was willing to do anything in order to earn money and achieve success in the city of Rio de Janeiro. Vale Tudo is famous for its unexpected ending, where the major villains get away without being punished.

O REI DO GADO

O Rei do Gado aired between June 1996 and February 1997. It was about two families of Italian immigrants who became successful in Brazil and were involved in land disputes.

DE CORPO E ALMA

De corpo e alma aired between August 1992 and March 1993. The telenovela addressed the theme of organ donation in the midst of a love story.

A PRÓXIMA VÍTIMA

A próxima vítima aired between March and November 1995. The telenovela was situated in São Paulo and the main plot revolved around multiple treason followed by many murders, apparently without connection to each other.

SENHORA DO DESTINO

Senhora do Destino aired between June 2004 and November 2005. The telenovela was about a poor family from the Northeastern Region of Brazil that moved to Rio de Janeiro trying to find a better life.

AMÉRICA

América aired between March and November 2005. The telenovela was about a woman who wanted to illegally enter the United States but was in love with a Brazilian cowboy.

BELÍSSIMA

Belíssima aired between November 2005 and July 2006. The telenovela took place in São Paulo and talked about the importance of self image in a society governed by appearances, discussing values like beauty, success and honesty.

A INDOMADA

A Indomada aired between February and October 1997. The telenovela was situated in a city where English habits and habits from the Northeastern region of Brazil are mixed. The main plot was a love story between a member of a rich family and a very poor sugarcane cutter.

O DONO DO MUNDO

O Dono do Mundo aired between May 1995 and January 1992 and was about a doctor that seduced his friend's new wife and got her pregnant. She then proceeds to take revenge upon him.

O CLONE

O Clone aired between October 2001 and June 2002. The telenovela revolved around a love story between a muslim woman and a Brazilian man addresses themes such as arab culture, human cloning and chemical addiction.

PÁGINAS DA VIDA

Páginas da Vida aired between July 2006 and March 2007. The telenovela was situated in Rio de Janeiro and partly in Amsterdam. The main plot revolved around social prejudice against disabled people, especially those affected by the Down Syndrome.

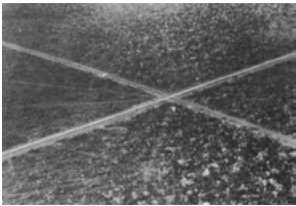
MULHERES APAIXONADAS

Mulheres Apaixonadas aired between February and October 2003 and was about a married woman who was tired of her boring routine after 15 years of marriage.

CELEBRIDADES

Celebridades aired between October 2003 and June 2004. The telenovela was situated in Rio and the plot revolved around questions like the paparazzi, social climbing and the pursuit of fame.





ARCHITEKTURA POLITIKY

1968, Brasília, Brazílie



1998, Punggol, China





POLITIKA ARCHITEKTURY

Outstanding Universal Value

Brief synthesis

Laid out along a monumental east-west axis, crossed by a north-south axis **erved to follow the topography** as a transportation thoroughfare, Brasília is **a definitive example of 20th century modernist urbanism**. Created as the Brazilian capital in the central western part of the country from 1956 to 1960 as part of President Juscelino Kubitschek's national modernization project, the city brought together ideas of grand administrative centres and public spaces with new ideas of urban living as promoted by Le Corbusier in six storey housing blocks (quadras) supported **on pylons which allowed the landscape to flow beneath and around them**. The city's planning is noteworthy for the remarkable congruence of Lucio Costa's urban design (the 'Plano Piloto') and Oscar Niemeyer's architectural creations, most powerfully reflected in the **intersection between the monumental and thoroughfare axes**, which stands as the determining factor of the city's urban scheme and underscores **the representative character of Three Powers Square** (Praça dos Três Poderes) and the **Esplanade of the Ministries** (Esplanada dos Ministérios), also manifest in **the geometry of the National Congress and in the new approach to urban living embodied in the Neighborhood Units** (Unidade de Vizinhança) and their corresponding **superblocks** (Superquadras).

Criterion (i): Brasília is a singular artistic achievement, a prime creation of the human genius, representing, on an urban scale, the living expression of the principles and ideals advanced by the Modernist Movement and effectively embodied in the Tropics through the urban and architectural planning of Lucio Costa and Oscar Niemeyer. The Brazilian experience is **notable for the grandiosity of the project**, one which not only brought to a definitive close a particular historical epoch, but which was **closely tied to an ambitious development strategy and to a process of national self-affirmation before the world**.

Criterion (iv): Brasília is a unique example of urban planning brought to fruition in the 20th century, an expression of the urban principles of the Modernist Movement as set out in the 1943 Athens Charter, in Le Corbusier's 1946 treatise *How to Conceive Urbanism*, and in the architectural designs of Oscar Niemeyer, including the buildings of the three powers (Presidential Palace, Supreme Court and Congress with its twin highrise buildings flanked by the cupola of the Senate building and by the inverted one of the House of Representatives), and the Cathedral with its 16 paraboloïds 40 metres in height, the Pantheon of Juscelino Kubitschek and the National Theatre.

Integrity

The urban framework of Brasília includes all of the elements required to demonstrate outstanding universal value. **A city that is at once urbs and civitas**, Brasília has preserved its original guiding principles intact, as reflected in the protection of its urban scales, legally protected by local and federal organisms of government of the country.

