CYBER-ARCH

DONE BY:

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➢ HOMEPAGE

As we go on with our daily life, a parallel space is being invisibly, silently yet rapidly and alluringly developed; that of Cyberspace. This new, vast and changing territory is becoming populated at a very fast rate and is perhaps being inhabited by the fastest growing community on Earth. This community is neither silent nor invisible; rather it is real, active and adaptable to parallel spaces.

Although it might seem unimaginable at times to know exactly where the expansion of cyberspace is leading us, most people agree that it is revolutionary and creating unprecedented change in many aspects of human life, from wealth and knowledge to rituals of social interaction and everyday lifestyles. New technologies being used to develop trends in architecture are mostly form generating and graphical visualization tools. Since architecture attempts to realize itself as a product of its context in the broad sense of the word, this thesis tries to understand the deep imprint of the development of cyberspace on architecture and extract potential design approaches from the human, spatial and temporal factors that define cyberspace and in particular the connection between it and corporeality.

There is an essential and direct relationship that exists between cyberspace and architecture. Marcos Novak puts it as follows;

"To the extent that this development inverts the present relationship of human to information, placing human within the information space, it is an architectural problem; but beyond this, cyberspace has an architecture of its own and, furthermore, can contain architecture. To repeat: cyberspace is

ARCHITECTURE, CYBERSPACE HAS AN ARCHITECTURE; AND CYBERSPACE CONTAINS ARCHITECTURE."[1]

ARCHITECTURE AND CYBERSPACE ARE RELATED TO ONE ANOTHER ON AT LEAST THREE MAJOR ARCHITECTURAL LEVELS: THE LEVEL OF URBAN DEVELOPMENT, THE LEVEL OF TRANSFORMATIONS IN PROGRAM, AND THE LEVEL OF REDEFINING QUALITIES OF SPACE. IF ONE CONSIDERS CYBERSPACE A PARALLEL WORLD, ITS FEATURES CAN EASILY BE PARALLELED OR COMPARED WITH ARCHITECTURAL FEATURES. THE CONNECTIVITY IN CYBERSPACE CAN BE VISUALIZED AS AN URBAN STRUCTURE; THE SPATIAL DIVISIONS IN CYBERSPACE OFTEN LITERALLY SPRING FROM AND ARE FORMED ACCORDING TO ARCHITECTURAL PROGRAMS; AND THE SPATIAL QUALITIES OF CYBERSPACE, ESPECIALLY IN THEIR EXPERIENTIAL SENSE, CAN BE TRANSLATED AND POSSIBLY APPLIED ON REAL ARCHITECTURAL SPACES. ONE OF THE AIMS OF THIS THESIS IS TO FIND MATURE METHODS OF THIS PROCESS OF TRANSLATION.

ANOTHER INTERESTING ASPECT IN CYBERSPACE IS THE ACT OF HACKING, WHICH IS IN COMPUTER LANGUAGE KNOWN AS THE MAJOR DIRECT PENETRATION BY HUMAN HACKERS TO CYBERSPACE. HACKING FORMS A LINK- THE VERY OBVIOUS DIRECT LINK- BETWEEN THE REAL WORLD AND THE CYBER ONE. HACKING IS EXECUTED BY TWO KINDS OF OPERATORS; REAL WORLD HUMAN HACKERS AND PROGRAMS HACKING PROGRAMS (VIRUSES) WITHIN CYBERSPACE ITSELF.

I WILL BE RESEARCHING LITERATURE REVIEWS AND CASE STUDIES ABOUT BOTH HACKING AND CYBERSPACE. THROUGH MY ANALYSIS OF BOTH, I WILL POINT OUT THE MAJOR KEYS THAT WILL BE EVENTUALLY LEADING US TO "CYBER-ARCH". HOWEVER, THE 'CYBER' IN "CYBER-ARCH" IS NOT AN INDICATION OF COLORFUL FLIPPANT ECCENTRICITY, BUT RATHER A REQUESTIONED TERM TRYING TO CAPTURE THE INFLUENCES OF CYBERSPACE THAT ARE PROFOUNDLY EMBEDDED IN THE ACTUALITY OF OUR EVERYDAY LIFE.

ALSO IN MY PROJECT I WANT TO BUILD UP ON A NOTION I FIND INTRIGUING AND INSPIRING; THE LOGIC OF HACKING IN

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1 NOVAK, M. (1991). "LIQUID ARCHITECTURES IN CYBERSPACE"; IN M. BENEDIKT (ED.): CYBERSPACE. FIRST STEPS. (CAMBRIDGE, MA: THE MIT PRESS) QUOTE P.226

ARCHITECTURE. THAT LOGIC, WHICH MIGHT BE ASSOCIATED WITH DISCOURSES SUCH AS PARASITIC ARCHITECTURE BUT PERHAPS CAN DELINEATE MORE DIVERSE INTERRELATIONS, COULD BE IMPLEMENTED AS SPACES HACKING SPACES OR PROGRAMS HACKING PROGRAMS.

AFTER THIS THESIS, I ANTICIPATE MY PROJECT TO REFLECT THE CONCLUSIONS EXTRACTED FROM CYBERSPACE QUALITIES AND HACKING LOGICS IN CYBERSPACE WHICH WILL BE EXPLAINED AND EXPLORED INTENSIVELY IN THE FOLLOWING CHAPTERS. THE PROJECT'S SITE AND PROGRAM SELECTION WILL THEN BE A PRODUCT OF THIS RESEARCH. ON THE OTHER HAND, I ALSO INTEND TO ADDRESS THE HACKERS (THE HUMAN LINKS) BY DEVELOPING A FACILITY FOR THEM AS USERS (ADMINISTRATORS), RESPONDING TO THEIR NEEDS AND THEIR WAYS OF LIVING, AS WELL AS PROVIDING POTENTIAL METHODS THEY CAN INTEGRATE THEMSELVES IN SOCIETY BY PROVIDING LEGAL SERVICES TO THE PUBLIC AND HELPING TO STRENGTHEN THE NATIONAL CYBER SECURITY.

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Site map

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The outline

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        Explaining and defining cyberspace, and what are the misconceptions about that space?

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            What is cyberspace and how it was identified and described by several authors

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            In the trilogy movies, cyberspace was presented graphically using literal presentations translated from the reality elements we have

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    Vocab and syntax extracted about cyberspace from the literature review, and how those could be used as space qualities or configurations to be applied in architecture.

➢ **RELATIONSHIP BETWEEN CYBERSPACE AND ARCHITECTURE**

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▪ **DIGITAL ARCHITECTURE**

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➢ **HACKING**

○ **WHAT IS HACKING?**

THE PENETRATION INTO SOMEONE'S PRIVATE CYBERSPACE, SPYING ON A TARGETED VICTIM, AND STEALING OTHERS' DATA FROM THEIR PERSONAL COMPUTERS

▪ **BBC CASE STUDY**

▪ **CASE STUDY (MATRIX TRILOGY)**

MATRIX TRILOGIES MOVIES: HACKING WAS REPRESENTED IN MANY FORMS LIKE CRACKING INTO ONE'S BRAIN, DIGITAL HACKING, AND THE WAR BETWEEN HACKERS.

➤ Cyberspace:

○ What is cyberspace:

To be able to really understand cyberspace, we should ultimately be able to imagine ourselves as the tiny bits running through that system. To initiate the procedure aiming at reaching that level of immersion, we can start with a simple dictionary definition of what cyberspace is: "The total interconnectedness of human beings through computers and telecommunications without regard to physical geography"[1]

The first time the word "cyberspace" was mentioned was in 1984 by William Gibson in one of his early novels, "Neuromancer". In that novel, he described cyberspace as a "consensual hallucination experienced daily by billions of legitimate operators, in every nation, by children being taught mathematical concepts... A graphic representation of data abstracted from the banks of every computer in the human system. Unthinkable complexity, Lines of light ranged in the non-space of the mind, clusters and constellations of data. Like city lights, receding..."

That word in fact gave a name to a new irresistible technological revolution that is definitely affecting the human culture, business, and architecture under the futuristic visions of technology.

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[1] HTTP://SEARCHWEBSERVICES.TECHTARGET.COM/SDEFINITION/0,290660, SID26_GCI211883,00.HTML

AFTER THAT, MANY TRIALS HAVE BEEN MADE TO DESCRIBE CYBERSPACE. MOST AGREED THAT CYBERSPACE IS A "PLACE" SINCE YOU CAN BE IN CYBERSPACE, YOU CAN ENTER CYBERSPACE AND YOU CAN GET OUT FROM CYBERSPACE. CYBERSPACE IS *WHERE* ONE CAN HAVE A MIND-CENTERED OUT-OF-BODY EXPERIENCE ENABLED BY ELECTRICAL HARDWARE DEVICES THAT ARE INVISIBLE IN THE SPECTACULAR PLETHORA OF VISUAL INSTANCES THAT SEEM TO MATERIALIZE CYBER PLACE.

HOWEVER THE DIRECT QUESTION THAT COMES TO MIND IS: WHERE IS THAT SPACE OR THAT PLACE? THE VERY OBVIOUS ANSWER IN MY OPINION IS: IT IS IN NOWHERE AND EVERYWHERE AT THE SAME TIME. IT IS IN NOWHERE SINCE IT HAS NO GEOGRAPHICAL LOCATION IN OUR PHYSICAL WORLD, BUT IT IS THERE AND REAL IN THE SENSE THAT ALMOST ANY HUMAN BEING CAN EXPERIENCE IT; IT IS AN EXPERIENCED SPACE AND HENCE IT IS REAL. WE CAN PERHAPS PERCEIVE METAPHORICALLY CYBERSPACE AS A PARALLEL UNIVERSE; A PARALLEL LAYER OF EXPERIENCE ABOVE US, BENEATH US, AMONG US, MESHED WITHIN OUR EVERYDAY LIVED... AS BRUCE STERLING DESCRIBES:

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"CYBERSPACE IS THE "PLACE" WHERE A TELEPHONE CONVERSATION APPEARS TO OCCUR. NOT INSIDE YOUR ACTUAL PHONE, THE PLASTIC DEVICE ON YOUR DESK. NOT INSIDE THE OTHER PERSON'S PHONE, IN SOME OTHER CITY, THE PLACE BETWEEN THE PHONES. THE INDEFINITE PLACE OUT THERE, WHERE THE TWO OF YOU, HUMAN BEINGS, ACTUALLY MEET AND COMMUNICATE"[2].

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[2] BRUCE STERLING: THE HACKER CRACKDOWN, BANTAM BOOKS, USA, 1993

THIS INTERESTING SKETCH DESCRIBES IN PARALLEL PHYSICAL AND NON-PHYSICAL ACTIONS, DEVICES AND SPACES. USING A 'PARALLEL' WAY OF EXPLAINING SUCH AS THIS CAN HELP CLEAR MISCONCEPTIONS PEOPLE HAVE ABOUT THE RELATION OF CYBERSPACE WITH THE PHYSICAL WORLD. CYBERSPACE IS UNDOUBTEDLY NEITHER THE COMPUTER ITSELF, NOR THE CONNECTING TOOLS AND APPLIANCES. HOWEVER, THOSE DEVICES ARE THE TOOLS THAT GENERATE- IN CODES- THE STRUCTURE OF CYBERSPACE. OTHERWISE, THEY ARE TOOLS TO ACCESS OR PLUG INTO THE CYBER WORLD. FOR EXAMPLE THE DISPLAY SCREENS ARE THE WINDOWS WE LOOK THROUGH UNTO CYBERSPACE; THE "INTERFACE" WHICH IS ACCESSIBLE TO US BECAUSE IT WAS DECODED AND TRANSLATED INTO A GRAPHICAL LANGUAGE WE HAVE ACQUIRED THE SKILLS TO COMPREHEND. AND THE CONNECTING MEDIA, WHICH ARE BECOMING MORE AND MORE INVISIBLE WITH TECHNOLOGICAL ADVANCEMENTS, PLUGS US INTO NETWORKS CONSTITUTING THE MAINFRAME WHERE CYBERSPACE LIES.

MANY DESCRIPTIONS AND THEORIES ABOUT CYBERSPACE WERE MADE AFTER GIBSON'S NOVEL AND MOST OF THEM REVOLVED AROUND CYBER SPATIAL QUALITIES THAT ARE SUGGESTIVE OF TANGIBLE DEPICTIONS NOT JUST METAPHORIC DESCRIPTIONS.

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■ Literature Review:

Here I will begin first with Gibson's first time mentioning the word "cyberspace" when he said "A year here and he still dreamed of **cyberspace**, hope *fading nightly*. All the speed he took, all the turns he'd taken and the corners he'd cut in *Night City*, and still he'd see the *matrix* in his sleep, *bright lattices* of logic unfolding across that *colorless void*..."[3]

That novel was about a former master hacker who could not access cyberspace anymore, and is grinding out a marginal and possibly suicidal existence in the Japanese underworld. Out of nowhere, he is given a bargain: his ability to work will be retrieved if he agrees to make a highly illegal and potentially lethal attempt to crack an artificial intelligence.

In that basically science fiction novel, the cyberspace was described metaphorically as a dark colorless space illuminated by bright lattices or small very shiny lamps representing the bits and bytes of data flying in light speed timelessly in dark cyber space.

Those bright lattices are in fact the global traffic of knowledge, secrets, measurements, indicators, and entertainment material. Those lattices can take the form of sights, sounds, presences that are either

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[3] William Gibson: Neuromancer, Ace books, USA, 1984, p.5 – p.9

IMPOSSIBLE OR TOO COSTLY TO BE REALIZED ON THE SURFACE
OF THE GLOBE.[4]

CYBERSPACE, AS I MENTIONED BEFORE, IS ACCESSED THROUGH
ANY COMPUTER ANYWHERE (THE WINDOW) LINKED TO THAT
SPACE OR PLACE. IT IS SOMEHOW *ONE PLACE, LIMITLESS*;[5] USED
EQUALLY BY ANYONE ANYWHERE WHO *ACCESSES* IT WHENEVER.
IT IS THE SAME UNIVERSAL DESTINATION SOUGHT WHETHER
FROM A BASEMENT FLOOR OF A BUILDING IN THE FAR WEST, OR
AN APARTMENT IN BEIRUT, OR AN OFFICE IN HONG KONG, OR
EVEN IF IT WAS ACCESSED BY A MACHINE IN A STATION BUILT
ON SOME OTHER PLANET (WHICH IS IN FACT EMPLOYED FOR
SECURITY OR MILITARY PURPOSES USING SATELLITES ORBITING
IN OUTER SPACE AND FOR TAKING IMAGES AND SENDING THEM
TO STATIONS LOCATED ON EARTH.)

HOW CYBER WORLD BECAME A SELF-EVIDENT PART OF OUR
WORLD IS A RESULTANT OF HISTORICAL EVOLUTIONS. THE
CORPOREAL WORLD WE ARE IN IS COMPOSED OF THREE
INTERCONNECTED WORLDS. THE FIRST WORLD IS THE OBJECTIVE
WORLD OF MATERIALISTIC NATURE AND HUMAN MADE THINGS.
THE SECOND WORLD IS THE SUBJECTIVE WORLD; THE WORLD OF
CONSCIOUSNESS LIKE CALCULATIONS, FEELINGS, EMOTIONS,
THOUGHTS, INTENTIONS, DREAMS AND MEMORIES. THE THIRD
ONE IS WHERE BOTH SUBJECTIVE AND OBJECTIVE WORLDS MEET
IN PHYSICAL AND NON PHYSICAL ENTITIES, FOR EXAMPLE,

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[4] BENEDICT M. "CYBERSPACE, FIRST STEPS"; IN DAVID BELL AND BARBARA
KENNEDY (ED.): THE CYBERCULTURES READER, ROUTLEDGE, LONDON, ENGLAND,
2000, P.29

[5] BENEDICT M. "CYBERSPACE, FIRST STEPS"; IN DAVID BELL AND BARBARA
KENNEDY (ED.): THE CYBERCULTURES READER, ROUTLEDGE, LONDON, ENGLAND,
2000, P.29

TEMPLES, CHURCHES, MARKET PLACES, LIBRARIES, THEATRES, MOVIES, LETTERS, ART SHOWS, IMAGES, SONGS, POEMS, SOUNDS... "AND CYBERSPACE WE MIGHT NOW SEE, IS NOTHING MORE OR LESS THAN THE LATEST STAGE IN THE EVOLUTION OF THE THIRD WORLD, WITH THE *BALLAST OF MATERIALITY CAST AWAY – CAST AWAY AGAIN,* AND PERHAPS FINALLY"[6]

IN CONCLUSION ABOUT WHAT AND WHERE CYBERSPACE IS, IT IS A WORLD THAT *IS* THERE, EXISTS *THERE*, METAPHORICALLY AND REALISTICALLY, EXPERIENCED AND EXPANDED EVERY TIME SOMEONE ACCESSES IT, EXPLOITS IT, OR ADDS TO IT. IT IS A SPACE THAT IS NEITHER TWO-DIMENSIONAL NOR THREE-DIMENSIONAL. IT IS, I BELIEVE, A MULTI-DIMENSIONAL WORLD THAT COULD BE ALTERNATINGLY OSCILLATING ACROSS DIMENSIONALITY ACCORDING TO ITS USAGE. FOR INSTANCE, IN A DISPLAY SCREEN TEXT OR IN A WORD PROCESSING PROGRAM IT IS USED AS A TWO-DIMENSIONAL PAPER THIN SPACE FOR TEXT AND PICTURES TO BE DISPLAYED AND ARRANGED ON THE SCREEN SURFACE. THAT SCREEN SPACE COULD BECOME THREE DIMENSIONAL WHEN USING ANOTHER TYPE OF PROGRAMS DEALING WITH 3D VISUALIZATIONS FOR VIEWING OR CONSTRUCTING A 3D VIRTUAL ROOM OR HOUSE IN A VIRTUAL ENVIRONMENT.

