A Forensic Psychiatric Hospital: Extension Service for Correctional Institutes and Local and National Jails
Qualities and Kinds of Architectural Spaces of a Forensic Psychiatric Hospital

By

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CHAPTER 1.1

INTRODUCTION:

A Forensic Psychiatry focuses on the interrelationships between psychiatry and civil, criminal, and administrative law. This specialization evaluates individuals involved with the legal system and provides specialized treatment to those incarcerated in jails, prisons, and forensic psychiatry hospitals.

The current situation of the Correctional Institutes and Jails in the country is the absence of appropriate medical space for different inmates, specifically in the field of Forensic Psychiatry. More specialized medical treatments are needed to extend the service of the correctional institutes and jails.

BACKGROUND OF THE STUDY:

Forensic Psychiatry medical field has three essential themes, these are: Careful assessment (clearly ascertained), Forensic question of possible malingering (simulating insanity) and Matter clinical management (possible needs of restraints).

In the criminal justice system, people have significantly higher rates of mental order and mental illness rather than people in general community. Mental illness likely causes people to be detained in custody, sentenced in imprisonment, or commit crime and violence. In most places, young men overrepresented the prison population that is, more likely to be referred to forensic mental health specialist and services.

Forensic psychiatry means related and associated with legal issues. Providing assessment and treatment of people with mental disorders and record of criminal offending or those that have a risk of crime is the function of Forensic Health Mental Services.
The mental condition of alleged offenders is mostly assessed in the following reasons: Whether they are not capable of making appearance and plea in the court, their state of mind at the time of offence and their current need for mental treatment.

Crime solution efficiency between January and May 2014 nationwide was at 35.5%, a rise from last year’s 26.77%. Both figures are only from police blotters, and exclude reports from other law enforcement agencies. Crime clearance efficiency also rose from January to May 2014 compared to the same period last year – from 38.56% to 49.25% The PNP DIDM saw a 17.86% increase in total crime volume between January and May 2014, compared to January to May 2013. Total crime volume is the sum of reported index and non-index crimes. (http://www.rappler.com/nation/61798-pnp-crime-stats-2014)

The DIDM acknowledged the following weaknesses in crime reporting:

- varying practices in counting crime incidents
- traffic-related offenses are rarely reflected in the crime statistics
- offenses involving women and minors are under-counted
- exclusion of cases filed directly before courts
- reports of other law enforcement agencies are not considered
- wide discretion of unit commanders and investigators in deciding whether to include or exclude a crime incident in their report
most police stations do not have official Desk (Blue) Blotter and WCPD (Pink) Blotter

STATEMENT OF THE PROBLEM:

The primary purpose of this proposal is to study on how to supplement the gaps in the medical treatment space planning and services of the existing correctional institutes and jails. This argues of what spaces is needed to improve proper treatment and recovery of inmates. More specifically, it attempts to answer the following questions:

- What are the spaces needed for the treatment and equipment of psychiatric doctors?
- What kind of appearance and character is needed for the healthcare environment and hospital to lessen the tension and helps in the healing treatment of the patients?
- How the circulation of patients, according to level of cases, is will be segregated inside the structure?
- What kind of space planning is needed for security purposes, considering the state of mind of patients, for prevention of violence inside structure?
- What specifically is an ideal site for the Forensic Psychiatric Hospital and Healthcare Environment?

GOALS & OBJECTIVES:

With the help of Department of Health, the goal is to consult and ask for treatment processes done in the field of forensic psychiatry and what kind of environment will be needed the said hospital and healthcare environment. Using the information gathered, architectural spaces will be identified for the proposal.

Through visiting city jails (Makati City jail, Muntinlupa Bilibid Prison, etc.), the goal is to identify the current situation of inmates with legal and administrative cases and gather their activities done inside. In addition, if possible, statistics of the current inmates will be asked. The gathered information will identify the architectural spaces needed for healthcare environment and the size of the said spaces.
With the help of Department of Justice and Fiscal lawyers, the goal is to consult on how the manage people with legal and administrative cases and what kind of penalty the used to give. The information gathered will be added for architectural spaces for healthcare facilities and treatment.