The city finds itself today in the midst of a process of consolidation, in accordance with its dual function as city and capital, through the continuing implementation of new urban services and structures. The World Heritage property is vulnerable to urban development pressure including increased traffic and public transport requirements. The city's various sectors, as laid out in the initial plan, are now in the process of being supplemented and, indeed, concluded, in line with the original urban principles. These changes in no way jeopardize the singular and outstanding value of Lucio Costa's Pilot Project (Plano Piloto), which remains wholly preserved, both physically and symbolically.

It is possible based on the still undeveloped areas around Brasília, the surrounding green spaces, and the location's topography, to clearly distinguish the city's limits from the territorial expanse in which it was introduced, singular attributes that enable analysis of the site without losing any of the basic information critical to transmitting its continued Outstanding Universal Value.

Authenticity

The authenticity of Brasília is guaranteed through maintenance of its architecture, urban design, and landscapes, all of which represent a new approach to urban living, reaffirmed by Lucio Costa and Oscar Niemeyer on the basis of the Modernist Movement's principles for 20th century architecture and urbanism.

The primary attributes of the Pilot Project (Plano Piloto) which converge to attribute universal and outstanding value to Brasília include: **the intersection of two axes and the hierarchical distribution of the road system, the division of the city into sectors with their respective characteristics and end uses, the network of open and green spaces, the Esplanade of the Ministries and representative structures that make up the Monumental Axis (Eixo Monumental), the superblocks organized on the basis of neighborhood units, and, lastly, Oscar Niemeyer's architectural designs of the key representative buildings.**

These attributes are best understood on the basis of **the four scales identified by Lucio Costa** at the time of Brasília's designation as a heritage site and preserved as the Pilot Project's (Plano Piloto)'s original design: **a monumental scale**, which confers on Brasília its status as a capital city in which the nation's administrative functions are performed; **a residential scale**, which embodies a new approach to living, centered on the Thoroughfare Axis (Eixo

Rodoviário) along which the Neighborhood Units are distributed and divided into a North and South Wing (Asa Norte and Asa Sul); **a social scale**, situated at the intersection of the two axes – Monumental and Thoroughfare – where the bank, hotel, business, and service sectors converge to form the city's central sector; and **a public scale**, which permeates the other three and is composed of large open and green spaces that provide the city with its unique city-park aspect.

Protection and management requirements

Brasília's importance was recognized from the time of its conception. In 1960, prior to the new capital's inauguration, the **Organic Law of the Federal District** (Lei Orgânica do Distrito Federal) provided that **any proposed changes to the Pilot Project (Plano Piloto) must be submitted to the Federal Senate for review**. The question only took on relevance beginning in the early 1980s with the city's rapid growth. In 1981, the Working Group for the Preservation of the Historical, Cultural, and Natural Heritage of Brasília (Grupo de Trabalho para Preservação do Patrimônio Histórico, Cultural e Natural de Brasília) was established. Composed of representatives of the National Pro-Memory Foundation (Fundação Nacional Pró-Memória), currently the National Institute of Historical and Artistic Heritage (Instituto Nacional de Patrimônio Histórico e Artístico – IPHAN), the Federal District Government (GDF), and the University of Brasília (UnB), the entity's studies were critical to Brasília's inclusion on UNESCO's List of World Heritage Sites in 1987, providing the basis for the technical dossier which accompanied the city's candidacy.

At the time, primary responsibility for preserving the site resided with the Secretary of Culture of the GDF, through its Department of Historical and Artistic Heritage (Departamento de Patrimônio Histórico e Artístico – DePHA). This determination was founded on Decree 10829/GDF of October 14, 1987, a legislative instrument submitted by the Brazilian Government to the World Heritage Committee to serve as a binding guarantee for the protection of Brasília which remains in force to this day. Further, in response to an explicit request from UNESCO that same year the GDF decreed **the protection of the city's four scales, while also delimiting the 120 square kilometer area on which the 1990 federal designation of Brasília as a historical site was founded**.

In 1990, the Urban Framework of Brasília was officially recognized as a national historical heritage site. The designation was formally enacted through SPHAN/PoMemória Directive 04/90, subsequently replaced by IPHAN Directive 314/92, which remains in force.

Currently, the Federal District Government and the Federal Government exercise shared responsibility for the management and protection of Brasília through the Secretariat of State for Urban and Housing Development (Secretaria de Estado de Desenvolvimento Urbano e Habitação – SEDHAB) and the Federal District Superintendence of the National Institute of Historical and Artistic Heritage (Instituto do Patrimônio Histórico e Artístico Nacional – IPHAN), respectively.

The challenge of preserving Brasília requires assessing present-day issues and demands relating to the city based on its singular urban plan. This necessitates adopting a forward-looking vision for the city, which protects its Outstanding Universal Value while enabling sustainability.

Protection of the Urban Framework of Brasília is governed by **a series of legal instruments** intended to ensure its **preservation on three operational levels: local, federal, and global**. At the local level, a set normative instruments consisting of specific laws aimed at protecting the heritage site as well as highly complex body of technical and operational urban legislation based on the Federal District's Urban and Land Settlement Policy have been put in place.

