ARCHITECTURE OF DE TENSION

FYP 1 - Fall 2019
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CARL YAMMINE
THE X-STREAMLINE

by

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INTRODUCTION

Crime is inevitable in a society, trying to stop it is futile. What we can change is how we react to crimes and how we punish them. That is turn has the potential to affect crime rates positively.

In the thesis, I am thoroughly rethinking the concept of Punishment in our society and the purpose of a prison, its position, program, typology and architectural language.

what is punishment?
how has it changed through history?
why do we punish?
what is justice?

what is the purpose of a prison?
where should it be placed?
what programs to add to a prison?
what typology to adopt?
what is the role of the architectural language?
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Questionning the use of detention centers in a society.

Such a typology is very relevant because we live in a society and crime is inevitably going to take place.

How do we choose to react to such acts makes all the difference.

Can crime even be stopped? If people’s nature is evil, and punishment doesn’t reduce crime.

How to best deal with it?
According to the Belgian writer Marguerite Yourcenar, the sixteen prints that the Venetian artist created between 1745 and 1750 represent the “negation of time, incoherence of space, suggested levitation, intoxication of the impossible reconciled or transcended”.

They have the same quality of dreams. Or, rather, of nightmares. Piranesi revolutionized the stylistic canons for the representation of prisons – an iron cage, or a cell surrounded by massive bars – and expressed the deep angst that stems from seeing life as an unstoppable, eternal return of pain and evil.
crime in culture
the idea of punishment has always been present but the method of punishment has changed throughout history.

Crucifixion, burning, breaking wheel, flogging, quartering.

Punishment used to be public, violent and focused physical torture and pain.

Prison used to be temporary until the actual punishment could be carried out.

Capital punishment is inhumane.
Prisons are failing. Jeremy Bentham’s Panopticon

a circular prison designed to keep all the prisoners in watch by one guard. the prisoners won’t know whether they are being watched or not which will keep them in check.

Punishment became private and involved mental pain. However, crime never stopped, recidivism rates are high, and prisoners are leaving prisons worse than they are going in.

Rehabilitation as a form of punishment

It seems that systems that are more relaxed are the ones that work best but that the most expensive too. Also, that does not mean we should copy their system or that it would universally work. In fact, their culture is very different.
why punishment?

Deterrance: the action of discouraging an action through instilling fear of the consequences

Incapacitation: prevent criminals from committing crimes by physically detaining them

Retribution: punishment inflicted on someone as vengeance for a criminal act

basically, we want Justice
Plato’s The Republic

Plato argues that justice is a **social contract** that keep people from hurting each other. If there was no justice and people were not punished for their wrongdoing, you wouldn’t feel safe walking on the streets.

He also demonstrates that people only value justice and morality for its ability to make them look good and when their actions can be scrutinized. So if person was invisible (no one can see him), had no consequences for his actions, its only normal that he would act like a fool. That is just how humans are.

punishment is necessary
Yes & No. No, the penal system is not really failing, in fact it’s working as expected and is fulfilling its role, which is to protect a society from wrongdoers.

Where it is failing is in its ability to prevent crime.

What if punishment and prison are not supposed to prevent crime? What if they exist just to filter a society and protect the ruling class.
Philosopher Michel Foucault argues that the penal system (law, courts, police, surveillance) exists to protect the power of the ruling class and not to prevent crime.

The function of the penal system is to recycle “waste product” (criminals, i.e. the ones not useful to the ruling class) into something useful or profitable.

This is why you see being lenient with job companies, because job creators are useful to the ruling class, but individuals are less useful. The penal system prioritizes certain types of crime.

Panopticon is a set of principles Bentham thought you could build panoptic schools, panoptic hospitals, panoptic mental wards... And even make a panoptic country.
punishment is necessary but prisons are failing

rehabilitation restoring someone to normal life through training and therapy after imprisonment, addiction, or illness

“A society should be judged not by how it treats its outstanding citizens but by how it treats its criminals.”
— Fyodor Dostoyevsky

detainment is not inherently a bad concept, it all depends on how you treat inmates

“Treat people like dirt and they will be dirt. Treat them like human beings and they will act like human beings.”

by making them more humane
Dostoevsky’s Crime and Punishment

Crime and Punishment focuses on the mental anguish and moral dilemmas of Rodion Raskolnikov, an impoverished ex-student in Saint Petersburg who formulates a plan to kill an unscrupulous pawnbroker for her money.