**SIGNIFICANCE OF THE STUDY:**
The study will contribute to the following:

- **Department of Health** – Facilities and treatment structure for the forensic psychiatric cases and a place for research for the agency.
- **Rural/City Jails and Correctional Institutes** – Extension of services to their function and will give more reliability to their results towards inmates.
- **Department of Justice** – The agency will have a place of research and consultation for the inmates/patients for proper and reliable management of cases.
- **Philippine National Police** – The agency will have a place for treatment with severe state of prisoners and will lessen the load of their security through proper treatment of people in crime.

**SCOPE AND LIMITATION:**

The nature of the study is to determine the architectural spaces needed for the forensic psychiatric hospital and healthcare environment through, consulting the Department of Health for treatment and facilities purposes, visiting city jails for situational and statistical purposes, and consulting the Department of Justice or if possible with Fiscal lawyers for the management of legal and administrative cases. Technical aspects of medical facilities, laws regarding the legal cases and city jails are beyond the researcher’s control.

**ASSUMPTION:**

The assumption of the research is a treatment facility with a one-on-one interaction with psychiatric doctors and an interior character of peaceful aura for patients/inmates inside the structure. Also, assumptions is that there will be a need for a space for research facilities for different agencies like, Department of Health,
Department of Justice, Philippine National Police and etc. In addition, the site will be assigned near city jails and correctional institutes, with integrated offices of some government agencies.

**CONCEPTUAL FRAMEWORK:**

<table>
<thead>
<tr>
<th>Categories</th>
<th>Agency</th>
<th>Information/Procedure</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health &amp; Facility Concerns</td>
<td>Department of Health</td>
<td>List of treatment procedures &amp; facility spaces</td>
<td>Architectural space for treatment areas and healthcare facilities</td>
</tr>
<tr>
<td>Management and Legal Laws Concerns</td>
<td>Department of Justice</td>
<td>Legal laws and penalty for administrative and legal cases</td>
<td>Architectural spaces for penalty required by the law.</td>
</tr>
</tbody>
</table>

**DEFINITION OF TERMS:**

- **Forensic** – means associated by legal and criminal issues.
- **Fiscal Lawyers** – professional that handles and manages legal, civil, administrative and criminal cases.
- **DOH** - Department of Health
- **DOJ** – Department of Justice
- **PNP** – Philippine National Police
CHAPTER 1.2

RELATED LITERATURE:

Bellevue Hospital Centre Psychiatry Inpatient Services

Bellevue Hospital adult inpatient psychiatric services are comprised of 220 beds distributed in seven general units for patients’ ages in legal ages. A full range of in-patient psychiatric treatment is provided, including particular attention to those with psychotic, affective, and other major psychiatric illness, often with co-occurring substance abuse. Other units is devoted to the treatment of Latino patients, to Chinese-speaking patients, and one to patients with both major psychiatric and substance abuse illness.

The Forensic Psychiatry Unit consists of 68 beds on two units, in a maximum-security mental health unit jointly operated by the New York City Health and Hospitals Corporation and the Department of Correction of the City of New York.

Comprehensive Psychiatric Emergency Program (CPEP) is a state of the art emergency psychiatric service. CPEP provides a spectrum of services designed to meet the needs of our diverse clientele, in the most effective and least restrictive manner possible. Clinical program is one of the most respected of its kind, and is the destination of choice for many private and public agencies seeking help for someone requiring emergency psychiatric care. Service is fully integrated with the entire spectrum of psychiatric services available at Bellevue Hospital.

"The Extended Observation Unit (EOU) is a six-bed inpatient unit physically located in the CPEP. Patients can be admitted to the Extended Observation Unit for up to 72 hours for high intensity evaluation and management of unclear and difficult clinical situations and for cases which may not require a full inpatient admission"
The Mobile Crisis Unit consists of clinicians who can respond to persons in need of emergency psychiatric care who are unable or unwilling to present on their own. The Mobile Crisis Unit receives referrals from the community, goes to the person’s home, performs assessments, delivers care, and removes individuals to an emergency department when necessary.