HOWEVER, ITS POTENTIAL LAYS ITS ABILITY TO BE AN 'N-DIMENSIONAL' SPACE INVISIBLY GENERATED BY AN ABSTRACT DATA STRUCTURE. A TESSERACT SPACE THAT IS AT LEAST FOUR-DIMENSIONAL ALTHOUGH NOT USING TIME AS A FOURTH DIMENSION. THE TIME FACTOR (ESPECIALLY CLOCK-TIME) IS

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[6] POPPER, K.: OBJECTIVE KNOWLEDGE: AN EVOLUTIONARY APPROACH, OXFORD PRESS, LONDON, ENGLAND, 1979, P.106 – P.152

SOMEHOW IRRELEVANT IN CYBERSPACE SINCE CYBERSPACE IS
TIMELESS. WE CAN GET FROM ONE POINT TO ANOTHER IN NO
TIME, OR IN THAT HUMANLY UNPERCEIVABLE LIGHT SPEED OF
THE BRIGHT LATTICES. IT IS A MULTI-DIMENSIONAL SPACE, A
SPACE RENDERED *TOPOGRAPHICAL* BY THE ABSTRACT BITS AND
BYTES MOVING AT LIGHT SPEED FROM POINT TO POINT ON THAT
PARALLEL LAYER, OR ACTUALLY THAT PARALLEL WORLD.

CYBERSPACE IS ALSO A VAST STORAGE SPACE WHERE ALL THE
INFORMATION WE HAVE ACCESS TO ARE FOUND, AND IS THAT
SPACE OF COMMUNICATION AND ENCOUNTERS BETWEEN TWO OR
MORE NODES IS TAKING A PLACE. IT IS THE REALM OF PURE
INFORMATION, A MATERIALISTICALLY CLEAN WORLD PROMISING
TO SAVE US FROM THE POLLUTION COMING OF THE PAPER
INDUSTRY AND THE DIESEL SMOKE COMING OUT OF THE TRUCKS
TRANSFERRING THE WRITTEN DATA FOR CONVENTIONAL MAILING
USED BY POST OFFICES AROUND THE WORLD.

- **Case study (Matrix Trilogy):**

The Matrix science fiction trilogy movies are inspired directly from what was written on cyberspace in literature, starting with Gibson's novel and his description of cyberspace especially where he mentioned the word "Matrix" to describe the bright lattices transferring data in the darkness.

The advancement in movie making made helped visualize a setting that materialized what was imagined as constituting a parallel virtual world. The movie makers were capable of representing qualities and descriptions of cyberspace (the matrix) and to cast them into visualizations, forms, and materials.

The matrix movies represented cyberspace symbolically and metaphorically sometimes, and literally and physically most of the time. For instance, a key generator program was represented as a human key maker. (Figure 1)

The following is a quick summary of the matrix trilogy. The movies are about a computer hacker named Neo who discovers that all life on Earth may be nothing more than an elaborate deceptive appearance created by a malevolent cyber-intelligence for the purpose of placating us while our life essence is "farmed" to be used as fuel for the Matrix's campaign of dominating the "real" world. He joins like-minded Rebel warriors,

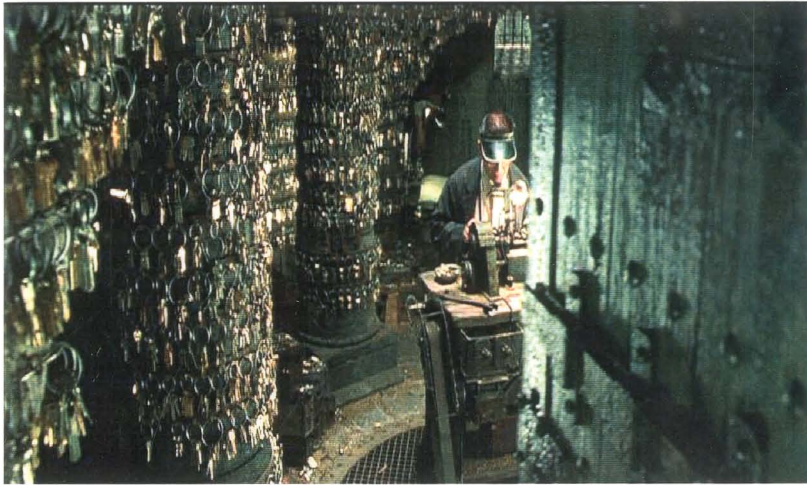MORPHEUS AND TRINITY, IN THEIR STRUGGLE TO OVERTHROW
THE MATRIX.

FIGURE 1: THE KEY GENERATOR PROGRAM IN REAL WORLD IS A HUMAN KEY
MAKER IN MATRIX

THE MOVIE IS TAKING PLACE 200 YEARS AFTER ITS FIRST
SHOWING IN THE THEATRES IN 1999, AS MORPHEUS DECLARES
IN THE MOVIE: "YOU BELIEVE IT'S THE YEAR 1999 WHEN IN
FACT IT'S CLOSER TO 2199".

SO IT IS SOMEHOW A FUTURISTIC VISION ABOUT HOW
EVERYTHING WE HAVE OR USE NOWADAYS WILL BE SOMEDAY
CONTROLLED USING THE NEW COMPUTERIZED TECHNOLOGY.
HOWEVER, IT TOUCHES UPON MANY ASPECTS OF OUR EVERYDAY
LIFE TODAY. WE ARE PROBABLY LIVING IN THE FIRST STEPS
TOWARD THAT EVOLUTION OF TECHNOLOGICAL ERA. WE ARE
NOW EXPERIENCING THE PRECEDENTS. EVERYDAY WE HEAR AND
LEARN ABOUT INVENTIONS THAT HAVE GROWING INTELLIGENCE
AND AROUND WHICH OUR LIVES IS BECOMING MORE AND MORE

ORGANIZED. EXAMPLES RANGE FROM ROBOTS, THE AUTOMATON WITH PROGRAMS WRITTEN TO CARRY OUT OUR REQUESTS TO THE ADVANCING MULTIFUNCTIONAL MOBILE PHONES THAT SORT OUT OUR DAILY LIFE.

WE ARE PROGRAMMING THOSE "MACHINES", CONTROLLING THEM TO SERVE US AND WE ARE SIMULTANEOUSLY CONTROLLED BY THEM. MOST OF US EXPERIENCE THAT PARADOX WHILE USING COMPUTERS AND HAVE LIVED MOMENTS OF FRUSTRATION UPON REALIZING THE LIMIT OF OUR CONTROLLING ABILITIES. FOR EXAMPLE, HOW MANY TIMES A VIRUS HIT YOUR COMPUTER AND DESTROYED SOME OF YOUR DATA OR VALUABLE WORK? OR WHAT IF THE COMPUTER JUST CRASHED OR FROZE AND SOME WORK IS LOST?

ANSWERS TO THOSE QUESTIONS SHOW US CLEARLY THAT WE ARE ALREADY BEING CONTROLLED IN A WAY OR ANOTHER BY GIZMOS OF TECHNOLOGY. WE DON'T FEEL THAT CONTROL WELL ENOUGH WHEN THOSE MACHINES ARE CARRYING OUT THEIR JOBS NATURALLY AND SUCCESSFULLY; THEN, THE COMPLEXES MECHANISMS THROUGH WHICH THEY FUNCTION ARE UNNOTICED. HOWEVER, WHEN THEY FAIL TO DO THEIR SPECIFIED JOBS, WE REGAIN CONSCIOUSNESS. OUR PLANS AND MOODS CHANGE, AND WE ARE CONFUSED ABOUT WHAT TO DO WITH THAT MACHINE WHICH IS FORCING US TO REPEAT THE WHOLE WORK. YES! WE ARE CONTROLLED. AT TIMES IT SEEMS THAT WE CANNOT SEEM TO BE ABLE TO LIVE ANYMORE WITHOUT THE SUPPORT OF THOSE MACHINES RUN BY STRUCTURED "PROGRAMS"- BRIGHT LATTICES OF ONES AND ZEROS ORGANIZING THEMSELVES TO FORM THE "MATRIX" CODE. SERIES OF BLINKING NUMBERS FORMING BRIGHT LATTICES (THE

HEADERS AND FOOTERS ON THE PAGES OF THIS DOCUMENT ARE THAT REPRESENTATION OF THAT CODE IN THE MAtrix.)

ONE QUESTION IS: WILL THOSE PROGRAMS AT SOME POINT IN TIME BUILD AND MODIFY THEMSELVES BY THEMSELVES (AS SELF GENERATION)? AND WILL THOSE MACHINES RUN OUT OF OUR CONTROL? THESE QUESTIONS ARE AT THE BOTTOM OF THE MAIN IDEAS THAT PRODUCED THE MATRIX MOVIES, WHICH TELL THE STORY OF THE WAR OF SURVIVAL BETWEEN HUMAN BEINGS AND THE MACHINES. THIS IS THE NARRATIVE PART, WHICH IS INTRIGUING, BUT PERHAPS NOT AS MUCH AS THE DESCRIPTIVE PART WHICH IS QUITE RELATED TO OUR DAILY LIVES NOW; THOSE REPRESENTATIONS OF THE CONNECTION BETWEEN THE REAL WORLD AND THE VIRTUAL ONE AND THE SPATIAL MATERIALIZATION OF VIRTUALITY.

IN THE MOVIE, CYBERSPACE WAS CALLED MAINLY "THE MATRIX". ALL THE HUMAN BEINGS LIVING IN THE MATRIX WORLD ARE IN FACT COMPUTER PROGRAMS DOING WHAT THEY ARE WRITTEN TO DO. AND IN THAT MOVIE, MOST OF THE REPRESENTATIONS OF "THE MATRIX" ARE GRAPHICALLY CONSTRUCTED TO PORTRAY A TANGIBLE AND MORE UNDERSTANDABLE IMAGE TO THE PERSON WATCHING THE MOVIES AND OF COURSE TO BE ABLE TO CREATE A PHYSICAL CONTEXT FOR THE FILMS.

IN THE FIRST FILM, MORPHEUS THE LEADER OF THE REBEL GROUP, WHEN INTRODUCING "THE MATRIX" TO NEO, THE HERO REBEL, SAYS "THIS IS THE CONSTRUCT."

AS THE MOVIE UNFOLDS, WE ARE INTRODUCED TO THIS WORLD CONSTRUCTED BY THE MACHINES. THE LIMITLESSNESS OF THE CYBER SPACE OF THE MATRIX WAS REPRESENTED SPATIALLY IN

AN UNBOUNDED WHITE SPACE WHERE THEY WERE STANDING HAVING THEIR CONVERSATION. (FIGURES 2, 3)

Let me out! I want out!

FIGURES 2, 3: PLUGGED INTO THE LIMITLESS SPACE "THE MATRIX"

THE LIMITLESSNESS OF CYBERSPACE WAS REPRESENTED IN ANOTHER INSTANCE IN THE SECOND MOVIE OF THE TRILOGY WHEN AS A VERY LIGHT AND VAGUE SCREEN OF A COMPUTER THAT IS IN CONTROL OF THE GATES OF ZION CITY. THE COMPUTERIZED ENVIRONMENT WAS DESIGNED SYMBOLIZING METAPHORICALLY THE 'SOFT'-WARE PROGRAMS AND HUMAN BEINGS (THE PROGRAMS) WERE FLOATING IN THAT LIMITLESS SPACE. (FIGURE 4)
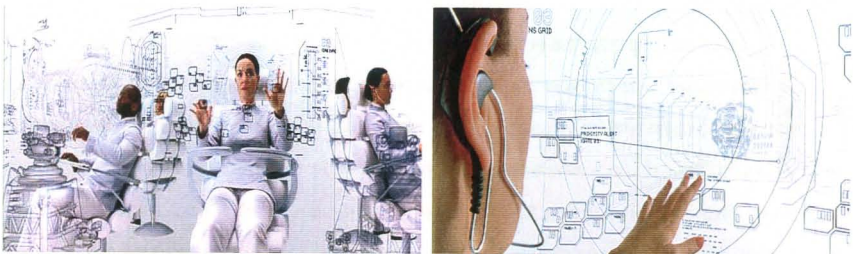
FIGURE 4: WHAT IS HAPPENING INSIDE A COMPUTER?

THIS ASPECT OF LIMITLESSNESS OF CYBERSPACE WAS
STRESSED ON IN THE MOVIES IMPLYING THE IMMATERIALITY OF
CYBERSPACE (FIGURE 4). THAT CONCEPT WAS METAPHORICALLY
REPRESENTED BY CONSTRUCTING SPACES THAT ARE MADE OF
UNIDENTIFIABLE MATERIALS AND MATERIALS THAT HAVE
SOMEHOW LOST THEIR SOLIDITY AND CONFINEMENT. THE
LIQUIDITY OF CYBERSPACE WAS PRESENTED IN THE RIPPLING
AND WAVY TRANSFORMATION OF THE GROUND AND THE
BUILDING ELEVATIONS AS IF THEY WERE WATER SURFACES
(FIGURES 5, 6).
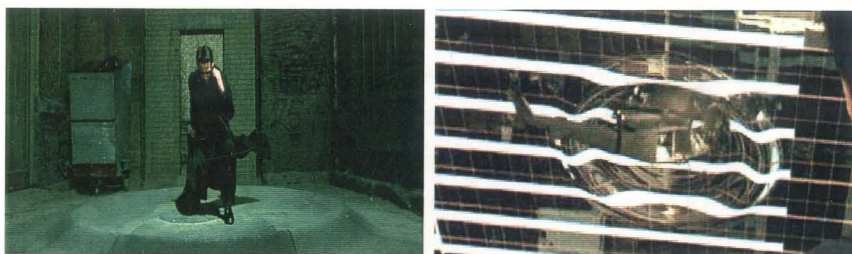

FIGURES 5, 6: LIQUIDITY OF CYBERSPACE

CYBERSPACE IS A CONSTRUCTED ABSTRACT OF INFO; WHEN WE
ARE IN THE SYSTEM, PLUGGED INTO THE MATRIX, THE MATRIX
COULD GENERATE TO US THE SPACES THAT ENGULF US,
TRANSLATED FROM THE PROGRAM CODE WRITTEN IN THAT
SYSTEM. THE INFORMATION CAN BE ABOUT EXPERIENCES OF
SPATIALITY, OR ABOUT FEELINGS AND DESIRES. IN THE MOVIES,
THAT ABSTRACTION WAS SHOWN AT THE BEGINNING OF THE
TRILOGY WHEN THE SETTING SUDDENLY TRANSFORMED TO A
JAPANESE HALL TO HOLD A KING FU PERFORMANCE (FIGURE 7).
AND THEN THAT ABSTRACTNESS WAS SHOWN WHEN ONE OF
MORPHEUS'S TEAM DESIGNED A WOMAN ACCORDING TO HIS

OWN VISUALIZATION (*ENTERTAINMENT*) OF A BEAUTIFUL SMILING
WOMAN WALKING AMONG THE PUBLIC IN A NOTICEABLE WAY.
(FIGURE 8)
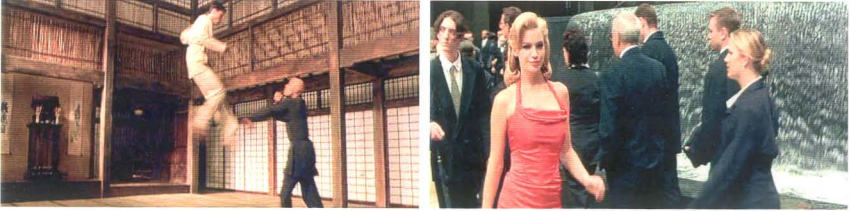
FIGURES 7, 8: CYBERSPACE, AN ABSTRACT OF INFO

ONE THE OTHER HAND, ANOTHER VERY ESSENTIAL ASPECT OF
CYBERSPACE WAS STRESSED ON, AND THAT IS THE
TIMELESSNESS FACTOR. THAT FACTOR IS REPRESENTED
CLEARLY FOR EXAMPLE IN A SCENE WHERE NEO IS RUNNING
AFTER ONE OF HIS ENEMIES (THE FRENCH MAN). THE SECOND
THAT NEO REOPENS A DOOR THROUGH WHICH THE FRENCH MAN
RUNS, THE SPACE OUTSIDE CHANGES TO ANOTHER SPACE
COMPLETELY- IN *NO TIME.* WHILE NEO WAS RUNNING HE SAW
THROUGH THE DOOR A ROOM, BUT AFTER THE DOOR GOT
CLOSED AND HE OPENED IT AGAIN, THAT ROOM BECAME A
LANDSCAPE SOMEWHERE VERY FAR FROM THE ROOM HE WANTED
TO GET INTO. (FIGURES 9, 10)
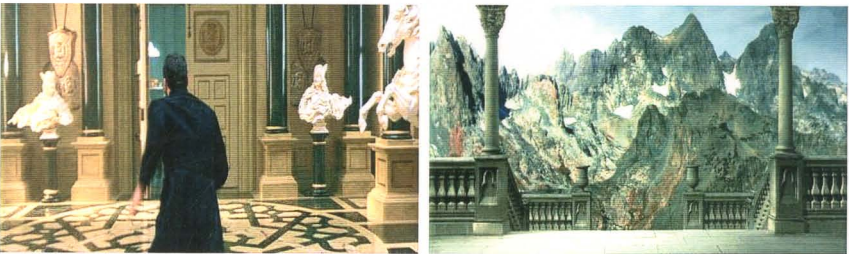
FIGURES 9, 10: TIMELESSNESS...