Before the killing, Raskolnikov believes that with the money he could liberate himself from poverty and go on to perform great deeds.

However, once it is done he finds himself racked with confusion, paranoia, and disgust for what he has done. His ethical justifications disintegrate completely as he struggles with guilt and horror and confronts the real-world moral consequences of his deed.
a **psychopath** feels no empathy or remorse towards his actions.

not all psychopaths are criminals.

a psychopath who is also a criminal is the most dangerous

25% of prisoners are psychopaths

"Ted Bundy is a sadistic sociopath who took pleasure from another human's pain and the control he had over his victims, to the point of death, and even after."

"I don't feel **guilty** for anything. I feel **sorry** for people who feel guilt."

- Ted Bundy
Gen Urobuchi’s Psycho-pass

The series takes place in the near future, when it is possible to instantaneously measure and quantify a person's state of mind, personality and probability of committing a crime.

This information is recorded and processed, and the term "Psycho-Pass" in the anime's title refers to a standard used to measure an individual's being.

When their “Crime Coefficient” index becomes too high, they are pursued and apprehended by police officers to maintain order in their seemingly utopian society.
felonies, serious crimes such as murder, robbery, rape and kidnaping, carries a year or more in state prison

misdemeanors, less serious crimes such as shoplifting, DUI (driving under the influence of alcohol or other drugs), usually carries a fine and jail sentence of less than a year

juveniles, individuals under the age of 18 who committed crimes

mentally-ill, Law-breakers who are deemed to be mentally unfit are sent to psychiatric prisons that are designed like hospitals

1 or more years in a HIGH SECURITY PRISON

less than 1 year in a MINIMUM SECURITY PRISON

JUVENILE PRISON

PSYCHIATRIC PRISON
Tsugumi Ohba’s Death Note

The plot of the series primarily revolves around high school student Light Yagami, who decides to rid the world of evil and crime with the help of a supernatural notebook called a Death Note.

He does that by writing the names of wanted criminals and outlaws and playing the role of God somehow.

He thinks he is doing the world a favor, not knowing that he himself has become a criminal in some way.
Punishment is necessary because Justice

Prisons (which is how we punish) are failing

Rehabilitation centers are too expensive

We can reform prisons by being more humane

Most criminals are reformable

Depending on the crime and the age of the offender, create a punishment

Keeping some ideas but reforming others

In order to create de-tension centers that work
CASE STUDIES
The level of harshness and the purpose of prisons can vary.
detention rehabilitation correction
Alcatraz Island, U.S. Army, 1847 (ofs)
San Francisco Bay, USA

The most famous prison in the world

Alcatraz or “Rock” is located on a small island in the middle of the San Francisco Bay. It served as a federal prison till 1963 and no prisoner managed to escape from Alcatraz. Today Alcatraz is open for tourists.
Storstrøm Prison / C.F. Møller, 2017
Storstrøm, Denmark

Storstrøm Prison will be the setting for the world's most humane and resocializing closed prison, with architecture which supports the inmates' mental and physical well-being and also ensures a secure and pleasant workplace for employees.

Daylight and physical activity are important part of the architecture.
Juvenile Detention Center, Ali Khodr, 2014
Beirut, Lebanon
the detention center is in the middle of the Horsh Beirut as a way to establish a link between society and the delinquents in order to improve their respective views of each other. “The use of windows will also allow the public a glimpse into the delinquents’ world thus removing the fear barriers and facilitating their reinsertion and acceptance back into society.” The park even continues below it and is visible from the inside of the building as a way of hope for the residents, but at the same time torture because they can't go outside. In fact, the residents can see the whole city around them and not feel cut off from society.
On an Island

Outside the city

Inside the city

**Isolates** the prison and hides reality

Disconnects the prisoners from society

**Integrates** the prison and engages reality

Connects the prisoners to society
Cebu Provincial Detention and Rehabilitation Center, Cebu City, Philippines

The prison became well known for its rehabilitation program in 2005-2010 based on a program of choreographed exercise routines for the inmates. Thus, while prisoners in other jails lift weights or play basketball, these orange offenders dance. Videos with their “dancing shows” including famous “Thriller” can be found online.