The Interim Crisis Services Clinic assists patients transitioning to community mental health resources who may require resolution of acute crises. This service is located near CPEP, on the ground floor of Bellevue Hospital. It provides high-intensity, easy access to care of limited duration, to patients who otherwise might require inpatient hospitalization to stabilize and resolve a time-limited crisis.

Crisis Residence Beds provide short term community housing for patients in acute psychiatric need who lack adequate supportive housing for safe community maintenance.”

(Source: http://psych.med.nyu.edu/patient-care/inpatient-services/bellevue-hospital/psychiatry-services)
National Center for Mental Health Mandaluyong City

Established through Public Works Act 3258 and it was formally opened on December 17, 1928. It was originally called the Insular Psychopathic Hospital then was later called the National Mental Hospital. It was renamed National Center for Mental Health (NCMH) through Memorandum Circular No. 48 issued by the Office of the President on November 12, 1986. NCMH has an authorized bed capacity of 4,200 and a daily average of around 3,000 in-patients. It has a total of 35 Pavilions and 52 Wards sprawling on a 46.7 hectare compound in Mauway, Mandaluyong City.

“Today, NCMH has an authorized bed capacity of 4,200 and a daily average of 3,400 in-patients. It sprawls on a 46.7 hectare compound with a total of 35 Pavilions/Cottages and 52 Wards. The Center has an authorized personnel component of 1,993, consisting of 116 Doctors, 375 Nurses, 655 Nursing Attendants, 651 Administrative Staff and 196 Medical Ancillary Personnel.”

(source: http://wikimapia.org/607723/National-Center-for-Mental-Health-NCMH)
(Minimum Standard Operational For Psychiatric Hospitals, msdh.ms.gov)
(http://www.law.cornell.edu/cfr/text/42/482.62)
(http://www.maine.gov/dhhs/dlrs/medical_facilities/hospitals/psychiatric.html)
Chapter 1.3
Research Methodology

RESEARCH DESIGN:

The nature of research design is a combination of descriptive method/observation, case studies and interview.

Using descriptive method, the researcher will collect data through observation and case study. Existing psychiatric hospitals will be observed by the researcher. The observation will start at the exterior environment of the hospitals to determine what kind of character it should have. After exterior observation, interior observation follows. Here, description of facilities and function of the spaces inside the structure will be analysed. In addition to hospitals, a city jail will also be visited and observed on how they treat and transfer inmates to psychiatric hospitals and know statistics of inmates.

Interview method will be used for talking to professionals such psychiatric doctors, Department of Health and architects specialized in medical planning. Here, kinds of spaces and facilities will be dictated due to the information from psychiatric doctors will say. Also, guidelines from Department of Health in designing specialized hospitals will be given. Lastly, effective planning consultation with architects with specialty in medical planning will dictate the performance of whole plan.

POPULATION UNIVERSE:

The subject of the research will be talking to professionals and agency that has knowledge in designing psychiatric hospital planning. Specifically, the subject will be Department of Health. Consultation with the architect in-charge in planning of the government hospitals and other professional related to the study will supplement the needs in the research.
**SAMPLING TECHNIQUE:**

The sampling technique will cluster sampling. It will be a selection of respondents from a defined group of professionals, to be specific, professionals in the Department of Health agency. Their consultation and lectures will be used as data for analysis.

**RESEARCH LOCALE:**

- Department of Health, Bldg. 4, DOH Central Office, Rizal Avenue, Sta. Cruz, Manila City will be the place of research and gathering information.
- National Centre for Mental Health Mandaluyong City.
- Dagupan Rehabilitation Centre

**RESEARCH INSTRUMENTS:**

Research Instrument will be interview and observation. Interview with professionals will dictate the architectural space of the Forensic Psychiatric Hospital and Healthcare Environment. Through observation of plans and existing psychiatric hospitals, ideas for planning will be given.
CHAPTER 1.4
Summary of Findings

A. INTERVIEW
(Interview with Arch. Toots Reymundo, Department of Health architect in-charge of governmental planning of hospitals consultation)

The following pointers are guidelines based on Department of Health and Ar. Toots Reymundo statements:

- The ideal site for the Forensic Psychiatric Hospital is on regional rural areas.
- The ideal site should not be near residential areas.
- The site development should have big open spaces with proper security.
- Privacy must reflect in planning due to different cases of in-patients that may cause death and injuries.
- Change the character of the existing mental health facilities buildings into a healthier look.
- Some specific architectural space necessary are the following:
  - Forensic In-patient Beds – beds design for community living and mind conditioning
  - OPD – on a contracted based by probations.
  - Emergency Rooms – duet to violence of in-patients, treatment rooms must be provided
  - Support Services – cleaning, laundry, dietetics and etc.
  - Engineering Department - Ambulance, emergencies, utilities
  - Waste Storage
  - Warehouse for Supplies - temporary storage for supplies, then will be distributed to different department
  - Receiving ducts
  - Central Waste Storage
- Spaces for coordination with family of in-patients

  - The ideal site development must have therapy activities. (Workshops, Carpentry, Garden, Etc.)
  - Give an office for Bureau of Prison.
  - Give activities for in-patient for workshop that will produce funds.
  - The design of site should be bounded and no contact and view to outside boundary.
  - Create a site that will rehabilitate at same time, will program the in-patients to integrate back to community.
  - Provide Birth Units. (Delivery room and operations)
  - The flow of entrance in the site should be: ENTRANCE --- SECURITY ----- MAIN FUNCTION.
  - Consult and read Mental health Act for sizes and numbers of beds for wards and etc.
  - Must Provide mini supreme courts due to incapability of in-patients to travel to supreme courts and might cause mental breakdown.
  - Provide offices for medical doctors related and research laboratory.

**Rationale from Arch. Toots Reymundo:**

The Forensic Psychiatric Hospital is related to Bureau of Prison and Bureau of Justice. She said, that the importance of this Forensic Psychiatric Hospital is, it will fill the gap of Correctional Institutes and City Jails. These gaps are lack of therapeutic spaces for mental healing, lack spaces for medical facilities and etc. She added that if this will come to reality, it will be a diversion program for Bureau of Prison.

*(Interview Mercedes D. Penamora, Fiscal, Consultant, Office of the City Prosecutor Quezon, City, Nov. 21, 2014)*

All written information came from Fiscal Penamora statements and written notes. These are information of why patients in Psychiatric Hospital are charged and put to rehabilitation. This will dictate the kind of therapy and workshop in the structure and the separation of patients, that will help in architectural space planning.
I. Reason why accused person are sentenced to imprisonment? Up to what degree?

- Because it was proved beyond reasonable doubt by complainant’s witnesses and evidence that they committed the crime with which they are being charged.

- The spirit behind the penalty is to serve as a lesson to the offender not to commit the same act/s again and also to serve as a deterrent not only to them but for others in order to show that crime does not pay.

- If only everyone will be aware of that fact, then, we can have a very peaceful society to free from bad elements.

- Imprisonment covers only cases where the penalty imposed is 6 years and 1 day of prison correctional. If 6 years only, we have the so-called probation system where the accused is given a chance not to be imprisoned subject to certain conditions such as:
  
  o It was the first offense committed and there is no other case against him;
  
  o Reporting to Probation Office, Barangay, etc. do tree planting and similar activities depending upon the recommendation by the Probation Office.

The degree of penalties vary for light offenses, less grave and grave offenses. The Revised Penal Code or the special laws provide the penalty or its coverage from which the judge hearing the case will base the sentence;

II. Cases Often Encountered:

Forensic – cases with injuries like slight, less serious and serious physical injuries, cases with deaths caused to victims whether intentional or not, in order to determine the cause of injuries/death seriousness and duration of medical attendance in case the victim is alive. In case of murder/homicide whether it is attempted or frustrated.
Rape, sexual assault – to prove the use of force, penetration etc. How committed – use of penis, fingering, blunt instruments.

Cases involving the use of firearms to determine if the bullet discharged came from the firearm confiscated/used in connection with the crime.

Legal – all crimes under the Revised Penal Code and violation of laws criminal in nature like B.P. 22 on bouncing checks, etc.

Administrative – None. Except those involving employees of the Office who are charged administratively in connection with their duties.

III. Basis of Penalty

Gravity of the offense and as provided for by law.