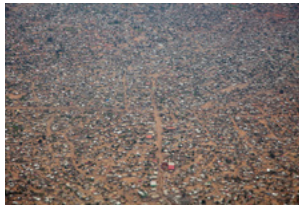
Some of the **principal sources of pressure** exerted on the heritage site include **real estate development, the illegal occupation of public areas and green spaces, the implementation of activities inconsistent with the end use of particular sectors, the encroachment of private property on the lakefront, increased urban traffic, and inadequate public transportation associated with social-spatial segregation across the metropolitan region**. Added to this the urban dynamic of surrounding areas in connection with the Federal District's outward push, which has placed intense pressure on the Pilot Project (Plano Piloto), requiring that special attention be devoted to the city's urban landscape as well as the function and use of the corresponding spaces, where the vast majority of public services, jobs, and regional investments are concentrated but less than 10% (9.6%) of the Federal District's population resides.

To address these challenges and recognizing that the preservation and protection of the Urban Framework of Brasília cannot be dissociated from the city's urban development, an Urban Framework Preservation Plan for Brasília (Plano de Preservação do Conjunto Urbanístico de Brasília – PFCUB) will be the primary instrument for planning, preserving, and managing the protected area and for coordinating the measures and agents involved in Brasília's urban development.

KOBEREC
(tuc tuc)

SPRAWL
sprawl

favelas Brasília



Detroit

střední třída Brasília



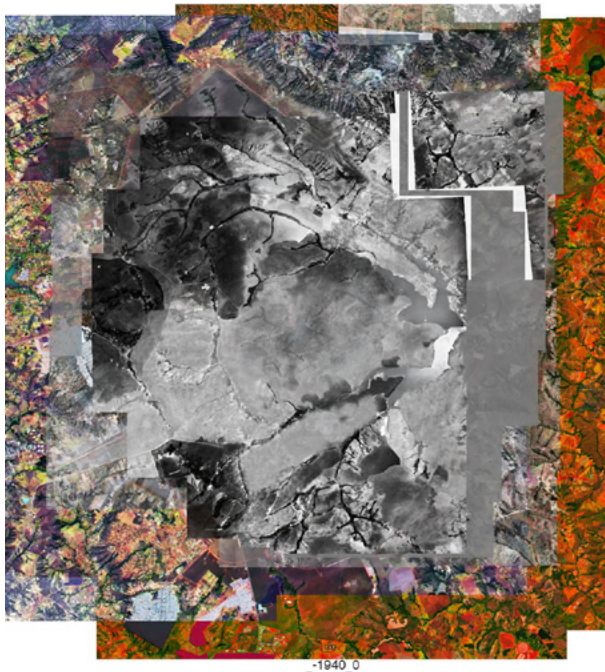
L.A.