AT THE VERY END OF THE LAST MOVIE IN THE TRILOGY, THE
MOVIE MAKERS PORTRAY THEIR VERY CONCEPT OF CYBERSPACE.
CYBERSPACE IS THE NEW UNIVERSE WHICH IS COMPLEX,
FUNCTIONAL, AND YET BEAUTIFUL. IT IS AN ABSTRACT OF DATA
THAT COULD ME MODIFIED AND RECONFIGURED UPON OUR
NEEDS AND DESIRES (THE E-TOPIA). (FIGURE 11)


FIGURES 11: THE NEW BEAUTIFUL WORLD

○ **CONNECTIVITY:**

APART FROM THE SPATIAL QUALITIES PORTRAYED IN THE MATRIX, THERE ARE OTHER MAJOR QUALITIES THAT LIE AT THE BASIC UNDERSTANDING OF HOW CYBERSPACE IS CONSTRUCTED. CONNECTIVITY IS THE MAJOR ELEMENT THAT FORMS CYBERSPACE. IT IS THE MAIN FRAME BUILDING THAT PLACE. CYBERSPACE IS IN ITSELF CONCEPTUALLY THE TOTAL INTERCONNECTEDNESS OF HUMAN BEINGS THROUGH COMPUTERS AND TELECOMMUNICATIONS MEDIA.

CYBERSPACE IS IN FACT MULTIPLE CYBERSPACES CONNECTED WITH EACH OTHER; EACH CYBERSPACE IS FORMED THROUGH THE CONNECTIVITY AMONG SEVERAL NODES TO FORM THE SMALLEST FORM OF NETWORKING IN THE CYBERSPACE, WHICH IS CALLED LOCAL AREA NETWORK (LAN). THAT NETWORK IS CONNECTED TO OTHER NETWORKS TO FORM A LARGER NETWORK OR WIDE AREA NETWORK (WAN). THEN SEVERAL WANS ARE CONNECTED TO EACH OTHER TO FORM THE LARGEST CYBERSPACE WHICH IS THE WORLD WIDE WEB (WWW). FROM ITS NAME, IT IS A WORLD COVERING THE ENTIRE GLOBE'S SURFACE AREA (THE PARALLEL LAYER), AND IT IS CALLED A WEB TO EMPHASIZE CONNECTIVITY.

LAN
WAN
WWW
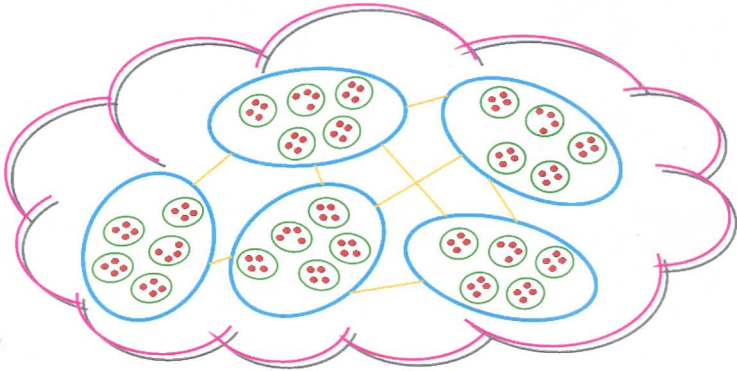
■ **TYPES OF NETWORKS:**

IN CYBERSPACE WE HAVE MAINLY TWO TYPES OF NETWORKS. THE TYPES DIFFER FROM EACH OTHER BY HOW EACH ONE IS FORMED AND OPERATED.

FIRST, PEER-TO-PEER NETWORKS:

IN P2P NETWORKS, NEARLY ALL OPERATING SYSTEMS COME WITH THE ABILITY TO SHARE RESOURCES. EACH OF THE CLIENT COMPUTERS (NODES) HAS ITS OWN PROCESSING AND STORAGE CAPABILITY, AND BECAUSE OF THAT, EACH COMPUTER IN THAT NETWORK CAN BE UNPLUGGED FROM THAT NETWORK AND TO WORK ON ITS OWN.
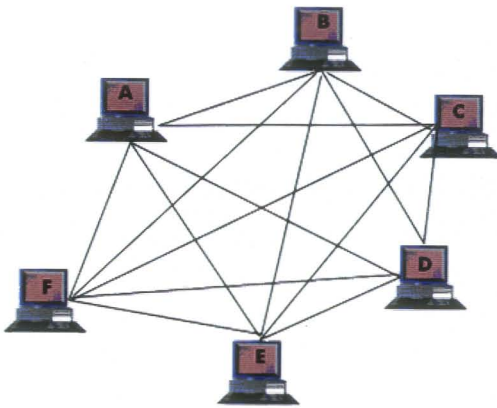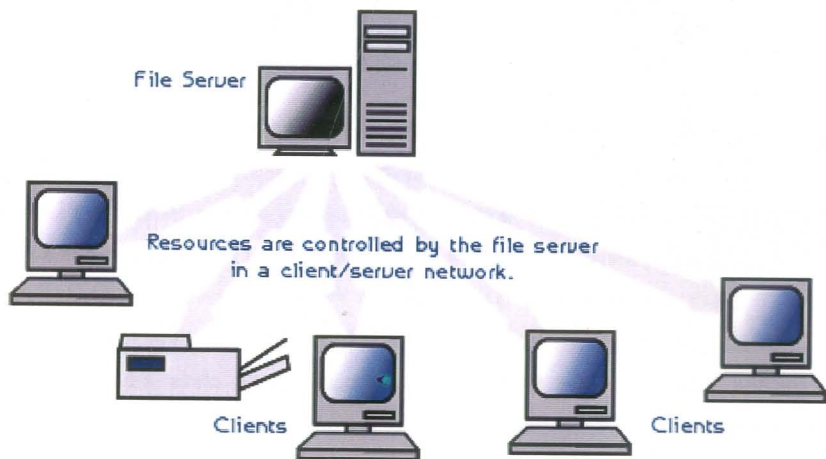
IN P2P NETWORKS, YOU CAN SETUP DIFFERENT COMPUTERS TO ALLOW THE USE OF COMMON PERIPHERALS SUCH AS PRINTERS OR CDROM DRIVES, AND TO ENABLE OTHERS WORKING ON DIFFERENT COMPUTERS TO READ OR WRITE TO COMMON HARD-DISKS SPACES. THIS ALLOWS SHARING OF FILES, AND OTHER FACILITIES SUCH AS ACCESS TO INTERNET CONNECTION LINKED TO THE SERVER. WHEN WORKSTATION COMPUTERS BECOME SERVERS AND SHARE THINGS IN THIS MANNER, A PEER-TO-PEER NETWORK IS CREATED.

ON A PEER-TO-PEER NETWORK, IT IS VERY DIFFICULT TO IMPLEMENT A GOOD BACKUP SYSTEM BECAUSE IMPORTANT DOCUMENTS TEND TO BE STORED ON DIFFERENT HARD DISKS ON DIFFERENT COMPUTERS. IF YOU DO MANAGE TO IMPLEMENT A GOOD BACKUP POLICY, CHANCES ARE GREAT THAT AFTER A WHILE SOME VERY IMPORTANT DOCUMENTS WILL NOT GET ARCHIVED BECAUSE SOMEONE "ACCIDENTALLY" SAVED THEM TO THE WRONG LOCATION ON THE NETWORK. THIS IS A COMMON PROBLEM IN P2P DECENTRALIZED CONSTRUCTS.

Second, Client-Server Networks:

The Client-Server network model usually consists of one server computer that provides services and information to a number of workstation computers. The services are numerous, including file services, web services, email services, domain name lookup services, document version system services, Internet sharing services, etc

In this kind of network, there is a dominant centralized administrative computer that has the largest processing and storage capacities. It is sometimes used as a backup device because of its security and huge storage capacity. The other nodes (clients) in the network have very limited processing and storage capability. And in some cases they could have no processing or storage capabilities at all because of the total dependence on the central server administrating that network.

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File Server

Resources are controlled by the file server
in a client/server network.

Clients

Clients

SECURITY IS RELATIVELY EASY TO IMPLEMENT WITH THIS TYPE
OF NETWORK MODEL, SINCE YOU CAN SETUP A **SINGLE SERVER**
COMPUTER TO HANDLE ALL INFORMATION REQUESTS OR LOGIN
REQUESTS FOR THE ENTIRE NETWORK.

INFORMATION CONTROL IS ALSO EASIER WITH THIS TYPE OF
NETWORK MODEL BECAUSE ONE INDIVIDUAL SERVER COMPUTER
STORES ALL THE IMPORTANT DOCUMENTS OF A COMPANY, FOR
EXAMPLE, IN A SINGLE STORAGE SPACE.

○ **SPATIAL QUALITIES:**

THE SPATIAL QUALITIES OF CYBERSPACE OR WHAT WILL BE
CALLED FROM NOW ON IN THIS DOCUMENT 'THE CYBER SPATIAL'
QUALITIES ARE MAINLY THE KEY WORDS OR VOCABULARY AS
WELL AS THE SYNTAX EXTRACTED FROM THE PREVIOUS
LITERATURE REVIEW ABOUT CYBERSPACE AND FROM THE
FOLLOWING HYPERLINK (CHAPTER) 'RELATIONSHIP BETWEEN
CYBERSPACE AND ARCHITECTURE'. THOSE TERMS THAT WERE
MOSTLY EXTRACTED FROM MY LITERATURE REVIEW AND THE
CASE STUDY INSPIRE SPATIAL MEANINGS, AND HAVE POTENTIAL
OF BECOMING THE LITERAL ARCHITECTONICS OF MY PROJECT.
THE FOLLOWING IS A PRELIMINARY LIST OF RELEVANT
TERMINOLOGIES WITH A SUBJECTIVE DEFINITION.

- NEW UNIVERSE (N): AN UNBOUNDED SPACE WHICH IS FRESH,
  UP-TO-DATE AND ORIGINAL, OR PRESENTING ITSELF AS
  DIFFERENT FROM ANYTHING THAT CAME BEFORE IT.

- ENTERTAINMENT (N): OPPOSITE OF BOREDOM; A
  CELEBRATION OF ENJOYMENT OF LIFE.

- LIMITLESS (ADJ): PHYSICALLY OR SEEMINGLY WITHOUT
  BOUNDARIES. UNRESTRAINED AND ABSOLUTE.

- TIMELESS (ADJ): UBIQUITOUS, FOUND EVERYWHERE AND
  NOWHERE SIMULTANEOUSLY.

- NO MATERIALITY (N): FAINT, SILENT, WEIGHTLESS, HAVING
  NO PREDICTABLE DEFINITION OF SUBSTANTIALITY.

- DARKNESS (N): DEPTH, DIMNESS, AND OBSCURITY.

- **Bright Lattices (n):** Modular structures constructed of intense vibrating light.

- **Colorless (adj):** neutral and visibly accessible.

- **Accessible (adj):** reachable, understandable and available nearby.

- **Systematic Planning (n):** logical set of actions to reach a definite goal.

- **Complex, Functional and yet Beautiful (adj):** having a complicated infrastructure exploiting the available technological advancements that is working within a system that aims at fulfilling a rational yet pleasurable function. Its complexities as well as its purposes have a glow of beauty, and maybe even art.

- **Non-physical (adj):** virtual, ethereal, can disappear.

- **Abstract of Info (n):** a conceptual construct of all available data.

- **Traffic of Info (n):** fast movement of ethereal substances causing turmoil.

- **Void (n):** null space. Opposite of traffic.

- **Total Connectivity (n):** Full ability of inter- and intra- communication

- **Parallel World (n):** a world that is self sustaining, pervasive and unstoppable in its development, regarding of other worlds' development, and yet can be related and moving along similar trajectories (parallel trajectories.)

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➤ RELATIONSHIP BETWEEN CYBERSPACE AND ARCHITECTURE:

○ CYBERSPACE ARCHITECTURE:

THE LITERATURE REVIEW AND CASE STUDY OF THE MATRIX TRILOGY POINTED OUT SOME KEYWORDS ABOUT CYBER SPATIAL QUALITIES. YET THIS IS ONLY THE BEGINNING; THERE ARE MANY OTHER IMPORTANT KEYWORDS THAT DESCRIBE SPATIALITY AND TRANSCEND THE THEORETICAL OR ABSTRACT TO RELATE DIRECTLY TO ARCHITECTURE IN ITS DEFINITION AS IMPLEMENTED DESIGN AND IN ITS STRATEGICAL ASPECTS OF PLANNING.

IN ARCHITECTURAL DESIGN, WE GO THROUGH DIFFERENT PHASES TO REACH THE COMPLETION OF THE PRODUCT: THE FACILITY OR THE BUILDING. SIMILARLY, CYBERSPACE CREATION OR 'BUILDING' REQUIRES DIFFERENT SKILLS AND PHASES TO BE UPLOADED, OR PUBLISHED; IN OTHER WORDS, BUILT. IT REQUIRES CONSTANT *PLANNING* AND STRATEGIC ORGANIZATION. CYBERSPACE HAS STRUCTURE, WHICH REQUIRES DESIGN; THE WORKFORCE IN CHARGE OF THAT DESIGN IS CALLED *CYBERSPACE ARCHITECTS.* ON THE OTHER HAND, WE ALSO HAVE THOSE WHO ARE FURTHER KNOWLEDGEABLE IN COMPUTER SCIENCE AND THE PROGRAMMING LANGUAGES (THE TOOL FOR THE ACTUAL CONSTRUCTION PROCESS). WE ALSO HAVE THE DECORATORS OR THE INTERIOR DESIGNERS IN CYBERSPACE WHOSE MAIN ROLE IS DESIGNING THE GRAPHICS AND USER-FRIENDLINESS

OF THE "INTERFACE" IN COORDINATION WITH THEIR FELLOW CYBERSPACE ARCHITECTS IN ORDER TO PRODUCE AN OUTCOME THAT IS *COMPLEX, UNIQUE, FUNCTIONAL, INVOLVING AND BEAUTIFUL.*[1]

ACCORDING TO WHAT WAS DISCUSSED IN THE PREVIOUS LINK, 'CYBERSPACE', CYBERSPACE IS A SPACE; IN FACT IT IS A PLACE, A MULTI DIMENSIONAL PLACE. WE CAN ALL LIVE IN THAT SPACE; WE EVEN HAVE ADDRESSES THERE. ALTHOUGH THEY ARE DIFFERENT FROM THE GEOGRAPHICALLY POSITIONED ONES WE HAVE IN THE PHYSICAL REAL WORLD, OUR ADDRESSES IN CYBERSPACE ARE IN FACT EXTREMELY SPECIFIC LOCATIONS.

IN CYBERSPACE, BOTH THE COMPUTERS AND THE USERS CAN BE LOCATED AND REACHED ALBEIT IN A WAY THAT IS DIFFERENT FROM THE REAL WORLD. EACH COMPUTER IN CYBERSPACE IS ASSIGNED WITH WHAT IS CALLED AN INTERNET PROTOCOL (IP), WHICH IS THE ADDRESS USED TO REPRESENT A COMPUTER OR ANOTHER DEVICE ON THE INTERNET. THESE PROTOCOL ADDRESSES CAN LOCATE EACH COMPUTER ON THE NET OR IN CYBERSPACE. THE USERS ALSO HAVE THEIR OWN ADDRESSES IN THE NET; THOSE ADDRESSES ARE CALLED E-MAIL ADDRESSES, SIMILAR TO POSTAL CODES AND MAIL ADDRESSES IN REAL SPACE. EACH OF US CAN BE REACHED THROUGH HIS/HER OWN E-MAIL ADDRESS THAT CAN BE OPENED AND BROWSED FROM ANY COMPUTER ANYWHERE ON EARTH.

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[1] BENEDICT M. "CYBERSPACE, FIRST STEPS"; IN DAVID BELL AND BARBARA KENNEDY (ED.): THE CYBERCULTURES READER, ROUTLEDGE, LONDON, ENGLAND, 2000, P.40

Not only do we then exist and are specifically located in that cyber space, but we are also universally networked through that net. The networking which is a major outcome of having a "cyberspace" can be, in terms of its providing connectivity at different scales of cyber spaces/places, compared to the relationship of an individual or a group of indivuals to different spatial environments, including the urban one. "Cyberspace has a geography, a physics, a nature, and a rule of human law. In cyberspace the common man and the information worker can search, manipulate, create or control information directly; he can be entertained or trained, seek solitude or company, win or lose power... indeed, can "live" or "die" as he will"[2]

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[2] Benedict M. "cyberspace: some proposals"; in his (ed.): Cyberspace First Steps, MIT Press, Cambridge, England, 1991, p.123

"On the Internet, nobody knows you're a dog."

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CYBER PLACE IS IN FACT A PUBLIC SPACE BECAUSE IT CAN BECOME ACCESSIBLE BY EVERYONE. MOST OF THE PLACES IN CYBERSPACE ARE INTENDED TO BE EASILY ACCESSIBLE BY WHOEVER WANTS TO ACCESS THEM, BUT OTHER CYBER PLACES ARE PRIVATE, WHICH CAN BE VISUALIZED AS REAL WORLD BUILDINGS OR COMPLEXES WHICH ARE GUARDED BY GATE KEEPERS OR SECURITY MEMBERS. IN CYBERSPACE, THEY ARE GUARDED AND PROTECTED BY "PASSWORDS" OR AT TIMES BY HIDDEN PATHS LEADING TO THEM WHICH ARE UNKNOWN TO EVERYONE BUT THE ONES WHO ARE ALLOWED TO ACCESS THEM, SO THAT THEY KNOW HOW TO FIND THEIR WAY TO REACH THEIR PRIVATE PLACES. THOSE HIDDEN

PATHS OR "BACK DOORS" IN CYBERSPACE ARE JUST NORMAL WEB PAGES; YOU OPEN THEM, AND THEN YOU INSERT A SPECIFIC INSCRIPTION INTO THE COMPUTER, AND IT RE-ENCODES THAT PAGE AND REOPENS IT WITH A COMPLETELY DIFFERENT KIND OF INFO.