A dancing prison

added meaning to the prisoner’s lives
According to Warden Victor Terazzas there has been no violence in the prison for more than ten years. "When there is a disagreement, we have the inmates involved put on the gloves and get into the boxing ring," relates Terazzas "After about two rounds the dispute is usually over."

Problems are solved through boxing

reduced violence
Exercice helps the inmates pass time and relieve stress

California State Prison, Los Angeles County, USA

Education or learning a trade will help them make a living in the outside world
Vertical Prison, Chow Khoon Toong & Ong Tien Yee, 2010
Malaysia

waste management prison
agriculture prison
Introduction of **activities** or **work/study** program inside prisons order to reform the prisoners

- exercise
- boxing
- dancing
- meditation
- military training
- factory work
- agriculture/farm work
- education
typical prison typologies

what should its typology look like?
should prisons be centralised?
Vertical Prison, Chow Khoon Toong & Ong Tien Yee, 2010
Malaysia

factory typology
vertical prison

waste management prison
Some studies reveal that post-release offenses are very high and that criminal’s imprisonment is just a temporal solution because they do not have the opportunity to rehabilitate in a desirable community.

This project examines the possibility of creating a vertical prison in the sky where inmates will have to work and live in a community that will contribute to the host city below. The prison will have agricultural fields, factories, and recyclable plants that will be operated by the offenders as a way to give back to the community. They will live “free” until they have completed their sentence and are prepared to rejoin their communities.
agriculture prison
The project questions this drive to turn a prison population into a cheap labor force - one that works not just to provide skills to inmates in the name of rehab but forces offenders to be both visibly productive and punished to quench the public's ever-present blood thirst for justice. The prison is modeled on the concentric circles of Hell in Dante's Inferno: the higher the offense the harsher the punishment and the deeper within the Earth the sinner is sent.
Typical Typology

Radial, circular or triangular layouts

Efficient to move prisoners around, but restrict prisoners to linear passageways and corridors which in turn promotes tension and conflict.

Atypical Typology

Above or below earth
Usually, in prisons, facilities are assembled into one big building. For example, a rectangular building around a central courtyard, or a cross plan... While these layouts are efficient to move prisoners around, they restrict prisoners to linear passageways and tight corridors which in turn promote tension and conflict.
A prison where offenders buy their cells

San Pedro functions as a gated community with restaurants, market stalls, hairdressers and play-grounds. Inmates have jobs inside the community, buy or rent their accommodation, and often live with their families. You will not find guards or metal bars.

Wealthier inmates can buy luxury cells that may include three floors, a kitchen, hot tub and cable TV.

Officers are only concerned with keeping inmates confined in the prison without regard to what happens to them inside.
In Halden, the approach is to create a campus like design where each facility is split and surrounded by green areas and outdoor physical activities. So inmates start their day with a walk as if they are living a normal life.
Yup, lock 'em up and throw 'em the key. The very idea that a prison might be useful and tolerable, if not enjoyable, is a hard one for us.

So if you’re caught, you pay your dues, you are released, and then what? Chances are, you’ll quickly re-offend. Because prison hasn’t taught you to do anything else. This prison emphasizes rehabilitation and education, allowing the prisoner population to live in college campus-like ‘modules’ and interact with the outside world.
Centralized

Decentralized
A five-star prison

The building that meets all requirements of modern architecture and has beautiful glass windows resembles a 5-star hotel, rather than a prison. Most inmates of this luxurious prison are imprisoned for burglary. The rate of burglary in Austria is 40% higher than in the USA. It seems that Justizzentrum Leoben attracts burglars.
Glen Santayana’s design for ‘Pri-School’

PriSchool - a prison which both integrates with a school of criminology and is embedded within the community.