high class vip Brasília

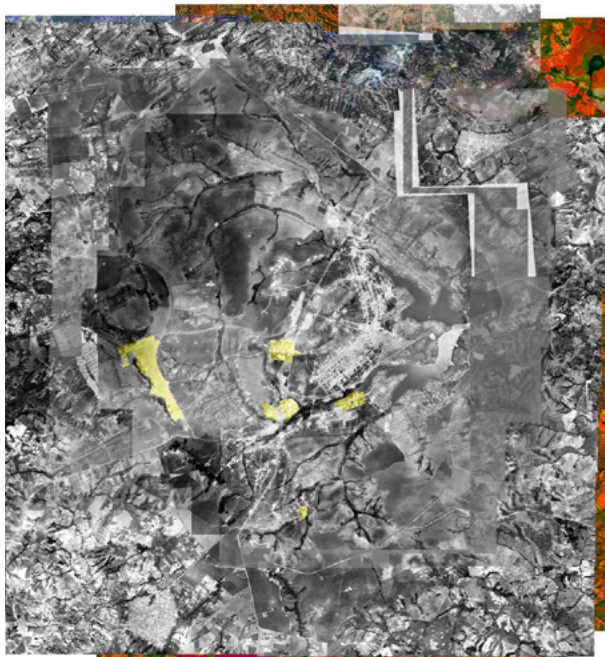




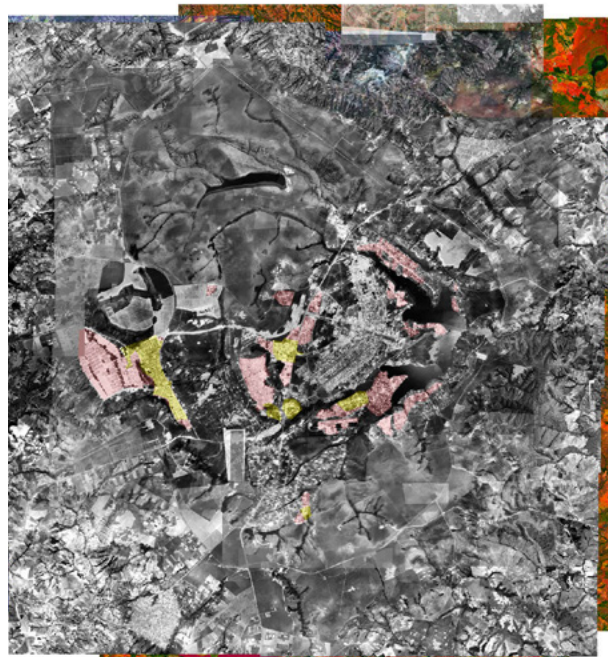
2016 START



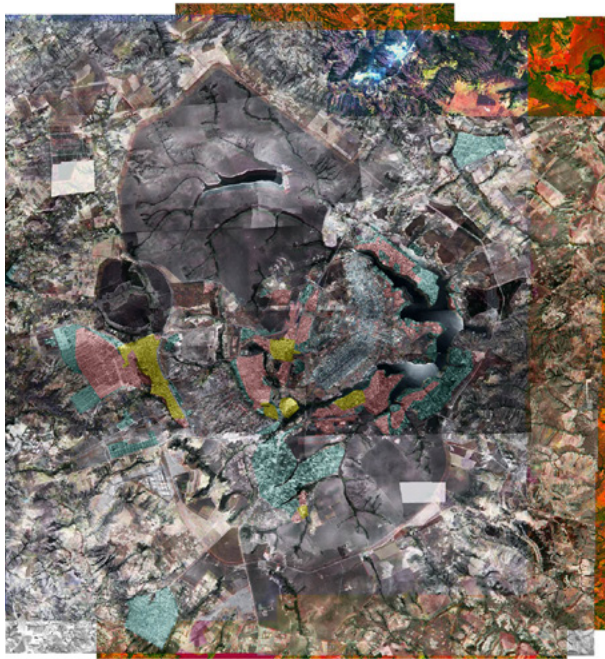
KOBEREC - Brasília
vývoj



1965



1977



1966



2009



2014



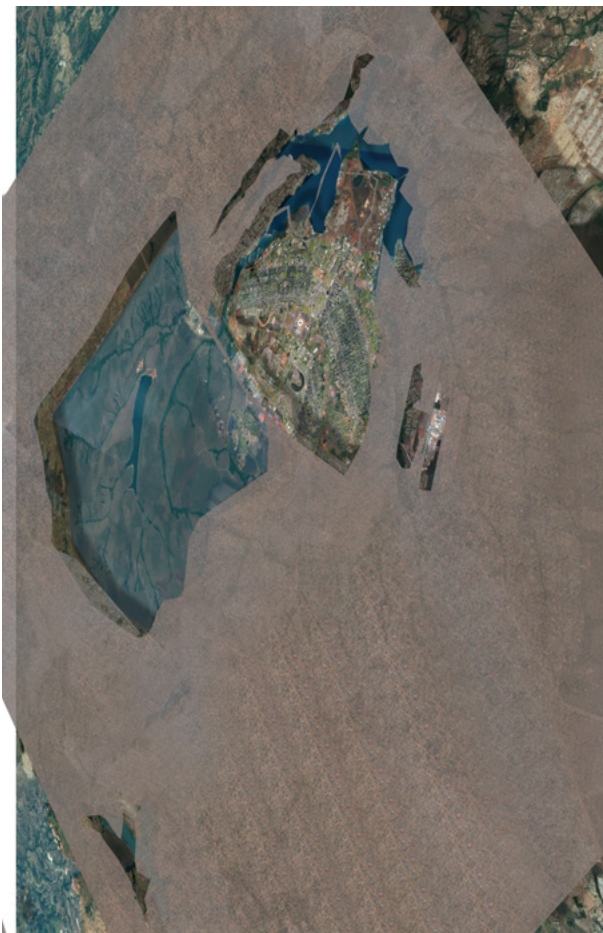
2016 START

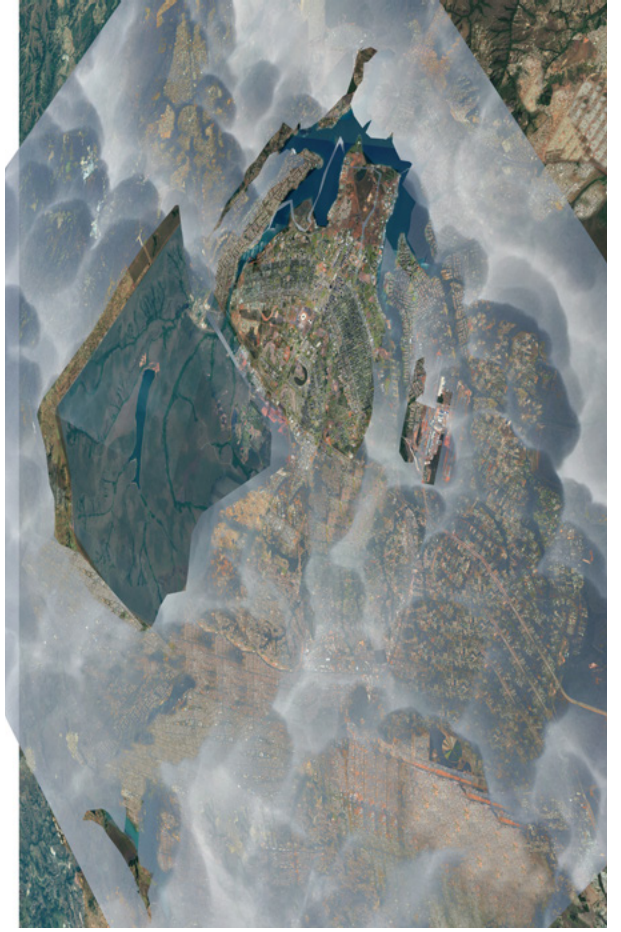


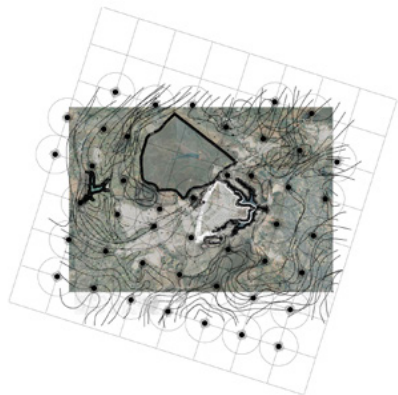
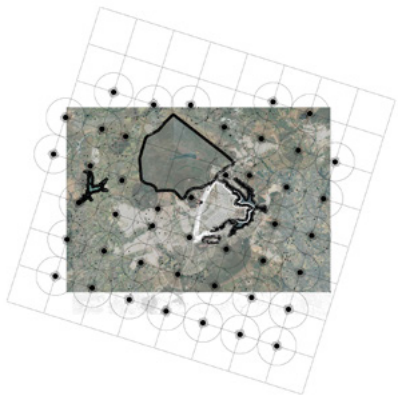
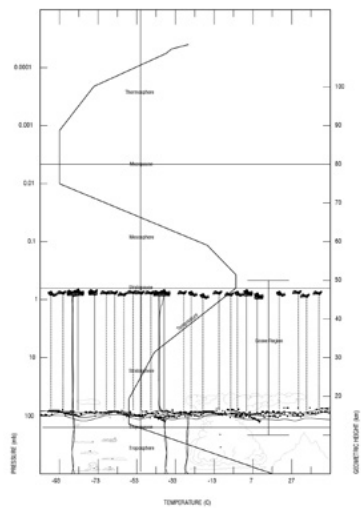
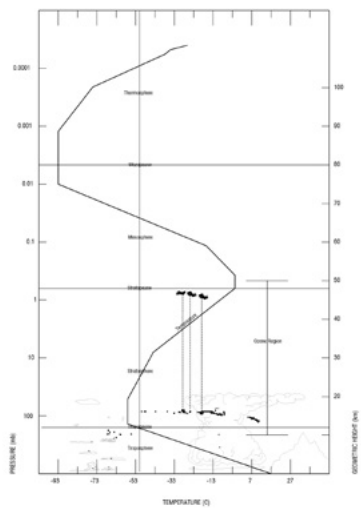
REZERVACE REZERVACE
návrh nové vrstvy











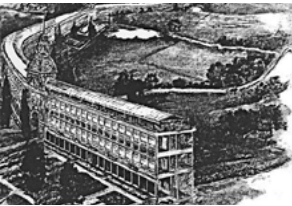


UTOPIE



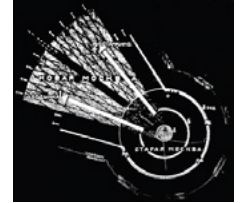
1666, Ch. Wren, London