GOING BACK TO THE LITERAL MEANING OF CYBERSPACE, AN INTERESTING QUESTION COMES TO MIND: WHY IS CYBERSPACE CALLED A "SPACE" IN THE FIRST PLACE?

IN THE PREVIOUS LINK, I HAVE DISCUSSED THE MULTI DIMENSIONALITY OF CYBERSPACE IN TERMS OF THE USAGE OF THAT SPACE. TO IDENTIFY A SPACE IN THE REAL WORLD, WE RESORT TO THE PHYSICAL ASPECTS OF REALITY. THE BASIC RULES OF PHYSICS, IN OUR REAL PHYSICAL WORLD, TELL US THAT WE HAVE THREE MAIN AXES THAT WE CAN USE TO FORM AND LOCATE A SPACE, AND A REFERENCE POINT. THESE ARE THE X, Y, AND Z AXES; EACH IS ASSIGNED A SPECIFIC DIRECTION AND A SPECIFIC SET OF DIRECTION FORM THE COORDINATES OF A GIVEN POINT OR ITS LOCATION IN THE SPACE. HOWEVER, SINCE CYBERSPACE IS AN EASILY MANIPULATIVE SPACE, THE COORDINATES IN CYBERSPACE ARE ASSIGNED IN A DIFFERENT MODE AND ARE GIVEN OTHER ATTRIBUTES IN ADDITION TO THE X, Y, AND Z COORDINATES OF THE REAL WORLD.

FOR EXAMPLE, IF WE HAVE ALONG THE X AXIS MANY OBJECTS THAT ARE BLUE, THEY ARE CLASSIFIED ACCORDING TO THEIR DEGREES OF BLUENESS[3]. SO MOVING ALONG THE X AXIS IS NOT JUST GIVING US A LOCATION OF THAT

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[3] NOVAK M. "LIQUID ARCHITECTURE IN CYBERSPACE"; IN BENEDICT M. (ED.): CYBERSPACE FIRST STEPS, MIT PRESS, CAMBRIDGE, ENGLAND, 1991, P.236

OBJECT, BUT IT IS ALSO PROVIDING US WITH ITS BLUENESS
FACTOR. OTHER ATTRIBUTES COULD BE ASSIGNED TO THE
OTHER AXES; THE Y AXIS FOR EXAMPLE COULD BE ASSIGNED
WITH A ROTATION FACTOR, SO AS WE MOVE ALONG THAT
AXIS THE ROTATION ANGLE INCREASES, AND SO FORTH. AS
SHOWN IN THE FOLLOWING FIGURE:

The X- axis &
The blueness axis
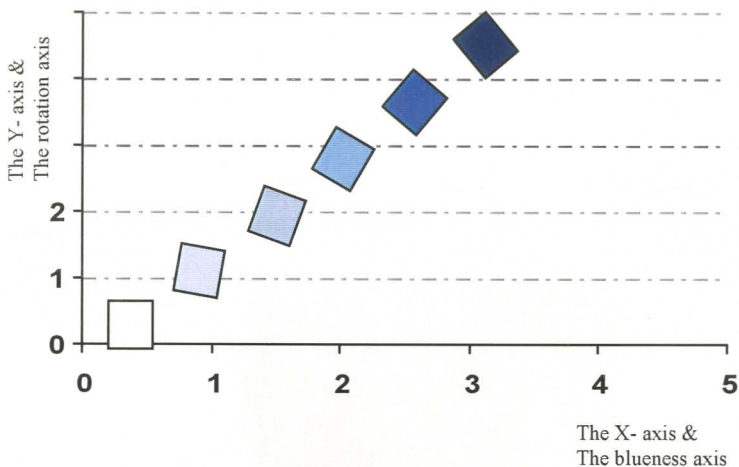
CYBERSPACE ARCHITECTURE IS IN FACT
ARCHITECTURE. THAT VISIONARY ARCHITECTURE EXCEEDS
REAL WORLD ARCHITECTURE IN ITS SEARCH FOR THE
IMAGINABLE AND NON-IMAGINABLE, BELIEVABLE AND
UNBELIEVABLE, POSSIBLE AND IMPOSSIBLE, FEASIBLE AND
UNFEASIBLE. IT IS "LIKE POETRY, SEEKS AN EXTREME, ANY
EXTREME, BEAUTY, AWE, STRUCTURE, OR THE LACK OF
STRUCTURE, ENORMOUS WEIGHT, LIGHTNESS, EXPENSE,

ECONOMY, DETAIL, COMPLEXITY, UNIVERSALITY, AND UNIQUENESS"[4].

MANY ARCHITECTURAL TRIALS AND DISCOURSE THROUGHOUT HISTORY HAVE BEEN DEVELOPED AS THE FIRST STEPS TOWARD THE VISIONARY ARCHITECTURE, THE ARCHITECTURE OF THE EXTREME, THE CYBERSPACE ARCHITECTURE. A VERY INTERESTING EXAMPLE, WHICH SHOWS CLEARLY THIS KIND OF REVOLUTION, IS THE FAMOUS PIRANESI *CARCERI* PAINTING. IT IS OFTEN REFERRED TO BY AUTHORS ACCOMPANIED BY THE FOLLOWING QUOTE: "MAN WILL ESCAPE HIS HEAD AS A CONVICT ESCAPES HIS PRISON"[5]. THIS PAINTING ILLUSTRATES ONE OF THE EXTREMES MENTIONED BEFORE, THE UNBUILDABLE.

34
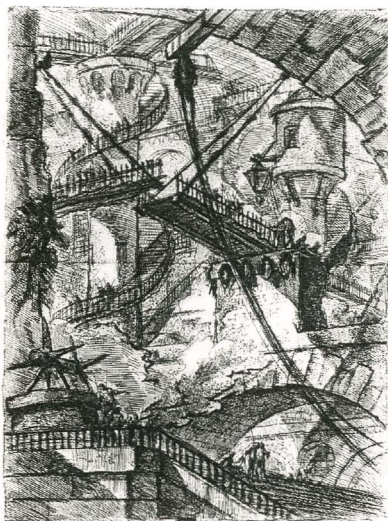
[4] NOVAK M. "LIQUID ARCHITECTURE IN CYBERSPACE"; IN BENEDICT M. (ED.): CYBERSPACE FIRST STEPS, MIT PRESS, CAMBRIDGE, ENGLAND, 1991, P.244

[5] HOLLIER D.: AGAINST ARCHITECTURE: THE WRITINGS OF GEORGE BATAILLE, MIT PRESS, CAMBRIDGE, ENGLAND, 1989

THE HEAD IMPRISONS THE BRAIN AND THE SCIENTIFIC LIMITATIONS OF LOGIC ITS IMAGINATION. BUT WHO SAID THAT WHAT WAS ILLOGICAL IS STILL SO SINCE PIRANESI'S ERA? AS IT WAS EASY FOR PIRANESI ALONG WITH OTHER PAINTERS TO BUILD WITH "PAINT" THEIR OWN WILD IMAGINARY SPACES, IT IS EASY NOWADAYS TO CONSTRUCT ALMOST WHATEVER SPACE WE IMAGINE IN CYBERSPACE, AND THEN TO SEARCH FOR WAYS TO IMPLEMENT IT ON THE GROUNDS OF REALITY, ASSISTED BY THE NEW ADVANCEMENTS IN ARCHITECTURAL TECHNOLOGY AND MATERIALS, AND BY THE USE OF COMPUTERS, AGAIN, TO ASSESS AND CALCULATE CONSTRUCTABILITY ISSUES TO RENDER THAT ARCHITECTURE FEASIBLE AND BUILDABLE.

IN SUCH A WAY, WE ARE BEING ABLE TO ADD TO THE SUBJECTIVITY AND EXPRESSIONIST FACTOR TO ARCHITECTURE, WHICH RELATES BACK TO WHAT WAS STATED IN THE FIRST LINK AS THE ABSOLUTE MEANING OF CYBERSPACE; THE LAST REVOLUTION OF THE THIRD WORLD. THE ABILITY TO USE CYBERSPACE AS AN EXPERIMENTAL SITE FOR ARCHITECTURE MAKE IT EASIER TO VISUALIZE DRAWING OUT THAT SPACE AND HENCE CONSTRUCTING IT.

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"ARCHITECTURE HAS NEVER SUFFERED A LACK OF FERTILE DREAMS. ONCE, HOWEVER, IN TIMES FAR LESS ADVANCED TECHNOLOGICALLY, THE DISTANCE BETWEEN VISION AND EMBODIMENT WAS SMALLER, EVEN THOUGH THE EFFORT REQUIRED FOR THAT EMBODIMENT WAS OFTEN CRASHING. MOST "GRAND TRADITIONS" BEGAN WITH AN EXPERIMENTAL STAGE OF DANGER AND DISCOVERY AND DID NOT BECOME FOSSILIZED UNTIL MUCH LATER... THE DREAM AND THE MAKING WERE ONE. CURIOUSLY, THE PRACTICE OF

ARCHITECTURE HAS BECOME DISENGAGED FROM THOSE DREAMS"[6]. BUT NOW, THE TOOL OF CYBERSPACE IS IN OUR HANDS, AND PERHAPS IF WE USE IT WISELY, WE MIGHT ERASE THAT RIDGE FOREVER.

SOME COULD ARGUE THAT CYBERSPACE ARCHITECTURE IS CREATING MERELY SCULPTURAL ARCHITECTURE. I DISAGREE WITH THIS FOR TWO MAIN REASONS. FIRST, YES IT IS SOMETIMES SCULPTURAL BUT ONE CAN LOOK AT THIS ISSUE FROM A DIFFERENT ANGLE: THE SCULPTURAL ASPECT CAN REPRESENT ITS SUBJECTIVITY THAT CAN NOW BE EFFECTUALLY RE-ADDED TO ARCHITECTURE AFTER IT HAS OFTEN BEEN LOST AND STRANGLED WHERE ARCHITECTURE BECAME TOO EARTH-BOUNDED. FOR EXAMPLE, HOW OFTEN DO WE HEAR PHRASES LIKE: NO, IT IS NOT FEASIBLE, OR: THAT'S VERY HARD TO BUILD, OR: LET US JUST STICK TO MINIMAL NEEDS OF SPACE FOR ITS OPERATIONAL FUNCTIONING. THE SUBJECTIVENESS AND THE ART OF CREATING SPACE (ARCHITECTURE) IS OFTEN DISMISSED IN PURELY FUNCTIONAL, LOGICAL ARCHITECTURAL DISCOURSES! ON ANOTHER HAND, THE SCULPTOR IS COMPLETELY FREE TO MOLD IN WHATEVER EXPERIENCES AND EXPRESSIONS HE/SHE DESIRES. SECOND, SCULPTURES, AS SUCH, ARE OBJECTS THAT ARE CREATED TO BE OBSERVED. BUT WHEN THAT OBJECT IS TO BE INHABITED BY USERS, IT COULD THEN BE CALLED ARCHITECTURE. INHABITANCE DOES NOT ONLY IMPLY THE PRESENCE OF FUNCTIONS AND PROGRAMS WITHIN THAT

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[6] NOVAK M. "LIQUID ARCHITECTURE IN CYBERSPACE"; IN BENEDICT M. (ED.): CYBERSPACE FIRST STEPS, MIT PRESS, CAMBRIDGE, ENGLAND, 1991, P.248

OBJECT TO BE USED BY ITS OCCUPIERS; OCCUPYING A SPACE MEANS MUCH MORE THAN USING IT. THERE IS THIS PERSONAL LAYER OF CONSCIOUSNESS OF THE SPACE AS OUR BODIES AND THEIR MOVEMENT IN SPACE- BOTH SCULPTURAL ENTITIES INHABITING A SCULPTURE. HOWEVER, THE FUNCTION IS A BASIC COMMON ASPECT BETWEEN ARCHITECTURE AND CYBERSPACE. ARCHITECTURAL ENTITIES OFTEN HAVE PROGRAMS, OR FUNCTIONS DISTRIBUTED WITHIN SPECIFIC SPACES. THOSE PROGRAMS ARE DESIGNED AND BUILT TO SERVE OUR SPECIFIC NEEDS. SIMILARLY IN CYBERSPACE, WE HAVE THE SOFTWARE, ALSO CALLED PROGRAMS THAT ARE DESIGNED TO SERVE SPECIFIC NEEDS AND PURPOSES.

SO THE ARCHITECTURE OF CYBERSPACE HAS ITS OWN LAYERS THAT ARE PARALLEL TO THOSE OF ARCHITECTURE IN REAL WORLD. THE MESHING OF THE URBAN FABRIC IN THE REAL WORLD IS PARALLEL TO THE CONNECTIVITY IN CYBERSPACE. EACH CYBERSPACE IS CONNECTED TO ANOTHER CYBERSPACE LIKE URBAN ZONES AND NEIGHBORHOODS ARE CONNECTED TO ONE ANOTHER. THE MEANS CREATING THIS CONNECTIVITY ARE THE WAYS WE TRANSFER OURSELVES THROUGH THEM FROM ZONE TO ANOTHER LIKE THE ROADS, RAILROADS AND AIRPLANE PATHS OF THE REAL WORLD, WHICH IS SIMILAR TO THE DATA CABLES AND THE WIRELESS OSCILLATIONS TRANSFERRING THE INFORMATION FROM A CYBERSPACE TO ANOTHER CYBERSPACE; AND THEREFORE, CONNECTING ARCHITECTURE TO ARCHITECTURE. "...TO REPEAT: CYBERSPACE IS

ARCHITECTURE, CYBERSPACE HAS AN ARCHITECTURE; AND CYBERSPACE CONTAINS ARCHITECTURE."[7]

SO FAR, WE REACHED THE CONCLUSION THAT THE ARCHITECTURE OF CYBERSPACE HAS ITS OWN URBANISTIC AND PROGRAMMATIC LEVELS. WHAT IS STILL VAGUE IS THE SPATIAL LEVEL. AND HERE, I WILL BE GOING BACK TO THE CYBER SPATIAL QUALITIES LISTED IN THE PREVIOUS LINK, BUT WITH ANOTHER LAYER OF ASSEMBLED ARCHITECTURAL MEANINGS.

- NEW UNIVERSE: WITH NEW OR NO RULES, NEW EXPERIENCES THAT DIFFER FROM THE REAL WORLD ONES BECAUSE OF THE PROCESS OF RE-INSERTING SUBJECTIVITY IN THE SPACE.

- ENTERTAINMENT: WHEREAS CYBERSPACE'S MAIN CAPTIVATING ATMOSPHERE IS ABOUT ENTERTAINMENT AND ENJOYING BROWSING ALONG WITH ATTAINING THE 'HIGHER' GOALS OF EACH WEB SITE. FOR EXAMPLE, AN EDUCATIONAL WEBSITE DIFFERS GREATLY FROM A BOOK BECAUSE IT USES THE MULTIMEDIA TO ENTERTAIN AND TO TEACH. THIS IS WHERE EDUCATION BECOME ENTERTAINMENT; THE EXPERIENCE OF ENTERTAINMENT REGARDLESS OF THE PROGRAM IS ESSENTIAL IN CYBER ARCHITECTURE.

- LIMITLESS: A LIMITLESS SPACE IS A SPACE WITH NO BOUNDARIES, METAPHORICALLY SPEAKING, WITH NO OPAQUE PARTITIONS BUT RATHER TRANSPARENT PARTITIONS, OR EVEN NON-PHYSICAL BOUNDARIES. SPACES CAN BE FORMED

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[7] NOVAK M. "LIQUID ARCHITECTURE IN CYBERSPACE"; IN BENEDICT M. (ED.): CYBERSPACE FIRST STEPS, MIT PRESS, CAMBRIDGE, ENGLAND, 1991, QUOTE P.226

USING LIGHTS AS USED ON STAGES DURING PLAYS WHERE
LIGHTS COULD CREATE AN ACTOR'S OWN SPACE, AS SHOWN
IN THE FOLLOWING FIGURES.

- TIMELESS: TIMELESSNESS IN CYBERSPACE IS IN HOW WE CAN
  MOVE FROM ONE SPACE TO ANOTHER SPACE IN NO TIME.
  THAT COULD MEAN DECREASING THE NEED TO MOVE FROM A
  SPACE TO ANOTHER BY HAVING MULTIPLE FUNCTIONS IN ONE
  SPACE, AND IT CAN ALSO MEAN HAVING MANY PATHS OR
  CONNECTIONS TO GO FROM ONE SPACE TO ANOTHER
  DIRECTLY (SHORTCUTS) WITHOUT THE NECESSITY OF GOING
  THROUGH LONG PATHS, PASSING BY OTHER SPACES TO
  REACH THE DESTINATION.

- NO MATERIALITY: THAT IS SOMEHOW RELATED TO THE
  ASPECT OF LIMITLESS SPACE. IN ADDITION IT CAN MEAN
  HAVING MONOCHROMATIC MATERIALS SINCE BY ELIMINATING
  THE DIVERSITY OF MATERIALS, ONE CAN SAY THERE IS AN

IMPLICATION OF A NEUTRAL NON-MATERIAL SPACE- A SPACE
WHERE MATERIALITY IS FORGOTTEN.

- **DARKNESS:** IT IS A DARK SPACE BUT LIT WITH THE BRIGHT
LATTICES

- **BRIGHT LATTICES:** THEY ARE MANY SMALL TINY LAMPS
ALIGNED TOGETHER LIGHTENING UP THE DARK SPACE

- **COLORLESS:** NO MATERIALITY, LIGHT, DARK, TRANSPARENT
AND LIT.

- **ACCESSIBLE:** SPACE FOR EVERYONE- EASILY ACCESSED
PUBLIC SPACE. IT IS PUBLIC SPACE IN ITS GENERAL
PROGRAM AND ACCESSIBLE BY ALL. THERE ARE ALSO, AS IN
CYBERSPACE, PRIVATE AREAS THAT CANNOT BE ACCESSED
BY THE PUBLIC.