The complex is split into four buildings, consisting of (from West to East) the school of criminology, the prison itself, a ‘pre-release’ building and a community center.
Ooiio prison, Iceland

Forgetting about dark spaces, small cells, and ugly grey concrete walls, they based the building design on natural light, open spaces, and natural green materials like peat, grass and flowers.
focusing on the contrast between beauty and roughness as a guiding theme for the project. This concept is also present in the choice of materials: concrete, wood and corten steel, which is rooted in a desire to adapt the complex to the landscape.
PROGRAM
Focus on separating different inmates in different facilities depending on the type of crime
OUTCOME  Urban decentralised network to reform inmates

<table>
<thead>
<tr>
<th>BEFORE</th>
<th>AFTER</th>
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| **centralized**
| **mono-functional** | **de-centralized**
| **multi-functional** |

<table>
<thead>
<tr>
<th>URBAN</th>
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<tr>
<td>hides reality and disconnects prisoners from society</td>
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<tr>
<td>engage reality and connect the prisoners to society</td>
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<th>DISSOLVED</th>
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<td>Rather than build different facilities for different criminal categories</td>
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<tr>
<td>I am attaching to already existing facilities for more efficiency and putting an end to the existence of prisons as we know it. Dissolving the stigma linked to prison institution with a minimal ecological footprint.</td>
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<tr>
<td>FACILITY</td>
</tr>
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</tr>
<tr>
<td>Existing Facility</td>
</tr>
<tr>
<td>Security</td>
</tr>
<tr>
<td>Staff</td>
</tr>
</tbody>
</table>

By using existing facilities I make use of the existing program, building, services and staff. Adding an annex that is mainly residential units for the inmates, secured by security guards.
S I T E
Mapping of different types of urban facilities
potential sites

College Protestant Français
Private School
Site Area: 23 000 m²
surrounding programs: residential, commercial, educational, religious

Hotel Dieu de France
Urban Hospital
Site Area: 22 000 m²
surrounding programs: residential, commercial, educational, religious
Barbar Khazen Police
Urban Police Station
Site Area: 5,000 m²
surrounding programs: residential, commercial, educational, banks

Madina Riyadiyye
Public Stadium
Site Area: 66,000 m²
surrounding programs: residential, commercial, educational,
VISION FOR HOTEL DIEU SITE
A MIXED TYPOLOGY

FACILITY TYPOLOGY

THE INMATE "UNIT"
THE X-STREAMLINE
INFRASTRUCTURAL DE-TENSION & RE-FORMATION PIPELINE

THESIS 2020 -

- BY CARL YAMMINE
THE MODELS

I- THE VERTICAL PRISON

by C. K. Toong & D. T. Yee
Malaysia, 2010

II- THE UNDERGROUND PRISON

HiFork Life, by A. Koll
UK, 2012

III- THE PANOPTICON

Jeremy Bentham, 1800

THIS MECHANISTIC APPROACH STARTS WITH THE PANOPTICON WHERE SURVEILLANCE IS MECHANISED
THE VISION

THE INFRASTRUCTURE PRISON
MY VISION IS TO EXPLORE THE REFORMATION PROCESS AS AN INFRASTRUCTURAL NETWORK THAT CONNECTS TO THE EXISTING INFRASTRUCTURE OF THE CITY RATHER THAN BEING A INDEPENDENT FACILITY.

AN URBAN DECENTRALISED REFORMATION NETWORK
AND TO CREATE A DECENTRALISED NETWORK THAT CONNECTS TO EXISTING INSTITUTIONS OR FACILITIES IN THE CITY FOR THEM TO BE USED IN THE PROCESS OF REFORMATION OF INMATES.

A HORIZONTAL PANOPTICON
IT IS ALSO ABOUT RETHINKING AN EXISTING PRISON TYPOLGY, THE PANOPTICON, AND ESSENTIALLY FLIPPING IT AND TRANSFORMING IT FROM CIRCULAR & CENTRALISED TO LINEAR & DECENTRALISED.
MECHANISATION OF REFORMATION

THE MACHINE

SIMILARLY TO THE PANOPTICON, I AM INTERESTED IN MECHANISING THE PROCESS OF DETENTION TO CREATE A HUMAN REFORMATION MACHINE.