1914, Walter B. Griffin, Canberra



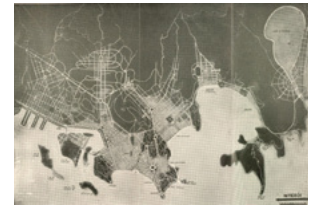
1894, Arturo Soria y Mata, Ciudad Lineal of Madrid

1930, Ladovsky, Parabola, Moskva



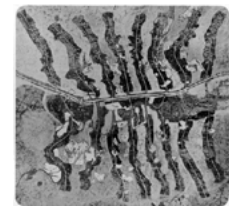
1904, T. Garnier, Industrial city

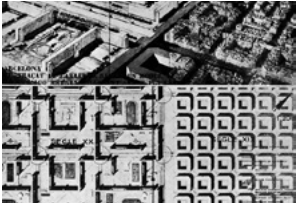
1933, Correa-lima, Goiana



1911, E. Lutyens, New Delhi

1941-2, Marsgroup, London





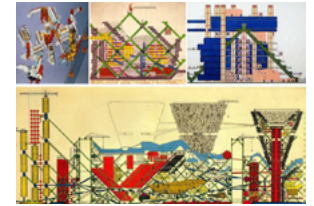
1943, Jose Luis Sert, Studies for a Master Plan for the City of Barcelona

1963, Paul Lester Wiener, José Luis Sert, Motorcity



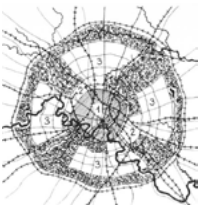
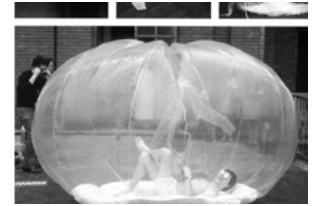
1945, Le Corbusier, Plan Voisin, Paris