- **SYSTEMATIC PLANNING:** THIS CAN REFER TO A TYPICAL
COMPLETELY ARCHITECTURAL PROCESS IN THE SENSE OF
CONTEXTUAL, PROGRAMMATIC, DESIGN AND CONSTRUCTION
PLANNING AND STRATEGY.

- **COMPLEX, FUNCTIONAL AND YET BEAUTIFUL:** AN
ARCHITECTURE WHICH IS COMPLEX IN ITS CONCEPTION,
FUNCTIONAL IN ITS IMPLEMENTATION AND BEAUTIFUL IN ITS
DETAILING AND DESIGN.

- **NON-PHYSICAL:** THE NON-PHYSICAL SPACE CAN
METAPHORICALLY MEAN A NON-GEOMETRICAL SPACE, THAT
CANNOT BE IDENTIFIED USING THE CONVENTIONAL
CARTESIAN AXES (X, Y, AND Z). GEOMETRICAL SPACE IS THE
SPACE THAT IS CONTROLLED BY FEW POINTS, OR VERTECES
TO CONTROL ITS SHAPE. THAT IS WHY THEY ARE SOMETIMES

CALLED CONTROL POINTS. SINCE CYBERSPACE IS NOT
CONTROLLED AND HAS NO RULES, THE NEW CYBER
ARCHITECTURE SHOULD PERHAPS MOVE AWAY FROM SIMPLE
GEOMETRIC PRIMARY SHAPES.

- ABSTRACT OF INFO: HERE WE CAN ADD THE MISSING LAYER
  IN ARCHITECTURE THAT REVOLVES ABOUT THE SUBJECTIVITY
  FACTOR. ARCHITECTURE SHOULD BE INFLUENCED BY
  SEVERAL FACTORS THAT ARE INFORMATION REGARDING THE
  INTENDED EXPERIENCE OF THE USER USING THAT SPACE.

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○ The effect of information revolution

Architecture is the product of many factors such as, climate, society, and context as well as the era in history in which it is thought about and created. Throughout history we have passed through several revolutions from the invention of the wheel and the plow to the industrial revolution which affected architecture in a most notable way.

The industrial revolution[1] began in England in the 1760s. It brought radical changes in every field and at every level of life all around the world. New industrial processes, new building techniques and new materials such as cast iron, steel, and glass appeared. Those new materials brought with them a new style in architecture, that is often referred to as "modern architecture", within which architects and engineers started to work with structures of previously unimaginable size, form, and function.

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[1] HTTP://LIBRARY.THINKQUEST.ORG/3786/MODERN_ARCHITECTURE.HTML

Seagram

IN THE SECOND HALF OF THE 19TH CENTURY, MANY BECAME
OVERWHELMED BY THE ABILITIES OF INDUSTRY AND HOW IT CAN
BE USED IN CONSTRUCTING ARCHITECTURE, AND NEW, RICH
URBAN FABRICS DEVELOPED AND REGIONS WERE CONNECTED BY
LARGE STRUCTURES SUCH AS CANALS, TUNNELS, BRIDGES, AND
RAILROAD STATIONS.

THE INDUSTRIAL REVOLUTION ALSO EMPHASIZED ANOTHER
LAYER OF THE BUILDING PROCESS; ADVANCEMENTS AND
INNOVATIONS IN THE ELECTRICAL AND MECHANICAL REALM
STARTED TO HAVE A MORE SELF-CONSCIOUS ROLE IN PROVIDING
FOR THE COMFORT OF THE INHABITANTS OF ARCHITECTURE.

AND NOW WE ARE LIVING IN THE ERA OF ANOTHER REVOLUTION,
WHICH IS THE INFORMATION REVOLUTION. IN TERMS OF
ARCHITECTURE, NEW METHODS OF DESIGNING AND NEW STYLES
OF BUILDING ARE ALREADY EVOLVING. ONE VERY OBVIOUS

CAUSE OF THAT IS THE UNIVERSALLY SPREAD USAGE OF
COMPUTERS IN DRAFTING.

NO ONE CAN DENY THAT USING SUCH TOOLS AFFECTED
ARCHITECTURE IN A WAY OR ANOTHER. MANY CRITICIZE USING
COMPUTER DRAFTING AS A DESIGN TOOL. DISAPPROVAL IS
JUSTIFIABLE IN MANY CASES WHERE ARCHITECTURE BECOMES
NOTHING MORE THAN ALIEN COLORFUL EXOTIC FORMS IMPOSING
THEMSELVES ON A LANDSCAPE WHILE INSENSITIVE OF ITS
INTRICACY AND PROFUNDITY; HOWEVER I DO BELIEVE THAT PART
OF WHY WE MISUSE THESE TOOLS IS THAT WE ARE IMPOSING AN
OLD ARCHITECTURAL THINKING- THAT WAS BORN WITH PEN SETS
AND T-SQUARES- ON THESE CYBER MEDIA. EXPLOITING THE FULL
POTENTIAL OF USING NEW TECHNOLOGY AS DESIGN TOOLS MUST
BE PRECEDED WITH A NEW UNDERSTANDING OF ARCHITECTURE
THAT IS UP-TO-DATE WITH THE CONTEMPORARY LIFE STYLE, THE
NEW URBAN LANDSCAPES, THE NEW SOCIETY, THE NEW TIMES....
IN WHAT FOLLOWS, I WILL EXPLORE HOW TECHNOLOGY IS USED
THESE DAYS TO PRODUCE ARCHITECTURE- TO LEARN ABOUT THE
EXPERIMENTATION PROCESSES AND ABOUT WHAT THEY LACK.

○ **Architectural Movements**

The influence of cyberspace in architecture is already being explored, sometimes as a drafting tool, other times, as a design tool that produced a style often called "digital architecture".

■ **Digital Architecture**

Digital architecture is when computers are used as design tools instead of using them as mere drafting tools. In digital architecture, we insert parameters into the computer, and this is how cyberspace can be considered to be functioning as an abstract of data. The computer then takes the data, or the parameters, inserted and processes them to formulate the shape, the layout and gradually the building. Such data could concern site factors like setbacks, circulation, maximum height, and entrances to or exits from the site. Other parameters could include area magnitudes, areas of closed versus open spaces, etc.... When enough data is inputted, the computer generates several forms or structures. Eventually, the architect is the one who chooses a specific feasible alternative. This is an extreme version of digital architecture, which is used very rarely.

Most of the digital architecture is used in a way that is more or less controlled by the architect sitting behind

THE COMPUTER, AND IT IS STILL ALMOST UNTHINKABLE THAT A COMPUTER WILL DESIGN A COMPLETE BUILDING ON ITS OWN.

WITH THE NEW TECHNOLOGY AND THE HELP OF COMPUTERS, ARCHITECTS BECAME LESS LIMITED IN CREATION OF FORM SO ONE CAN SAY THAT THE SUBJECTIVITY FACTOR WILL IS PRESENT IN DIGITAL ARCHITECTURE WHICH COULD BE DESCRIBED AS EXPRESSIONIST ARCHITECTURE. ONE OF THE MOST FAMOUS ARCHITECTS IN THAT FIELD IS FRANK O. GEHRY.
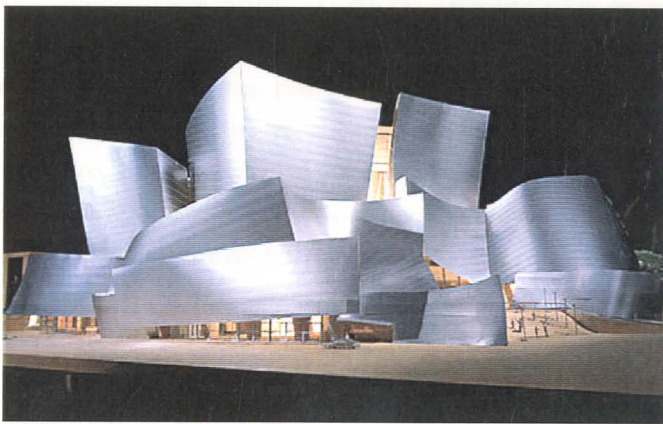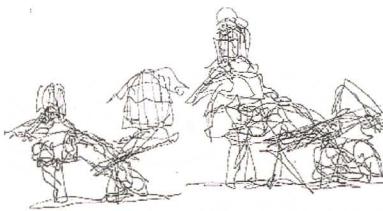
So architectural designs are not just dreamed of anymore nor sketched on paper in a way that cannot be transformed into reality. One can safely say that if a logical building can be drafted on a 3-D visualization program, and no matter what it looks like, if it works on the screen, it can somehow be implemented, or at least we can touch on the screen its physicality and we can feel it gaining a realness factor.

▪ Virtual reality and architecture

Computers are also used in architecture as visualization tools using the virtuality of cyberspace. Using the virtual reality that cyberspace simulates for us is a very effective tool in architectural visualization. This tool allowed architects to predict and avoid many problems that could have appeared in construction phases, since the building as a whole does not have to remain in the architect's mind but can now be inserted in computers and to be fully visualized and tested in their context. This new type of virtual architecture will continue to break the limits of what is possible and to open up the chances for what was thought of as impossible.

This way in producing architecture changes the processes of realization of a project, and can greatly alter it; the actual architecture of reality will be fully

INFLUENCED BY THE VIRTUAL ARCHITECTURE VISUALIZED WITH THE HELP OF CYBER-TECHNOLOGY.

VIRTUAL REALITY CAN HELP NOT ONLY IN FIXING PROBLEMS THAT WERE NOT APPEARING IN TWO DIMENSIONAL DRAWINGS, BUT ALSO IN THE COMPLETION OF DESIGN IN TERMS OF, FOR EXAMPLE, MATERIALS ASSIGNMENT AND CHOICE OF CONSTRUCTION DETAILS, LIGHTING, FURNITURE, COLORS... ETC. THE BUILIDING IS ALMOST COMPLETE BEFORE IT HAS STARTED. THE IMAGES BELOW ARE SOME EXAMPLES OF ARCHITECTURAL VISUALIZATIONS THAT I HAVE DONE WITH THE HELP OF THE THREE DIMENSIONAL VIRTUAL ENVIRONMENT OF CYBERSPACE.

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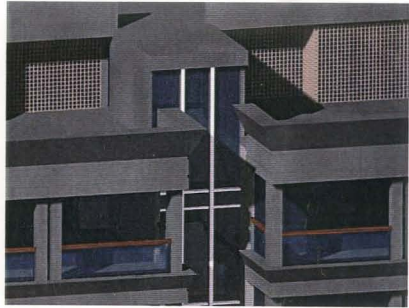
As a conclusion about this chapter, I have to say that cyberspace architecture is neither virtual architecture nor Digital Architecture. Those are perhaps experimental movements toward reaching the cyber – architecture. Cyberspace architecture is partially digital architecture in the sense of using cyberspace technology as a design tool, and partially virtual in terms of using the virtual 3-Dimensional environment in cyberspace to visualize architecture. However, what is missing to fulfill the cyber – arch requirements is the inherent thought out characteristics of cyberspace, especially regarding all the cyber elements like connectivity, programs, and more important, the cyber spatial qualities.

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➤ HACKING:

○ WHAT IS HACKING?

HACKING IS THE ACT OF PENETRATING INTO SOMEONE'S (THE VICTIM) OWN PRIVATE CYBER SPACE, BY CLEARING THE WAY TO GET INTO THE VICTIM'S COMPUTER THROUGH AN UNAUTHORIZED ACCESS. HACKING COULD BE FOR SPYING ON THAT VICTIM AND/OR STEALING SOME OF HIS/HER PRIVATE OR VALUABLE DATA.

ALTHOUGH HACKING HAVE BEEN KNOWN ALWAYS AS AN ILLEGAL ACT OF TERROR, CRIME, OR MAINLY AS SOMETHING NEGATIVE, ON A LARGER SCALE, HACKING HAS BEEN AND STILL IS A POSITIVE FACTOR FOR MANY SOFTWARE AND CULTURAL IMPROVEMENTS.

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HACKING COULD BE AFFECTIVE IN UNCOVERING SECURITY DEFECTIONS IN CYBERSPACE, AND IT IS OFTEN DIRECTLY RESPONSIBLE FOR MANY PROGRESSIVE DEVELOPMENTS OF SOFTWARE. IT IS IN FACT A KIND OF ELITE EDUCATIONAL PRACTICE THAT IS NOT PRACTICED OR STUDIED IN EDUCATIONAL INSTITUTIONS. IT CREATES A "WATCH-DOG" BECAUSE OF ITS POTENTIAL TO BE USED AS A SURVEILLANCE TOOL AND DATA GATHERING LEADING TO ENHANCING THE NATION'S CYBER AND REAL WORLD SECURITY.[1]

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[1] ROSS A. "HACKING AWAY AT THE COUNTER-CULTURE"; IN DAVID BELL AND BARBARA KENNEDY (ED.): THE CYBERCULTURES READER, ROUTLEDGE, LONDON, ENGLAND, 2000, P.255

- BBC Case Study "Microsoft engaging with hackers" [2]

The new operating system by Microsoft, Windows Vista, has been launched to the market this month, January 2007. The main question about this new version or actually the main issue behind releasing it was: "How safe will this brave new world be?"

In order to ensure the security of this new version, Microsoft had to engage with the "criminals" who were used to crack into the security of the previous version of Microsoft Windows (Windows XP) that is still used up till now. The XP version was subjected to many hacking attacks, and because of that, Microsoft has been speaking to anyone they think can help- understandably the hackers.

Some people from the Microsoft team went to Malaysia to try to bring together another helping team under the name of "Asia's biggest gathering of hackers"; the strategy was not to confront the enemy, but to benefit from the enemy's knowledge and ask for their help.

"...and ultimately to help us make our products more secure and to keep our customers safer" Joanna Rutkowska, Security Researcher.

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HTTP://NEWS.BBC.CO.UK/GO/PR/FR/-/2/HI/PROGRAMMES/CLICK_ONLINE/5413792.STM

- CASE STUDY (MATRIX TRILOGY)

GOING BACK TO THE MATRIX TRILOGY MOVIES, HACKING WAS
MAINLY THE ACT THAT INSTIGATED THE WAR BETWEEN THE
TWO WORLDS BECAUSE IT IS THE DIRECT OBVIOUS
PENETRATION FROM THE REAL WORLD TO THE CYBER ONE.
SINCE THE STAR ACTOR 'NEO' WAS ACTUALLY A HACKER, THE
MOVIE WAS REPRESENTING THE REALTY OF HIS (THE HACKER)
LIFE AND MANY OTHER ASPECTS RELATED TO HACKING BOTH
METAPHORICALLY AND LITERALLY.

IN THE BEGINNING OF THE MOVIE, IT WAS SHOWN HOW NEO
HIMSELF WAS GETTING HACKED BY INSERTING A KIND OF
VIRUS INTO HIS BODY, WHICH WAS REPRESENTED IN THE FORM
OF BIOLOGICAL VIRUS BUT WITH HIGH-TECH COMPONENTS
(FIGURE 2). THAT WAS BECAUSE NEO WAS PART OF THE
MATRIX SYSTEM AND LIVED INSIDE THE PROGRAM BEFORE HE
FOUND HIS WAY OUT AND GOT FREED WITH THE HELP OF
MORPHEUS. THIS IS IN FACT ANOTHER KIND OF HACKING THAT
TAKES PLACE IN CYBERSPACE- THE VIRUS ATTACK.

FIGURE 1, 2: LIVING IN THE TWO LIVES SIMULTANEOUSLY

WITHIN THE SAME SCENE, THE HACKER NEO WAS SHOWN
CLEARLY AS LIVING TWO PARALLEL LIVES AT THE SAME TIME.

It is in fact the hackers' way of life since they are living in the real world where their bodies are placed, but most of their mind and physically unconscious life is in cyberspace. This was represented metaphorically by depicting his state when he was living in cyberspace as a state where he was actually "dreaming" but when he wakes up, he finda himself in the real world and yet all the effects he had experienced in his dreams, he is still experiencing in reality (Figure 1).

In parallel, living in the two worlds implies also that death in one world means the death in the other world at the same time. This is because the body cannot live without the mind and vice versa. (Figures 3, 4)

Figure 3, 4: Dying in the two lives simultaneously

Another aspect about hacking that was represented literally in the movies many times is the media that hackers use to get into cyberspace, which is the cables of connectivity, and that was represented in the image of phones and mobile phones (Figures 5, 6).

FIGURE 5, 6: PHONES, THE MEDIA OF CONNECTIVITY

ANOTHER ASPECT OF HACKERS LIFE PRESENTED IN THE MOVIES IS HOW HACKERS CAN BE NORMAL SOFTWARE PROGRAMMERS WORKING IN RESPECTFUL IMPORTANT COMPANIES DURING THE DAY, BUT THEY GET BACK TO THEIR PREFERABLE WORK WHICH IS HACKING, DURING THE NIGHTS, AND OF COURSE THIS IN AN ILLEGAL ACTION BECAUSE THEY EARNING MONEY THROUGH UNAUTHORIZED ACCESSES TO COMPUTERS OF OTHER PEOPLE AND COMPANIES. (FIGURES 7, 8)

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FIGURE 7, 8: PROGRAMMERS (DAY), HACKERS (NIGHT)

IN THE MOVIES, HACKING WAS REPRESENTED SEVERAL TIMES THROUGH BODIES HACKING BODIES, WHILE IN THE MATRIX, PROGRAMS ARE HACKING PROGRAMS. THE TWO WAYS OF HACKING, HOWEVER, WERE IMAGINED IN TWO DIFFERENT WAYS. THE HACKING BY HUMAN BEING INTO A PROGRAM IN CYBERSPACE WAS REPRESENTED AS CRACKING TO SOME

ONE'S BRAIN BY ATTACHING CABLES AND ELECTRICAL DEVICES TO HIS HEAD (FIGURE 9), AND HACKING FROM PROGRAM TO ANOTHER PROGRAM WITHIN CYBERSPACE WAS PRESENTED BY INSERTING THE HACKER'S HAND INTO THE VICTIM'S CHEST (FIGURE 10).