REHABILITATION IS A TRANSFORMATIONAL PROCESS. SIMILARLY, THIS ‘MACHINE’ REFORMS THE PEOPLE INSIDE OF IT THROUGH A SPECIFIC PROGRAM IN ORDER TO MAKE THEM BETTER HUMAN BEINGS AND GET REINJECTED INTO SOCIETY WHEN THEY ARE READY.

WHILE AT THE SAME TIME THE INMATES PRODUCE AS A WAY TO GIVE BACK TO SOCIETY. HOWEVER, THIS INDUSTRIAL REFERENCE IS ONLY USED AS A METAPHOR, THIS PROJECT IS NOT A RAT LAB.

THE HUMAN FILTERING

THIS PROJECT IS ASSOCIATING REFORMATION WITH THE LINEAR MECHANICAL PROCESS OF FILTERING THE “WASTE” OF SOCIETY.

1. DETENTION

2. INSTITUTION

3. LEARN

WHICH DOES 2 THINGS:

1. FILTER: THE GOOD CITIZENS FROM THE CRIMINALS AND THE DIFFERENT TYPES OF CRIMINALS
2. CLEAN: REFORMS THEM INTO BETTER HUMAN BEINGS
**IN THE CITY**

**Of Beirut**

1. **Part of rethinking the prison is rethinking its current position, in relation to the city, and challenging the common trend of isolating it outside the city or on an island. This project takes the challenging approach of engaging the urban environment of Beirut. Detention is a reality that should be accepted, as it is an essential part of society, hiding it is hiding reality.

2. **Inside the city, it creates an interesting connection between citizens and the center itself. Society and the inmates would then be able to interact with each other and break the boundaries that used to separate them. This intersection has to happen in a very sensible way because issues of security and protection of society arise. Basically the barrier has to be thin yet secure.

3. **Bringing the detention center to the city, is a reminder for the citizens that there is a place that would hold them accountable for their actions. For this reason, it should engage the public and be in contact with the city.**

---

**IN THE RIVER**

**Of Beirut**

1. **Reformation is part of the socio-economic infrastructure of the city and the river is linked to this infrastructure as a natural highway.

2. **In the vision, the reformation process is a linear & decentralized transformational process that is coupled with a production line. The river, like any linear formation fulfills the need for this linear process.

3. **Also it is interesting to rethink abandoned infrastructure of the city and the river offers itself as an abandoned, underused topographical boundary that cuts through the city while at the same time linking to different institutions, industrial facilities and streets.**

---

**WHY?**

**IN THE CITY**

1. **Exposing the reality. Punishment is part of the social contract.


3. **Close in contact.

---

**IN THE RIVER**

1. **AN INFRASTUCTURAL GIANT. The river connects to a very prominent highway with high traffic flow.

2. **A TOPOGRAPHICAL BOUNDARY. A natural barrier needed for security and protection of society.

3. **A SYMBOLICAL BOUNDARY. Creating a river between citizens and inmates while still being present inside the city.**

---

**WHY?**
SITE ANALYSIS

*Source:* “NAHR BEIRUT: PROJECTIONS ON AN INFRASTRUCTURAL LANDSCAPE” - SANDRA FREM

The site analysis maps infrastructure, commercial and residential hubs, industrial and agricultural hubs in order to determine factories, agricultural areas and institutions where the pipeline and the city can intersect.
**THEODORE J. KOCHIANSKI**

**REFORMATION PROGRAM**

**THERE ARE 4 AREAS TO THE PROGRAM: RESIDENTIAL RECREATIONAL PRODUCTION EDUCATION**

The residential area is composed of dorms and a food area.

The recreational, composed of a gym, leisure activities and a football field outside the pipeline.

The educational composed of classes, workshops and connected to a school.

And the production line composed of workshops and connected to an agricultural field.

---

**REHABILITATION IS A TRANSFORMATIONAL PROCESS. SIMILARLY, THIS 'MACHINE' DETENTION TO CREATE A HUMAN REFORMATION MACHINE.**

**HOW REFORMATION IS DONE?**

*WE DETAIN CRIMINALS TO PROTECT SOCIETY BECAUSE THEY FULFILL MY VISION OF REFORMATION AND WHY THIS PROGRAM?*

**WHY?**

**HOW?**

**WHERE?**

*MAKING USE OF EXISTING FACILITIES NEAR THE RIVER FOR PART OF THE PROGRAM AND THE OTHER PART IS INSIDE THE PIPELINE***
WHY THIS PROGRAM? Because in FYP 1 I established that reformation is most effective when it is a combination of education, physical exercise and work. Exercise is a form of de-tension, work gives a sense of purpose and education develops values. The program is also catered for different age groups and crime types.