1963, Archigram, Peter Cook, Plugincity



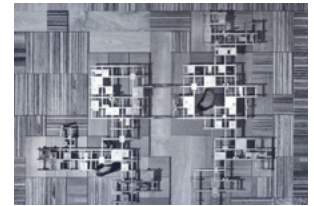
1960, Constantinos Emma Dioxiatis, Islamabad

1963, Archigram, Suitaloon2

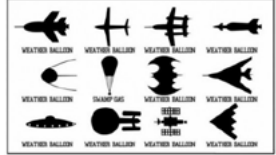


1962, Schestakov, Greater Moscow

1980, Krisho Kurokawa, Agriculturalcity



U.S. AIR FORCE AIRCRAFT IDENTIFICATION CHART



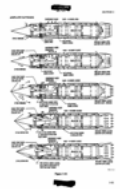
LÉTÁNÍ



BLACKBIRD1/2

https://www.youtube.com/watch?v=na_mCPA_Gk0

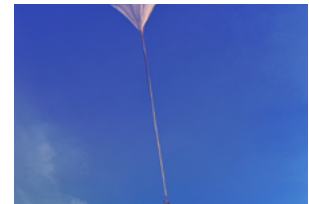
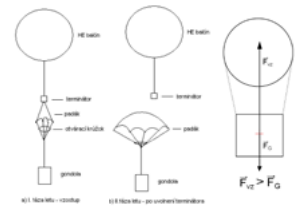
"has all these critical fuel problems and another stuff, so its not a very spontaneous experience, these are carefully planned choreographed missions"



STRATOSTAT

<https://www.youtube.com/watch?v=FYmJXVQa284>
https://en.wikipedia.org/wiki/Supercritical_balloon#/media/File:note-3

"A superpressure balloon is a style of aerostatic balloon where the volume of the balloon is kept relatively constant in the face of changes in the temperature of the contained lifting gas. This allows the balloon to keep a stable altitude for long periods. This is in contrast with much more common variable-volume balloons, which are either only partially filled with lifting gas, or made with more elastic materials."





THE BARRIER BALOON

https://cs.wikipedia.org/wiki/Oblozba_bariera

"The barrier balloon, sometimes lamdo blimp, one is a large captive balloon attached to the ground with metal cables and used for defense against aircraft ground attack, damaging the aircraft to collide with cables or at least hindering the approach of the enemy. ... Barrier balloons are not effective against high altitude airplanes, due to the weight of a very long cable.."



STRATOBUS, 2016

<https://www.stratobus.com/en/word/stratobus/news/stratobus-halfway-between-drone-and-satellite>

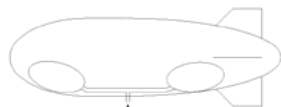
"the advantage of StratoBus is that it offers long endurance and complete autonomy from a fixed position, while the high-altitude balloons in Loon move around the Earth and will offer only limited autonomy. StratoBus, a surprising vehicle halfway between a drone and a satellite, will be able to carry out a wide range of missions, including observation, security, telecommunications, broadcasting and navigation... and it offers a lifespan of five year."



BALONET

<https://cs.wikipedia.org/wiki/Balonet>

"Balonet je vzduchem plněné těleso umístované uvnitř vzducholoďi a balónu. Má za úkol zmenami svého objemu kompenzovat roztažnost nosného plynu vlivem výšky a teploty a stále tak zachovávat nepatrný pretlak nosného plynu vůči okolní atmosféře. To je důležité zvláště u těles s aerodynamickým tvarem, který je zajištěn pouze napnutým obalem. Takto jsou konstruovány pozorovací balóny, poloztužené a neztužené vzducholoďe"



VOLOCOPTER

<http://www.btimes.co.uk/volocopter-german-18-rotor-drone-hybrid-personal-flight-vehicle-passes-its-first-manned-flight-1503912>

"a multicopter that has 18 rotors powered by nine batteries. Its frame is made from a lightweight fibre composite material, and getting the personal flight vehicle to take off and hover in the air with a 450kg payload requires 45kW of power, depending on the air pressure or temperature. test flights – the first flight will be 25 km/h maximum at low altitude, followed by a flight at 50km/h at medium altitude, and then finally a flight at 100km/h at even higher altitudes."



STRATOCACHING CR, N.1, 2013

<https://cs.wikipedia.org/wiki/Stratocaching>

"Stratocaching je experiment, který spojuje vypuštění stratosférického balónu s geolokací hrou pro veřejnost.Prvky: balón, dropion, stratocache, cratocache X, stratocion, pozorovací balóny, poloztužené a neztužené vzducholoďe"



FLIKE

<http://inhabitat.com/all-electric-flying-bicycle-takes-to-the-skies-in-first-manned-venture/#oz320gggCz6d8>

"a personal flight vehicle designed by the Hungarian government's research institute Bay Zoltan Nonprofit. Flike is a tricopter that can carry a total weight – including payload – of 240kg. In April, Flike completed a successful manned test flight where it was able to hover and manoeuvre in the air while compensating for the wind, for 90 seconds."