FIGURE 9: HUMAN-TO-CYBER HACKING

FIGURE 10: CYBER-TO-CYBER HACKING

○ **WHO ARE THE HACKERS**

HACKERS ARE HIGHLY PROFICIENT COMPUTER PROGRAMMERS WHO SEEK TO GAIN UNAUTHORIZED ACCESS TO SYSTEMS OFTEN WITHOUT MALICIOUS INTENT, BUT WITH A CURIOSITY TO DISCOVER AND LEARN MORE ABOUT WHAT IS OUT THERE IN OTHERS' CYBERSPACES.

■ **LITERATURE REVIEW**

THE OBVIOUS QUESTION THAT COMES TO ONE'S MIND IS: WHO ARE HACKERS? HACKERS ARE NOT ALIENS OR PEOPLE WHO ARE VERY DIFFERENT FROM US; THEY ARE NORMAL HUMAN BEINGS WHO LIVE AMONG US, EAT LIKE US, AND ALSO HAVE THEIR OWN PERSONAL BAD HABITS LIKE MOST OF US. HOWEVER, THEIR 'BAD' HABITS ARE SIMPLY THEIR WAY OF ENTERTAINING THEMSELVES THROUGH PRACTICING HACKING.

THE TIME WHEN THOSE HACKERS BECOME HACKERS IS USUALLY DURING THEIR YOUTH AGES. THAT AGE FULL OF CURIOSITY AND TENDENCIES TO DISCOVER WHAT IS HIDDEN AND LEARNING ABOUT HOW THINGS WORK AND WHAT THEY ARE MADE OF. THAT YOUTH WAS PRECEDED BY THEIR CHILDHOOD. DURING THEIR CHILDHOOD (FOR A MAJORITY OF THE CURRENT HACKERS, MOST PROBABLY IN 1980s), THEY WERE EXPOSED TO MANY FICTION NOVELS AND CARTOONS ABOUT HEROES AND MYTHS. THEY WERE RAISED IN THE EDGE

BETWEEN FICTION AND REALITY, WISH AND FACT, POSSIBILITY AND PROBABILITY. THAT EDGE MAINLY FORMED FOR THEM THE PATH TO THEIR ADULTHOOD. THROUGH THOSE FICTIONAL STORIES, THEY WERE RAISED TO BE ADVENTUROUS AND CURIOUS ESPECIALLY IN QUESTIONING AND CHALLENGING THE PROHIBITED AND THE UNKNOWN.[3]

HACKERS DURING THEIR YOUTH AND CHILDHOOD TIMES WERE EXPOSED TO THAT NEW MONSTER CALLED TECHNOLOGY THAT ARRIVED THEN. EACH ONE OF THEM HAS HAD THE PLEASURE OF RECEIVING HIS/HER FIRST PERSONAL COMPUTER.

FROM PREVIOUS EXPERIENCE, SINCE I WAS AT SOME POINT IN MY LIFE A HACKER MYSELF, I WILL TRY TO ILLUSTRATE THE WAY THINGS HAPPENED WITH ME. THE BOX I HAVE FOUND UNEXPECTEDLY IN MY PLACE WAS A CLOSED BOX BUT CAPABLE OF DOING MANY OUTSTANDING THINGS. THE FIRST STEPS I TOOK TOWARDS BECOMING A HACKER WERE REPEATEDLY OPENING THAT BOX FIRST AND DISCOVERING WHAT IS INSIDE ITS METAL CASE AND TRYING TO FIGURE OUT HOW IT IS WORKING. THEN, I STARTED TO FIGURE OUT HOW IT HAS BEEN ASSEMBLED AND HOW ITS DIFFERENT HARDWARE WAS CONNECTED. AFTER THOSE STEPS, AND ALONG WITH ALL THE KNOWLEDGE I EARNED BY MYSELF WITH NO ONE TO SUPERVISE OR TO STOP ME, I TOOK A BIG STEP TOWARD LEARNING HOW THE COMPUTER IS CONFIGURED PROGRAMMATICALLY AND HOW TO GET ACCESS TO THE WEB AND TO OTHER COMPUTERS. THE LAST STEP WAS, AND I PREFER TO CALL IT THE TRIAL AND ERROR PHASE, WHERE I

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[3] BENEDICT M. "CYBERSPACE: FIRST STEPS"; IN DAVID BELL AND BARBARA KENNEDY (ED.): THE CYBERCULTURES READER, ROUTLEDGE, LONDON, ENGLAND, 2000, P.32

STARTED TO PLAY WITH THOSE CODES OR CONFIGURATIONS AND TO TRY TO OPEN UP THE PORTS (GATES THAT OPEN AND CLOSE AUTOMATICALLY TO ALLOW DATA TRANSFER) IN MY COMPUTER AND THEN FIGURE OUT HOW TO OPEN SIMILAR PORTS IN OTHERS' COMPUTERS TO GAIN (UNAUTHORIZED) ACCESS TO THEM. THEN THE STORY OF MY BEING A HACKER WAS 'TRAGICALLY' ENDED BY MY GETTING ARRESTED BY THE SAUDI AUTHORITIES BECAUSE OF MY "CRIMES", BUT THANK GOD I WAS TOO YOUNG TO BE PUNISHED, AND ALL I GOT WAS A WARNING. SIMILAR TO NEO IN MATRIX TRILOGY, WHO HAS ANOTHER NAME IN THE REAL WORLD THAT WAS MR. ANDERSON, I HAD MY OWN OTHER NAME ON THE NET OR IN CYBERSPACE, AND IT WAS 'THE KING' AND I ACTUALLY STILL USE IT IN CHATTING ROOMS AND VIRTUAL MEETINGS, OR GATHERING SPACES IN CYBERSPACE.

A SIMILAR CASE HAPPENED WITH ANOTHER HACKER IN THE WEST, BILL WHO WAS FAMOUS AS 'THE CRACKER'. HE ACTUALLY WAS MUCH LESS LUCKY THAN I WAS SINCE HE RECEIVED THREE-YEAR PROBATION IN 1984, AND EVENTUALLY HE VIOLATED IT AND HAD TO FACE A PENALTY OF FIVE-YEAR JAIL SENTENCE. HE TALKED ABOUT HIMSELF SAYING:

"IF YOU ARE WONDERING WHAT I AM LIKE, I CAN TELL YOU THE SAME THINGS I TOLD THE JUDGE IN FEDERAL COURT: ALTHOUGH IT MAY NOT SEEM LIKE IT, I AM PRETTY MUCH A NORMAL AMERICAN TEENAGER. I DON'T DRINK, SMOKE OR TAKE DRUGS. I DON'T STEAL, ASSAULT PEOPLE, OR VANDALIZE PROPERTY (REAL – PHYSICAL). THE ONLY WAY IN WHICH I AM DIFFERENT FROM MOST PEOPLE IS IN MY

FASCINATION WITH THE WAYS AND MEANS OF LEARNING ABOUT COMPUTERS THAT DON'T BELONG TO ME."[4]

SO TO SAY SOME FINAL WORDS ABOUT HACKERS: "THEY ARE TYPICALLY WHITE, *UPPER-MIDDLE-CLASS* ADOLESCENTS WHO HAVE TAKEN OVER THE HOME COMPUTER *(BOUGHT, SUBSIDIZED, OR TOLERATED BY PARENTS IN THE HOPE OF CULTIVATING COMPUTER LITERACY)*. FEW ARE POLITICALLY MOTIVATED ALTHOUGH MANY EXPRESS CONTEMPT FOR THE "BUREAUCRACIES" THAT HAMPER THEIR ELECTRONIC JOURNEYS. NEARLY ALL DEMAND UNFETTERED ACCESS TO INTRICATE AND INTRIGUING COMPUTER NETWORKS. IN THIS, *TEENAGE HACKERS* RESEMBLE AN ALIENATED SHOPPING CULTURE DEPRIVED OF PURCHASING OPPORTUNITIES MORE THAN A TERRORIST NETWORK."[5]

4
  LANDRETH B. : OUT OF THE INNERCIRCLE: THE TRUE STORY OF A COMPUTER INRUDER CAPABLE OF CRACKING THE NATION'S MOST SECURE COMPUTER SYSTEMS, TEMPUS, MICROSOFT, USA, 1989, P.10
5
  HAYES D. : BEHIND THE SILICON CURTAIN: THE SEDUCTION OF WORK IN A LONELY ERA, SOUTH END, BOSTON, USA, 1989, P.93

- **HACKERS SPACE**

HACKERS LIVE IN TWO WORLDS AT THE SAME TIME, THE
CYBERSPACE AND THE REAL SPACE. IN A MUCH
EXAGGERATED SORT OF SPEAKING, THEY ARE MENTALLY
LIVING IN CYBERSPACE WHILE THEIR BODIES ARE IN THE REAL
WORLD, AND THIS IS HOW IT WAS LITERALLY REPRESENTED IN
THE MATRIX TRILOGY MOVIES.

CYBER
SPACE

HACKERS
SPACE

REAL
SPACE
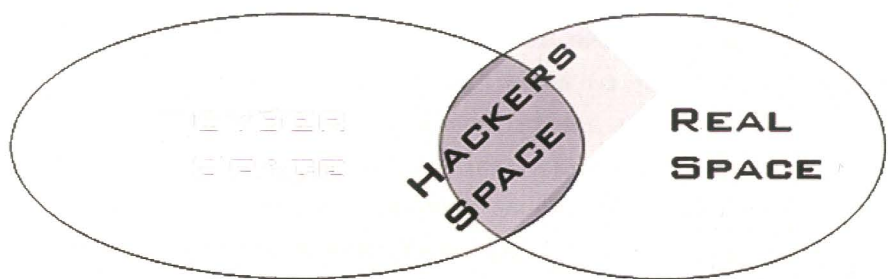
▪ Hackers Entertainment

The process of penetrating into others privacy is the always fun. Thus, as it is based on a play-like quality that makes use of digital technology, hacking somehow constitutes a new form of social activity that mixes complex expertise with entertainment.

On an architectural level, one idea that emerged from the importance of this aspect of entertainment to hackers, is that since they are originally software programmers, it is necessary to sustain a rather joyful, colorful space around them, filled with means of entertaining. This kind of entertainment might in fact be a need for them, because spending hours in programming or figuring out ways to perform hacking could lead to severe psychological and even mental problems. Such jobs, or more accurately, life styles require maintained intensive mental energy and concentration. A best example of this idea is implemented in the Google headquarters,[6] where programmers' space is filled with games, sport facilities, toys and bright colors which along with a lot of natural light make the overall space a dynamic comfortable space. Perhaps mental energy can be regenerated from the energy of the space around?

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[6] WWW.GOOGLE.COM
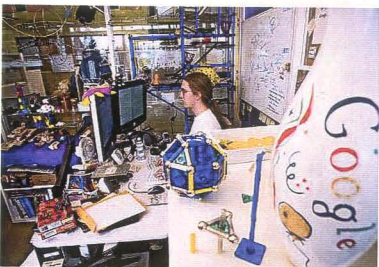
○ **PROGRAMS HACKING PROGRAMS IN CYBERSPACE**

▪ **WHAT IS THE ORIGINAL MEANING OF A VIRUS?**

"COMPUTER VIRUSES ARE SOFTWARE PROGRAMS THAT ARE DELIBERATELY DESIGNED TO INTERFERE WITH COMPUTER OPERATION, RECORD, CORRUPT, OR DELETE DATA, OR SPREAD THEMSELVES TO OTHER COMPUTERS AND THROUGHOUT THE INTERNET."[7]
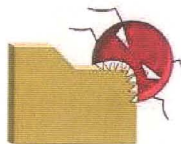
SOME TYPES OF VIRUSES CAN SPREAD THEMSELVES BY ATTACHING THEMSELVES TO DATA IN E-MAILING APPLICATIONS AND TO SELF-REPLICATE ON OTHER VICTIMS' COMPUTERS. OTHER TYPES OF VIRUSES HAVE BEEN CREATED JUST AS A MILDLY TEASING SOFTWARE USED TO ANNOY THE USER WITH MANY POP-UPS APPEARING FAST ONE AFTER ANOTHER, OR BY REDIRECTING HIM/HER FROM THE INTENDED WEBSITE TO ANOTHER ONE IN ORDER TO FORCE HIM/HER TO VIEW A PRODUCT AS AN ILLEGAL OBLIGATORY FORM OF ADVERTISING.

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[7] HTTP://WWW.MICROSOFT.COM/ATHOME/SECURITY/VIRUSES/ INTRO_VIRUSES_WHAT.MSPX

- **Parasitic programs**

Parasitic programs in cyberspace are those which are installed to add extra features for already installed software. They change and add to the code that generates that installed software.

Other parasitic programs are used as an enhancement or corrections to fix errors or problems in the already installed software after the publisher or the company of the installed program discovers those errors through its in-house team or through users reporting those issues after the release of that software to the market.

Parasitic programs, are completely useless on their own and cannot function nor execute unless they are attached to an already existing program. Sometimes parasitic programs are called Plug-ins and Patches.

➤ Hacking Architecture:

○ Spaces hacking spaces

We can apply the hacking logic to the architectural language. For instance, we can have spaces hacking spaces. This hacking logic can be applied through functions penetrating spaces where they are not meant to be; like for example a bedroom can have some cooking appliances that can be used for preparing food there. In this simplistic example, the kitchen hacked into the bed room, since cooking appliances have penetrated into the bedroom space.

Another way of hacking could translate into the ability to experience the qualities of one space within another. For instance, in a case where a bakery shop could exist next to a night club, the mechanical shafts, which pump the baking smells out, could be plugged to the night club. So the users at the night club who are dancing or drinking will have the experience of the bakery along with the other experiences in the night club atmosphere. The extent of this physical interference can range from olfactory to permeation at a much larger scale.

Finally, another way of 'spaces hacking spaces' I thought about is when spaces are allowed to hack into other spaces by having visual access into them. This is mainly a game of materials and the choice

BETWEEN USING OPAQUE OR TRANSPARENT MATERIAL. LIKE
FOR EXAMPLE, IN THE MOST PRIVATE SPACES, LIKE TOILETS,
WE CAN USE A MATERIAL THAT ALLOWS FOR ONE WAY OF
VISUAL ACCESS. THE PERSON INSIDE CAN SEE EVERYTHING
OUTSIDE BUT NO ONE WILL BE ABLE TO SEE FROM OUTSIDE IN.
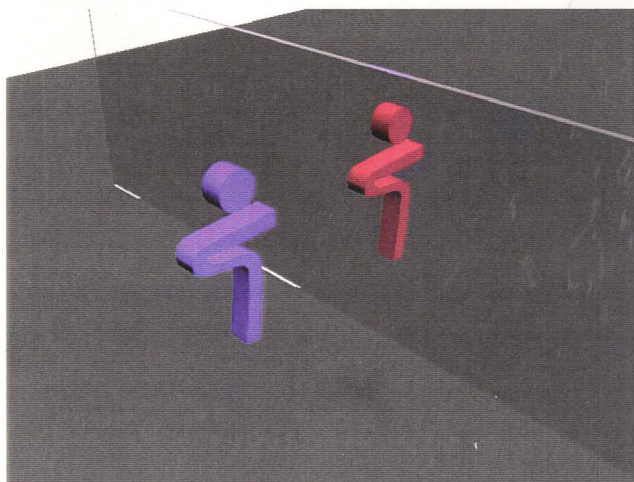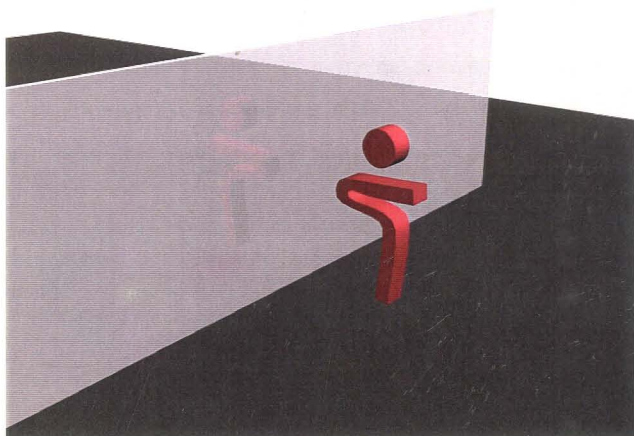
IN THIS KIND OF HACKING, ARCHITECTURAL PROGRAMS HACK OTHER PROGRAMS WITH A PURPOSE OF ACQUIRING A MISSING NEED OR TO HAVE A KIND OF 'SPATIAL UPDATING.'

LIKE FOR EXAMPLE, THERE IS A CASE STUDY OF PROVIDING THE HOMELESS WITH PARASITE SHELTERS[1].

THOSE PARASITE SHELTERS WERE SPREAD ALL AROUND BALTIMORE, BOSTON, AND NEW YORK STREETS. THEY ARE DESIGNED BY MICHAEL RAKOWITZ (1998-ONGOING).

THE SHELTERS FUNCTION ON PURE PRACTICAL BASES. "THEY ENABLE SURVIVAL ON THE CITY STREETS BY SIPHONING THE

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[1] HTTP://WWW.NYFA.ORG/LEVEL3.ASP?ID=432&FID=4&SID=8

WARM AIR BEING EXPELLED BY A BUILDING'S HEATING SYSTEM INTO THE DOUBLE MEMBRANE INFLATABLE. THE HOMELESS NEVER COME INTO DIRECT CONTACT WITH THE POTENTIALLY HARMFUL EXHAUST AIR, AS IT CIRCULATES THROUGH THE TWO LAYERS OF POLYETHYLENE AND THE SHELTER IS HEATED THROUGH CONDUCTION."