Example – Murder (killing with treachery, abuse of superior strength, etc.) life imprisonment.

Homicide (killing without those attendance circumstances) 12 years and 1 day to 20 years of reclusion Temporal

Attempted Homicide – 6 months and 1 day to 6 years of prison correctional.

IV. Penalties Usually Given & Duration

It depends. As provided for by the Revised Penal Code and other penal laws, the duration of imprisonment is specified. Aside from imprisonment fine is also provided. It is up to the judge to impose the penalty taken from the duration provided for by law.
V. Security Rights of Prisoners.

- Security from physical harm from outside and within.
- Provided with regular meals (security of Health and subsistence, medical needs and the comforts of a home)
- Comfort room, beddings, etc. Just like in one’s own home.
- Recreation, physical and spiritual exercise, social activities, etc.

(All information and data from the interview are recorded and in hard copy. The papers are in the hands of researcher)

B. CASE STUDY / MODEL STRUCTURES

National Centre for Mental Health Mandaluyong City

Due to strict compliance to the rules of NCMH, picture taking were prohibited for the researcher. All information given is based observation and statements from staffs of Dr. Bernardino A. Vicente, Medical Center Chief II.

- The flow of site:
• All psychiatric wards are of the same design. Beds only with minimal partition.

• Distances between specific wards are in great distance, for security purposes.

• It is part of the design of site to have large trees and plant covered for mental purposes of the in-patient. It is to prevent contact with other people.

• Wards are in style of Pavilion with a serious character of the building.

• Central Storage of medicines, bandages and other medical materials are all in one building, then distributed to different wards.

• Each ward building has a space and office for medical doctors and other professional related in the therapeutic healing of the mental health problems.

• The whole site is covered with vegetation and large trees, for the reason of isolation and prevention of patients to see other people that may cause violence and injury.

• Based on the interviewee, there are minimal space and activity for therapeutic healing spaces.

• Visiting areas are provided in every building.

• Medical research building is separated from administration building.

• Screening area of in-coming patients is in separate space.

• Service area and general kitchen are in separate space.

• Medical facilities such as, x-ray, mold room, film room, blood testing and etc. are in separate space.

**Dagupan Rehabilitation Center**
(CAD files, pictures and information below are all from Department of Health)

These CAD files are given for study model and references for planning of Forensic Psychiatric Hospital.

Some of architectural spaces is useful and has same function for the project in the study model.

Due to strict compliance to the rules, picture taking were prohibited for the researcher. All information given is based observation and statements from staffs and feedback from Department of Health.
- Central Storage of medicines, bandages and other medical materials are all in one building, then distributed to different wards.
- Screening area of in-coming patients is in separate space.
- Service area and general kitchen are in separate space.
- Maintenance and Engineering area are also separated with coverings of vegetation.
- The workshop area provided is basketball and gym space only.
- Each ward building has a space and office for medical doctors and other professional related in the therapeutic healing of the mental health problems.
- Visiting areas are provided in every building.
- Cobalt Room is provided and enclosed and hidden in the building.
- Medical facilities such as, x-ray, mold room, film room, blood testing and etc. are in separate space.
- Medical Doctors rooms are in separate floor together with conference rooms, discussion rooms and etc.
- Open courts are provided inside the plan of the buildings.
- Distances between wards are not that far in distance. Mostly, rooms are for 8 – 10 person only.
- There are dead spaces in the structure like discussion areas and consultation areas that are converted to utility storage only.
- Screening of men and women is not that far in distance.
- Physiatrist room is hidden and together with medical facilities.
CHAPTER 1.5
Conclusion and Recommendation

Based on gathered results, a Forensic Psychiatric Hospital must be located on areas with great lot size and far away from urban areas. Site location must be rural, far away from residential and crowded with trees. This is to prevention of patients to see and interact with outside people, which may cause accidents, violence and injury. Ideal site will be a castaway lot with a lot of trees and greeneries.

In developing the site, characteristics of the plan should be net system. A net system means, buildings are collapsed and spread. Also, the main entrance must be far away from the main function of the complex and the buildings must not be seen or not visible outside the site development. Trees and landscapes must be used as gates and barriers for visions. Distances of wardens must be in great distance depending on security level of patients. Greenbelts must be observed in the distance of buildings. Administration building and research building must be in separate buildings.