H.O.W?

REFORM

EXERCISE

form of de-tension

box

dancing

WORK

military training

factory/labour work

agriculture/farm work

nurse training

sense of purpose

EDUCATION

knowledge

knowledge

REFORMED

During this phase the inmate has time (months to years) to think and reflect on his actions.

Basic

Mental Health

Physical Health

During this phase the inmate spends less time doing labor work and more time learning and training to be reintegrated into society later on.

Workout

Work

Reflect

Eat

Work

Reflect

W.shops

Graduates

Reform Adults

Normal Criminal

Reform Juveniles

Graduates
### USERS STRATEGY

The pipeline is segmented into 4 blocks depending on age and crime type to create a unified consistent pipeline. From the feloners to juveniles.

<table>
<thead>
<tr>
<th>AGE GROUP</th>
<th>CRIME TYPE</th>
<th>SENTENCE</th>
<th>CATEGORISATION</th>
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</thead>
<tbody>
<tr>
<td>juveniles 18-</td>
<td>ANY (theft-larceny, assault, truancy, underage drinking/driving)</td>
<td>months to years</td>
<td>2.5% juveniles 5% women</td>
</tr>
<tr>
<td>adults 18+</td>
<td>MISDEMEANORS (vandalism, traffic violations, petty theft, trespassing)</td>
<td>less than 1 year</td>
<td>65% pre-trial</td>
</tr>
<tr>
<td></td>
<td>MENTALLY-ILL (mentally unstable criminals)</td>
<td>months to years</td>
<td>27.5% others</td>
</tr>
<tr>
<td></td>
<td>FELONS (human/drug trafficking, murder, robbery, rape)</td>
<td>more than 1 year</td>
<td></td>
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I have an urban design strategy that have me have a unified consistent form but the programatic components from within are different.
DESIGN

THE X-STRAEMLINE INFRASTRUCTURAL DE-TENSION & RE-FORMATION PIPELINE

BY CARL YAMMINE
**STRUCTURAL DIAGRAMS**

**RIBCAGE STRUCTURE OF THE PIPELINE**

The main structure is a series of successive ribs braced by horizontal beams all along to form a ribcage structure that creates the pipeline, allowing the water to flow.

**INTERNAL STRUCTURE**

Inside the ribcage are a series of smaller circular ribs that together creates essentially smaller pipes connected to each other and attached to the main structure. The space inside the pipes is then inhabited by slabs.

**CIRCULATION SYSTEMS**

Naturally there are 2 separate circulation networks: the guard and the inmates. The circulation cores for the guard.
SECTION AA
LATERAL SECTION IN THE GUARD AREA

SECTION BB
LATERAL SECTION IN THE INMATE AREA. IT CUTS THROUGH THE DORMS, CANTINE, GYM AND THE "IN-CAR-CERATION" NETWORK AND THE RIVER RUNS BELOW.
SECTION CC

THIS SECTION SHOWS HOW THE PIPELINE CONNECTS TO THE AGRICULTURE FIELD AND OTHER FACILITIES THROUGH THIS NETWORK.
SITE PLAN
ROAD NETWORK 1:1000
AGRICULTURE FIELDS
FOOTBALL FIELD
BLOCK A: FELONERS
BLOCK B: MENTALLY-ILL
BLOCK C: MISDEMEANORS
BLOCK D: JUVENILES
SCHOOL
CENTER
GUARD TOWERS
INTERNAL ROAD SYSTEM
GUARD TOWERS
ROAD NETWORK CONNECTING ALL THE BLOCKS TO THE HIGHWAYS ON BOTH SIDES OF THE RIVER. UNDERGROUND IS THE NETWORK CONNECTING TO THE INSTITUTIONS.
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Foucault: Government Surveillance & Prison
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Plato, 381 BC. “Republic"


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