SO IN THAT EXAMPLE, THE NEED FOR HEATING OF THE HOMELESS IS FULFILLED BY SUCH PARASITIC SYSTEMS THAT MAKE USE OR RECYCLE THE PUMPED OUT WARM AIR.

➢ Conclusion

Throughout my thesis, I tried to gather information and arrange them into logical files in order to be able to process them. I tried to understand the precedents for cyber architecture and formulate understandings of cyberspace and its relation to architecture. I tried to extract terminologies that voice out conjoint spatial qualities. It is now obvious why the development of cyberspace and its infiltration into our lives has produced new architectural trends that architects are now forced to build on, or at least exploit their potential. I also aimed at illustrating the personality of the hackers, a user group that architecture has not yet been designed for. In the next link, I will ground my cyber-findings upon a physical program and a real site in Lebanon as a first step towards putting into operation the findings of this thesis and uncovering the emergence of Cyber Architecture.

➤ SUPERIMPOSITION OF CYBERSPACE AND HACKING IN LEBANON (MY PROJECT)

IN MY PROJECT, I WILL BE DEALING WITH THE REAL WORLD IN ITS THREE MAJOR ARCHITECTURAL LEVELS THAT ARE FULLY RELATED TO THE CYBERSPACE, AND ONE OF WHICH, THE CYBER SPATIAL QUALITIES, WHICH IS THE THIRD LEVEL, WAS DESCRIBED FULLY IN PREVIOUS HYPERLINKS. I WILL BE SUPERIMPOSING MY CYBER-ARCH IN THE URBAN AND VILLAGE FABRIC OF LEBANON ACCORDING TO THE RULES AND LOGICS OF CYBERSPACE.

THAT SUPERIMPOSITION AIMS TO FORM THE NETWORK, AND THEN TO REACH OUT TO A SERVER.

○ URBAN LEVEL (CONNECTIVITY)

AS A START, I HAVE SUPERIMPOSED THE TWO TYPES OF NETWORKS ON THE MAP OF LEBANON TO INVESTIGATE WHICH WOULD FIT BEST. THE FORMATION OF THOSE NETWORKS FOLLOWED THE LOGICS OF CONFIGURATIONS OF THE TWO TYPES OF CYBER NETWORKS THAT WERE DESCRIBED IN THE FIRST HYPERLINK "CYBERSPACE" UNDER THE 'CONNECTIVITY' SECTION.

THE SUPERIMPOSITION IS MADE THROUGH FIRST LOCATING THE NODES IN LEBANON (FIGURE 1), WHICH ARE THE HACKED PROGRAMS THAT WILL BE EXPLAINED THOROUGHLY LATER IN THIS HYPERLINK.
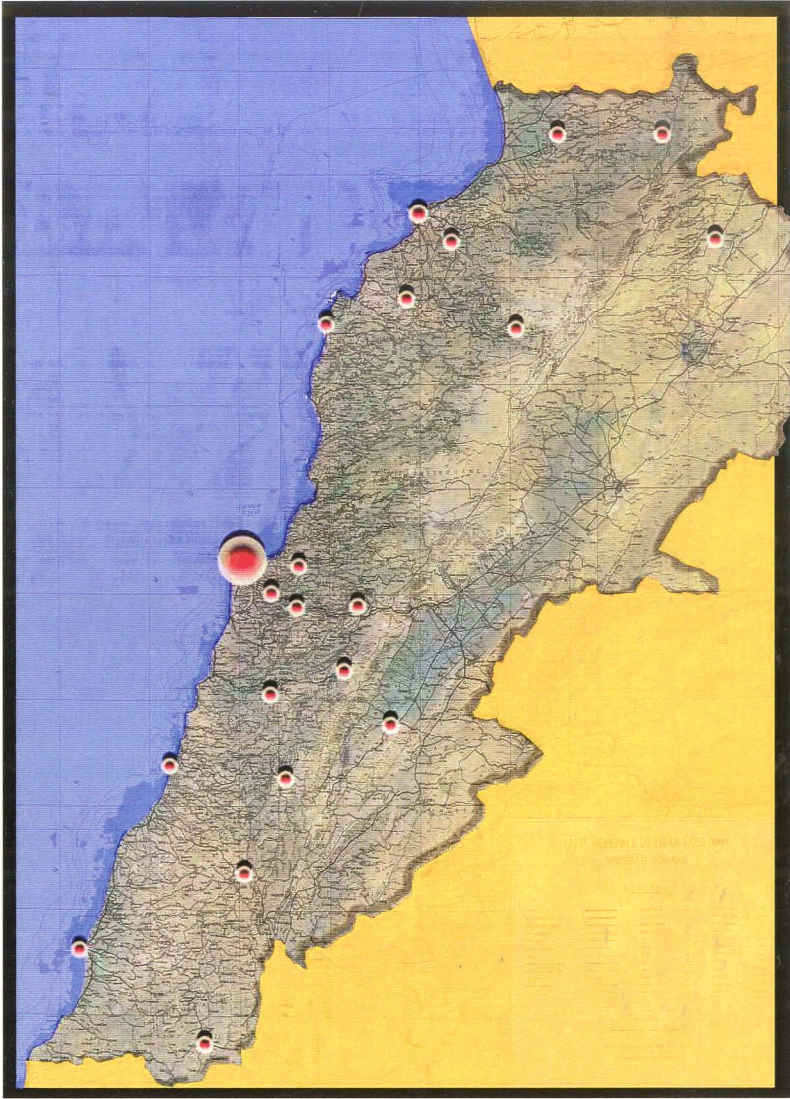
FIGURE 1: THE NODES LOCATED IN LEBANON

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AFTER THAT COMES THE FIRST TRIAL OF INSTALLING THE
FIRST TYPE OF NETWORKS, **THE PEER-TO-PEER NETWORK.**
(FIGURE 2)
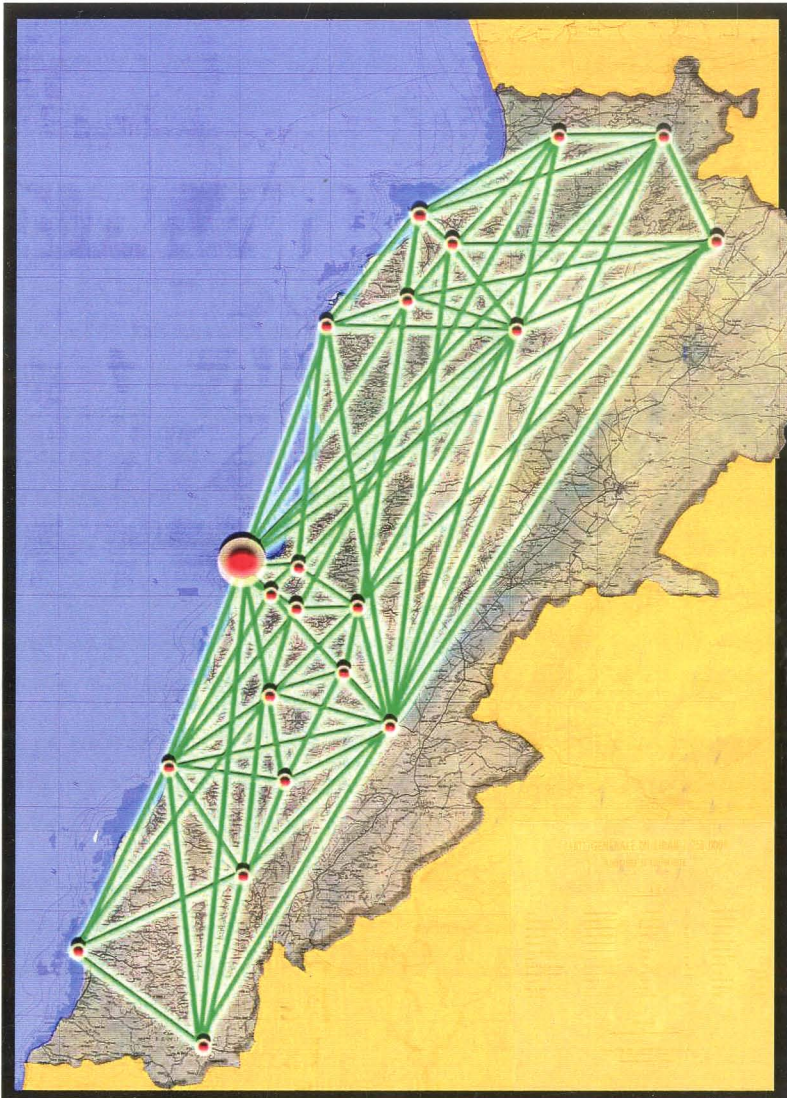
FIGURE 2: THE NODES CONNECTED IN THE FORMAT OF PEER-TO-PEER

In this kind of network, all the 'hacked programs' are connected to each other. This kind of networking will be making all the programs equal to each other in terms of functional capacities. According to the cyber logic of this network, all the nodes will have their own information contained within, and each one can or will function on its own without regard to their connectivity.

In such a network, each node has its own storage capacity of data, but with no backup system. So if data is lost from a node, they cannot be retrieved. All those deficiencies lead us to the need of having a secure centralized system that will have all the data backed up and secured, like what happens in the case of Client-Server Networks.

In **Client-Server Networks**, there is a major element installed, which distinguishes this type of network from the previous network: **The Server**

This server, its vision and its programmatic criteria will be explained comprehensively in the following hyperlink.

Because of all the advantages of this type of network, I have chosen to implement it in order to acquire connectivity across Lebanon. (Figure 3)
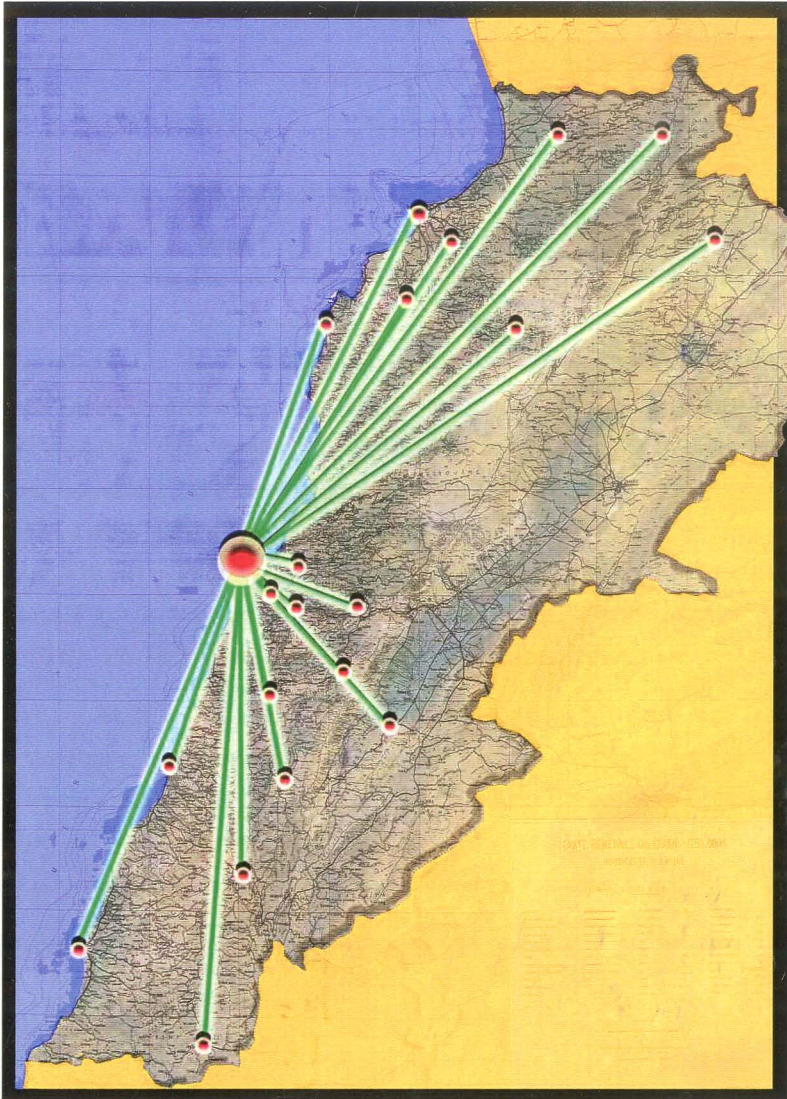
Figure 3: the nodes connected in the format of Client-Server

- ○ **PROGRAM LEVEL (PARASITIC VIRUSES)**

  - ▪ **THE HACKED PROGRAMS**

THE HACKED PROGRAMS ARE LOCATED IN THE NODES SHOWN PREVIOUSLY (FIGURE 1). THOSE PROGRAMS ARE THE PUBLIC LIBRARIES FOUND IN EACH NODE. I HAVE CHOSEN THIS SPECIFIC TYPE OF PROGRAM BECAUSE IT IS DIRECTLY RELATED TO INFORMATION, SPREAD ENOUGH TO FORM THE NETWORK, AND LIKE CYBERSPACE, IT IS A PUBLIC SPACE ACCESSIBLE BY EVERYONE. HOWEVER, AS THEY ARE NOW, THESE PROGRAMS ARE IN NEED FOR CONNECTIVITY TO BE ABLE TO SHARE DATA WITH EACH OTHER, AND THEY ALSO VARY IN WHAT PROGRAMS ARE MISSING FOR THEM TO CONTAIN THE MINIMAL REQUIRED NEEDS OF A PUBLIC LIBRARY. THEREFORE, THE NEED OF "THE VIRUS" TO HACK THOSE LIBRARIES BECOMES CLEAR.

THE PUBLIC LIBRARIES DISTRIBUTED AROUND LEBANON HAVE A VARIETY OF SCALES, MISSING NEEDS AND FUNCTIONS. THOSE LIBRARIES COULD BE MUNICIPAL LIBRARIES, LIBRARIES RUN BY NGOS, OR PART OF COMMUNITY OR CULTURAL CENTERS. THE FOLLOWING ARE SOME EXAMPLES.

FIRST, SOME OF THE MUNICIPAL LIBRARIES (FIGURES 4, 5, 6)
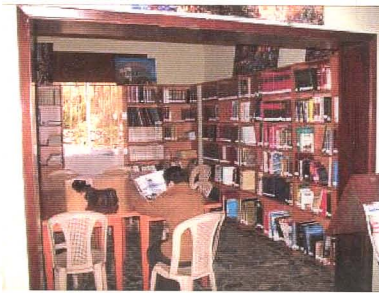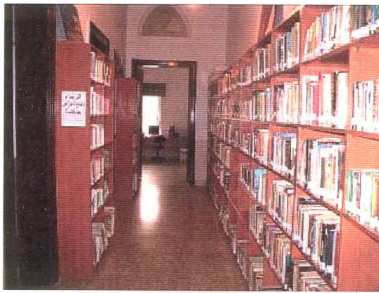
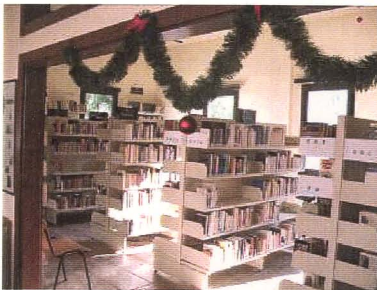FIGURE 4: BATROUN MUNICIPAL PUBLIC LIBRARY
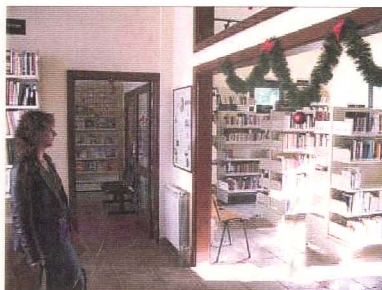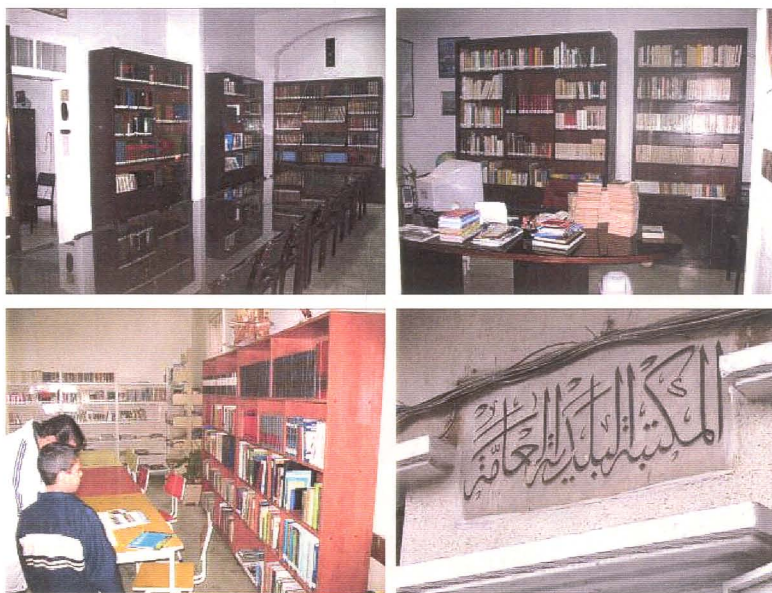
FIGURE 5: JEZZEIN MUNICIPAL PUBLIC LIBRARY