NUS SNOWSTORM

<http://www.12times.co.uk/singapore-university-students-develop-their-own-darwin-warp-personal-flight-vehicle-15102225>

"a huge multicopter drone that can carry a person and hover in the air

It features a hexagonal frame made from aluminium beams, carbon fibre plates and tubes with Kevlar ropes, with 24 motors driving 24 propellers that each measure 76cm in diameter overhead. Each motor generates 2.2kW of power and the whole device requires three rechargeable lithium batteries generating a total of 52.8kW to power it.."



HOOVERBIKE, 2015

<http://www.hoverbike.com>

"Belcamp-based SURVICE Engineering has partnered with Malloy Aeronautics of the United Kingdom to develop its Hoverbike drone as a reconnaissance vehicle for the U.S. military. The Hoverbike is depicted here in an artists rendering. (Malloy Aeronautics).."



THE TERRAFUGIA TF-X(TM)

<https://www.terrafugia.com/#/x/>

"terrafugia Transition is scheduled to take to the air next month, and you should be able to buy one for yourself by the end of 2009, for \$194,000. This new plane has foldable wings that make it possible to drive on the street. With a FAA and NHTSA certification, this drivable plane is a light airplane that's street legal. At the back is a push prop, and the front canard does double duty as a wing and bumper. Its gas engine will push it over a range of 460 miles through the air. The Transition runs on gas and can go about 450 miles on a single tank, but don't go thinking you can fly one right away. A key code is required to make the wings unfold; only a driver with a pilot's license – or for that matter a pilot with a driver's license- can get this key code."



EKIP TARIELKA, 1978-96

<http://www.hibedfreeb.genetics.edu/UC0gpreprv66.htm>

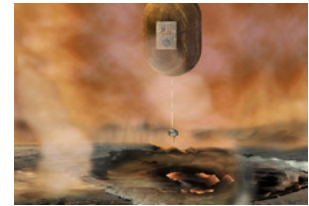
"Tarielka nemusí byť iba ruský lietajúci tanier pre tisíc pasažierov, ale dá sa využiť aj na omnoho špecifickejšie účely, napríklad ako lietajúca nemocnica, lietajúci tanker na hasenie požiarov alebo taxík na prepravu pasažierov z veľkých letísk do centier miest s vodnou plochou. Veľký potenciál má taktiež pre národy v Pacifiku ako ideálne lietadlo, ktoré môže štartovať skoro vertikálne a je možné s ním pristáť pred domom, vo vode, alebo ho zaparkovať na streche domu..."



AEROBOT

<https://en.wikipedia.org/wiki/Aerobot>

"For planets with atmospheres of any substance, however, there is an alternative: an autonomous flying robot, or "aerobot".^{[1][2]} Most aerobot concepts are based on aerostats, primarily balloons, but occasionally airships. Flying above obstructions in the winds, a balloon could explore large regions of a planet in great detail for relatively low cost. Airplanes for planetary exploration have also been proposed."





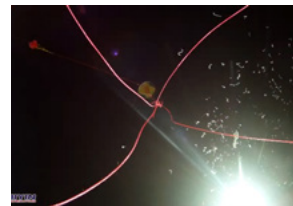
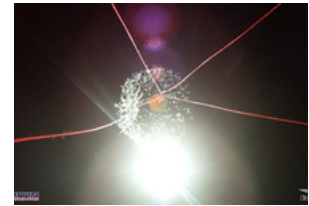
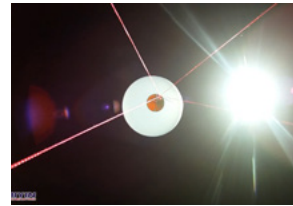
“QUAKE”

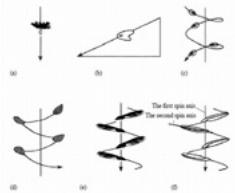
https://www.youtube.com/watch?v=s0w_CSXKLFHM
<http://ddeville.com/images/Rocket/Qu8k%20-%20The%20Story%20-%20Final.pdf>
“Amateur rocket reaches 121,000 ft.”

“The Qu8k rocket was launched successfully from the Black Rock Desert September 30, 2011, at 11:08am PST. Qu8k boosted perfectly straight, clearing the tower in three tenths of a second. Accelerating at up to 15g’s, Qu8k was traveling at peak velocity of 2,185 mph as it passed through 17,000 feet in only 10.5 seconds. Coasting upwards for another 80 seconds, a maximum altitude of 120,926 feet was achieved before the parachute was deployed. At that point, Qu8k was above 99% of the atmosphere, causing the sky to go black in the middle of the day. The curvature of the earth is clearly visible in the videos from the two onboard cameras and is accentuated by the thin blue line of atmosphere. These on-board cameras captured the magnificent views of the desert and surrounding areas of Northwestern Nevada, with a geometric horizon extending to the Pacific Ocean... Qu8k deployed its recovery parachute 90 seconds into the flight and descended to Earth over the next seven minutes.
...