Figure 6: Tripoli municipal public library

Second, the public libraries on the following page are run by NGOs (Figures 7, 8)
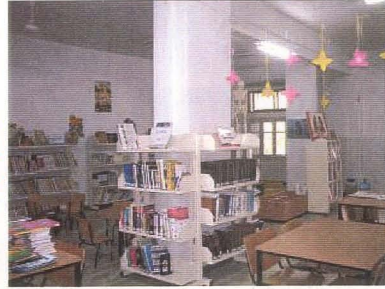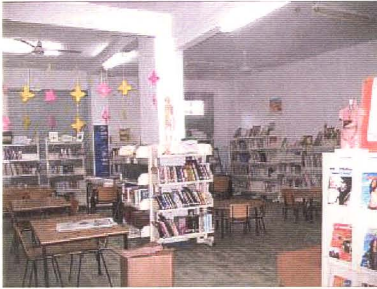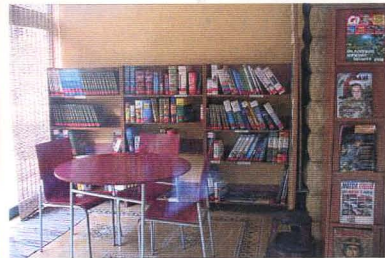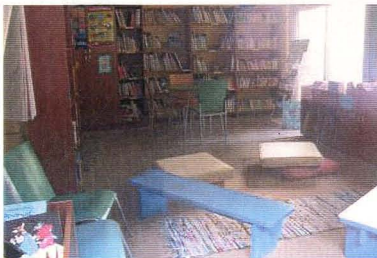
Figure 7: Barja public library, by CLAC

Figure 8: Rmeil public library, by SABIL

THIRD, PUBLIC LIBRARIES AS PART OF CULTURAL OR COMMUNITY CENTERS (FIGURE 9)
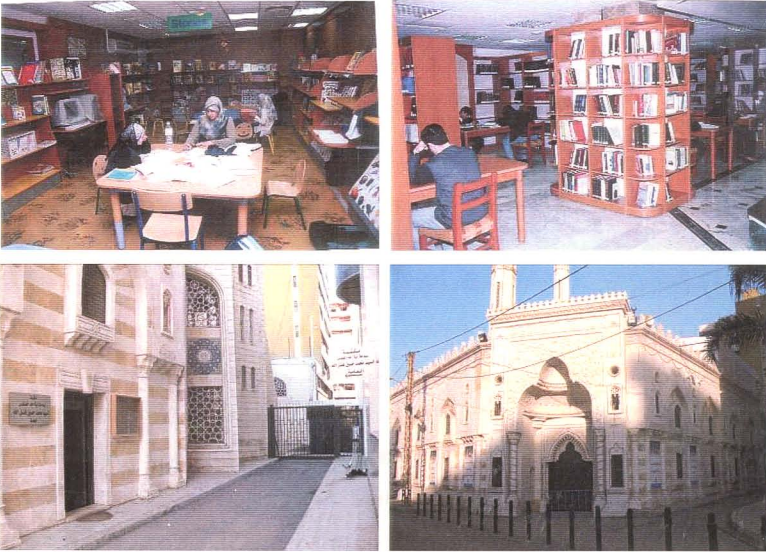

FIGURE 9: HARET HREIK PUBLIC LIBRARY, PART OF AL HASANEIN RELIGIOUS CULTURAL CENTER

ARCHITECTURALLY SPEAKING, THOSE LIBRARIES VARY IN STRUCTURE AND IN DESIGN. THEY COULD BE FREE-STANDING LIBRARIES, FREE-STANDING SMALL STRUCTURES, ONE OR MORE FLOORS IN A BUILDING OR PARTS OF MULTI-FUNCTIONAL FACILITIES.

- ### WHAT IS "THE VIRUS"?

AS SHOWN BEFORE, MOST OF THE LIBRARIES ARE MISSING
NECESSARY PROGRAMS TO ACHIEVE THE MINIMAL
REQUIREMENTS OF TYPICAL PUBLIC LIBRARIES.

"THE VIRUS" IS AN EXTRA STRUCTURE TO HOUSE THE
MISSING PROGRAMS MISSING FROM EACH LIBRARY AND TO
ADD TO IT THE MEDIUM OF CONNECTIVITY. THOSE VIRUSES
WILL BE ATTACHED AS AN ENHANCEMENT TO THE LIBRARIES,
AND AT THE SAME TIME, THEY WILL HOUSE FUNCTIONS THAT
EXIST ORIGINALLY IN THE LIBRARY. THAT IS WHY THEY ARE
CALLED "THE PARASITIC VIRUSES" SINCE THEY ARE
PARASITES AND VIRUSES AT THE SAME TIME ACCORDING TO
THE LOGICS OF CYBERSPACE EXPLAINED PREVIOUSLY.

SINCE THE VIRUSES ARE ADDITIONS AND ENHANCEMENTS,
THEY DIFFER IN VOLUME, FORM, AND FUNCTION IN EACH
LIBRARY. THE BASIC PROGRAMS OF "THE VIRUS" (THE
PARASITIC PROGRAMS) ARE: A DIGITAL LIBRARY, A TECHNICAL
ROOM AND A SYSTEM ADMINISTRATION. EACH VIRUS SHOULD
CONTAIN THESE PROGRAMS AT MINIMUM. THEN THE VIRUS CAN
ACCOMMODATE WHATEVER OTHER MISSING PROGRAMS FROM
THE HACKED LIBRARY.

THE TYPICAL ARCHITECTURAL PROGRAM FOR A PUBLIC
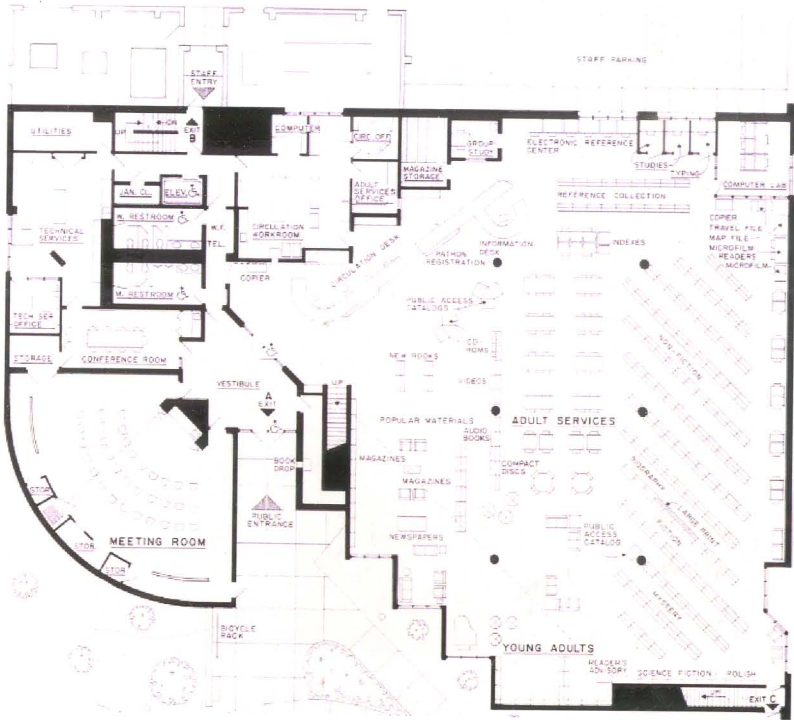LIBRARY, OR ITS THE PRIMARY NEEDS, IS AS FOLLOWS:

Figure 10: plan of Roselle Public Library

- Reading Space

- Stacks

- Administration

- Children's section

- Flexible Space

So each virus's program = (the parasitic programs) + (the missing primary needs)

As an example of "the virus" attack on a public library, I have graphically attempted to victimize the Baakline public library.

This library contains already the primary needs. So what is missing are the parasitic programs. Because of that, Baakline library is hacked by the smallest virus in terms of volume.

According to the logic of viruses' attacks in cyberspace, at first, the virus arrives to the victim in a very imposing, easily recognizable form (if there is no anti-virus installed).

After that, the virus starts to look for the best and most comfortable place to settle in or actually to be attached to. It will be testing and affecting all the system in the beginning.

AFTER IT SETTLES DOWN AND FINDS AN EASY TARGETED LOCATION TO GET ATTACHED TO, IT STARTS TO REFORM IN A WAY TO CAMOUFLAGE ITSELF OR TO DISSOLVE ITSELF WITHIN ITS VICTIM, SO IT WILL SLOWLY BECOME HARDLY NOTICEABLE.

➢ **THE SOURCE** (THE SERVER, THE CENTRE, THE CYBER CULTURAL CENTER)

○ **THE PURPOSE OF THE SOURCE**

THE SOURCE IS A PUBLIC FACILITY THAT WILL CONTAIN THE SECURED DATA OF ALL THE LIBRARIES DISTRIBUTED IN LEBANON. THE SOURCE (SERVER) IS THE ADMINISTRATIVE NODE (CLIENT) OF ALL THE OTHER NODES. FOR ALL THE DATA TO BE TRANSFERRED FROM A NODE TO ANOTHER, THEY SHOULD PASS THROUGH THAT SERVER. IN THIS WAY, THE SECURITY OF THE DATA WILL BE APPLIED THROUGH SURVEILLANCE AND CENTRALIZATION.

IT WILL ALSO INCLUDE THE TYPE OF HACKING THAT CELEBRATES ENTERTAINMENT THROUGH PENETRATION TO OTHER'S PRIVATE SPACES (REAL & CYBER) AND OTHER KINDS OF ENTERTAINMENT NEEDED BY SOFTWARE PROGRAMMERS AS MENTIONED IN PREVIOUS HYPERLINKS.

THE CYBER CULTURAL CENTER WILL BE MAINLY DESIGNED ACCORDING TO THE RULES OF CYBERSPACE, THE CYBER SPATIAL QUALITIES, AND TO THE HACKING LOGIC IN CYBERSPACE. BY THEN IT WILL BE A 3D PHYSICAL REAL REPRESENTATION OF CYBERSPACE WHERE THE USERS (THE BITS) WITH BE EXPERIENCING THE CYBER ENVIRONMENT AS THEY ARE DISSEMINATED INTO ITS VARIOUS DYNAMIC SPACES.

○ **THE ARCHITECTURAL PROGRAM**

- **THE PUBLIC LIBRARY,** THAT WILL CONTAIN BOTH THE PRIMARY NEEDS FOR A PUBLIC LIBRARY AND THE PARASITIC PROGRAMS

- **MAINFRAME AREA** / FLEXIBLE SPACE

- **THEATRE** / AUDITORIUM

- **MEETING SPACES**

- **CAFETERIA**

- **NETWORKING** AND **INTERNET** CAFÉS

- **CYBER SERVICES AREA**

○ **The Users**

My server project will be a Facility for **hackers**, who will be the administrators of that center, according to their needs and for them to be able to provide legal practices to serve the public in their very specific telecommunications problems and needs; and to help in strengthening the nation cyber security and protecting its archive of digital information.
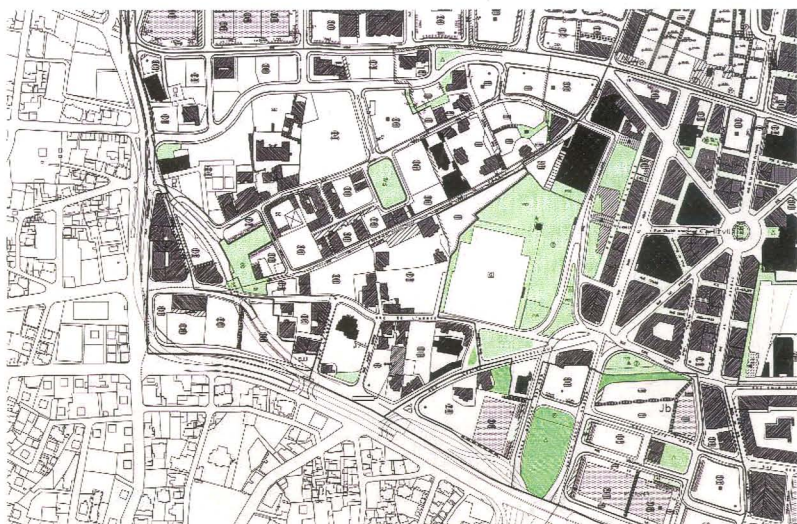
At the same time, the users will be an additional layer of connectivity among the nodes. Since the data in this server will be kept digitally, the user will be able to get any information needed from any book or other medium from any other library (no distance, timeless, everywhere). However, for that user to get the whole book, he/she will have to get it from its original location. Especially since the data (books) found in each library are different.

○   **THE CRITERIA OF THE SITE**

SINCE THE SERVER IS A CENTRAL UNIT OF EACH NETWORK, IT
NEEDS TO BE PLACED IN A SECURE AREA, THAT IS EASILY
ACCESSIBLE BY THE PUBLIC; THE SITE HAS TO BE
ADMINISTRATIVE, CENTRAL, AND EASILY ACCESSED. ALSO IT
SHOULD BE A TOPOGRAPHICALLY DYNAMIC SITE, SINCE
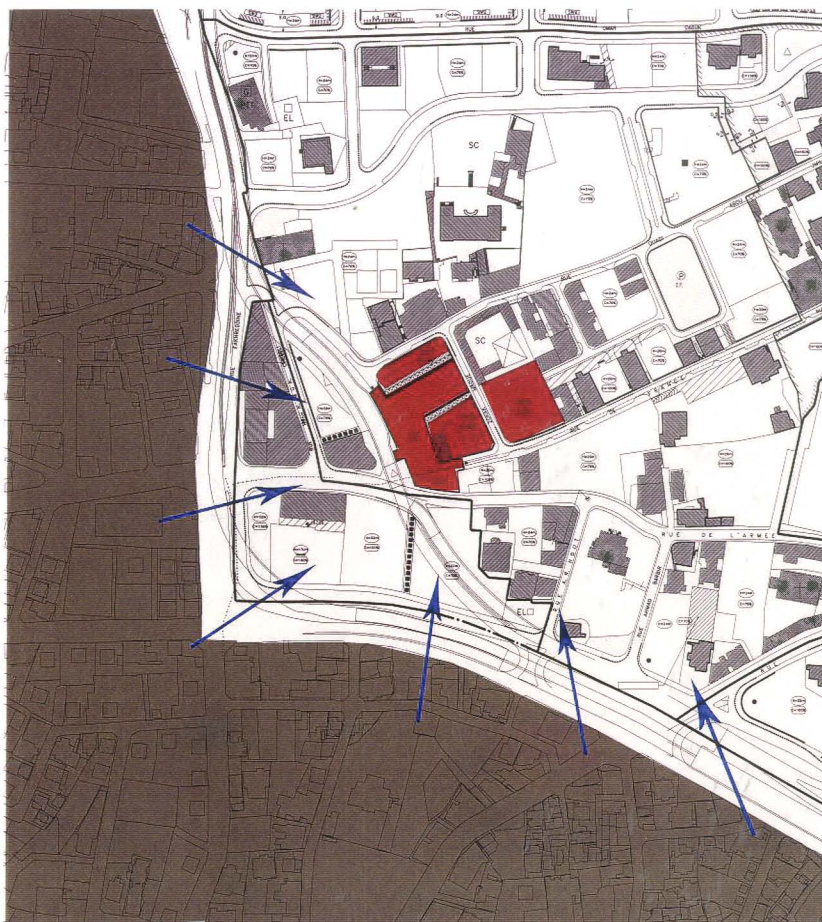CYBERSPACE CANNOT BE ONE OR TWO DIMENSIONAL.

ACCORDING TO THOSE CRITERIA, I HAVE CHOSEN TO
EXPERIMENT WITH A SITE IN BEIRUT CENTRAL DISTRICT, AND
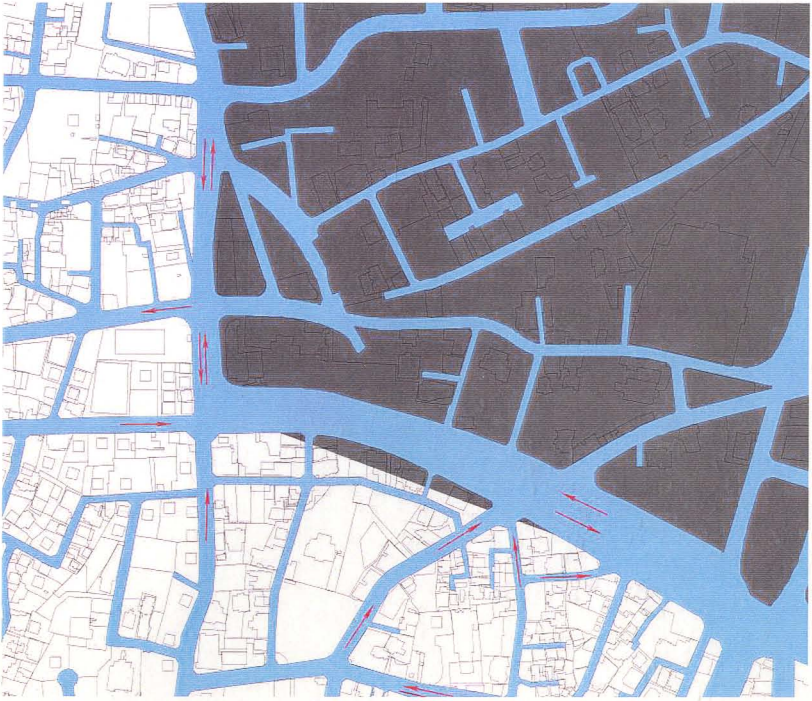IN WADI ABU JMIL AREA SPECIFICALLY.

WADI ABOU JMIL

ACCESSIBILITY FOR THE PUBLIC

WADI ABOU JMEEL, ZQAQ-EL-BLAT, SPEIRS LAND USE MAP

LEGEND

- SCHOOLS
- RELIGIOUS BUILDINGS
- PUBLIC SPACES
- COMMERCIAL, OFFICES
- RESIDENTIAL

Serail

Rue President Fouad Chehab

Pharoan Castle

Ecole Al-Ahlia

Parking Zkak-el-Blat

Pen donnat des soeurs de St. Joseph de L'apparition.

Mediteranean Bank

Future T.V.

Future T.V.

General barbar

Transportation analysis

... Will be followed by more analysis, program on site, and the Server complete design next semester hopefully...

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