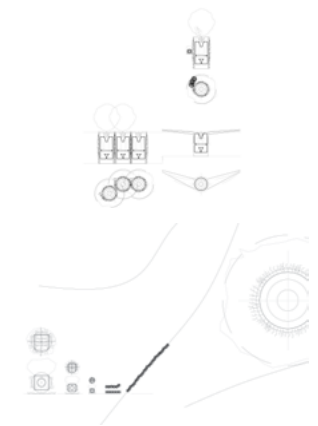
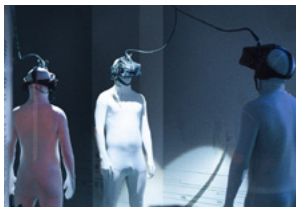
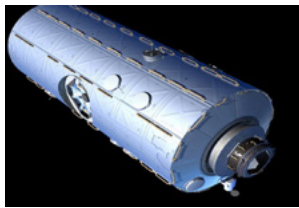
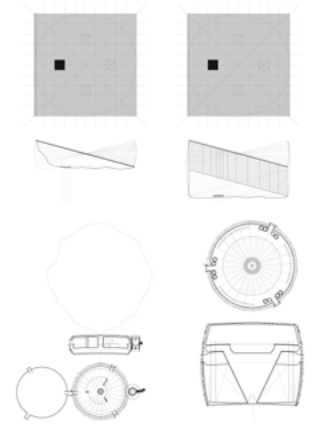


Although there were four independent GPS systems onboard Qu8k, none were able to maintain positional lock through the high acceleration and velocity of the flight’s boost phase. Nonetheless, accelerometer data and knowledge of the time to apogee from video made it possible to verify the 121,000 ft flight with high certainty.”

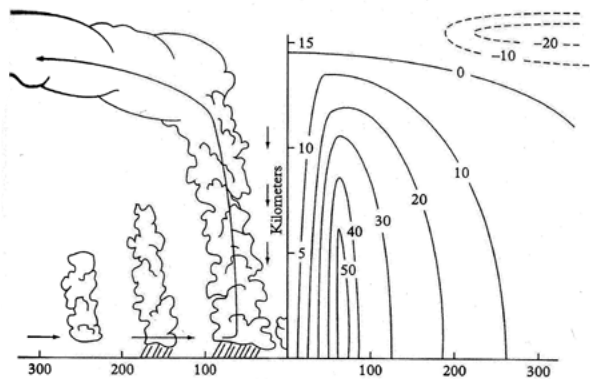




SOBESTAČNÉ MODULY



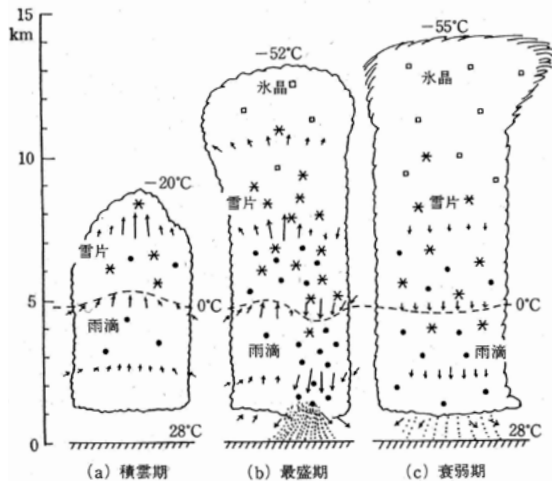
MRAKY



発達した熱帯低気圧の鉛直断面。放射状に広がる雲の分布と放射状、垂直方向の風の流れ(左)、毎秒ごとの方位に依じた風速(右)、負値は高気圧の流れ。
Vertical cross-section of a mature tropical cyclone. Left side: distributions of cloud and radial and vertical flow; right side, azimuthal wind speed (m/sec); negative values indicate anticyclone flow.

雲にも境界があり、その境界によってかたちをつくりだしている。その境界は近づいていくとぼやけて、境界としての意味合いを失い、ある距離を保って眺めると、はっきりとしたかたちとして姿をあらわす。スケールによって変化するそういう境界の在り方で建築を計画することができないだろうか。

Clouds have their own boundaries, which give them form. Close up these boundaries become blurred, losing their meaning as borders, only presenting clear contours when viewed from a certain distance. Is it possible to design a building using this approach to boundaries, changing according to the scale?



積乱雲の断面図。(a) 積雲期、(b) 最盛期、(c) 衰弱期。
Cross-section view of a cumulonimbus. (a) Developing stage (b) Mature stage (c) Dissipation stage

This is a 1:2500 scale model, of a building envisaged as being approximately 14km high. On roughly the same scale as a cumulonimbus cloud, it would also be the same height as the troposphere, where clouds are formed. The model measures 9.6m X 7.6m X 5.5m (W, D, H), and has a volume of some 400m³, and total weight of 9.8kg. The same volume of air would weigh around 500kg. Thus we have an extremely lightweight model, lighter than air, which is surprisingly heavy. Enlarged in the same proportions, the building would be lighter than air even at 14km tall.



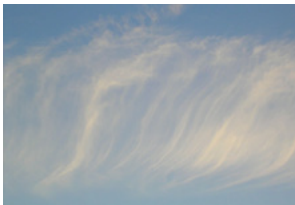
CUMULUS



CIRROCUMULUS TO
ALTOCUMULUS



ALTOCUMULUS



CIRRUS FIBRATUS

ANVIL CUMULUS



MAMMATUS STORM CLOUD



ARCUS CLOUD



NACREOUS CLOUDS