In space planning of the Forensic Psychiatric Hospital, the recommended is a one-storey building according to DOH architect. It is recommended to create a new division of spaces inside the ward building for the patients. A space that is relaxing and accelerates mental healing must be pushed. Also, the planning of service spaces and utility spaces must be considered, wherein labour and manual effort must be reduced.

It is recommended to create a new character of a typical Psychiatric Hospital. Create something that is serious looking building yet, relaxing and healing. Application of modern and organic architecture must be observed.
CHAPTER 2.1
Research Focus: Rationale

The Forensic Psychiatric Hospital aims to supplement the need for medical healing of prisons in the National and Local jail, as well as, Correctional Institutes. The traditional scenario in our Bureau of Prisons in the Philippines is, when a person is accused of imprisonment, usually minimum of 6 years, he/she will stay in jail for a long time. After he/she has stayed in the prison, that person will undergo in training in a correctional. (Based on statement of Fiscal Mercedes Penamora) Having that said, the aim of Forensic Psychiatric Hospital is to supplement the medical need of prisoners while on imprisonment.

This research aims to connect the services of National Jails, Correctional Institutes and Mental Healthcare. It aims to create a space and design for new approach of therapeutic healing. This is to create a mental healthcare that has a new character and a new approach in site planning to enhance healing of patients.

Another goal of this proposal is to create a sustainable structure that will lessen the cost, use of energy and technology in the structure. Aside from sustainability, it aims to adopt the concept of organic architecture and modern architecture in the space planning.
CHAPTER 2.2
Research Focus: Principles and Relevance to the Project

The project aims to supplement the services of National and Local Jails and the Correctional Institutes. There are two points to consider in connecting the function of the Forensic Psychiatric Hospital into the said Institutes. These are: (Source: Department of Health, Philippines)

- Bureau of Prisons – The points out of why people are in jails. In order to connect the function of the hospital, the designer must know the reasons and roots of why the patients are there in the first place. Also, this agency will give guidelines on the penalty and punishment applied to the prisoner/patient. In addition, the type of cases will be dictated then sorted in the proposed hospital for proper groupings of patients.
- Medical Psychiatry – This point will dictate the therapeutic activities done inside a psychiatric hospital. All the workshops that should be done will be known and be converted to architectural spaces. The workshops are different for every patient depending on the level of security measures and different cases.

One of the goals of this proposal research is to change the character of the typical psychiatric and mental hospitals. This can be done by applying the principles from organic architecture and modernization. The following are the principles based on Organic Architecture Guild and some of Frank Lloyd Wright’s guides:

- Cultural and Historical Connections – it is essential to know and understand the roots and origins of place. Know how it came to be and who the specific people that shaped its evolution were. Useful background information that can be learned about a place and this information is the basis for project planning. Data that surfaces represents the basis for understanding the resources that can be used in development planning, programming and creating a specific character in the existing local.
- Land Planning and Natural Resource Utilization: Design with Nature – Natural features of a local place includes the geology, vegetation, climate and topography, which are the building blocks of
architectural design process and planning. It is a must to understand the existing natural forces will allow sustainable projects to work in harmony, giving a development a higher efficient and reliable performance.

- **Technology Integration** – The principle of organic integration of technology is a recognition that at the heart of all human endeavors relies on electrical, mechanical and structural systems. It maximizes and balances the latest of technological advancements with natural processes to make sustainable systems.

- **Crafts People** – Organic architecture relies on people at its core and is shaped by us from day one. The crafts person is identified here to be an individual that takes pride of his/her responsibilities and is mindful of all potential oppurtunities that are available to make organic project.

- **Good design understands that to be truly beautiful, that it must have SIMPLICITY and REPOSE. Architecture, like any other art, must not fall victim to fashion and trends and maintain its course. The elements of good design are to follow Natures example and have the form and function be one and the same. The arrangement of the design must be such that removing any one piece would destroy the intended composition.**

- **Design is expressive to each UNIQUE circumstance. Propose that there should be as many types and styles of Architecture as there are Individuals.**

- **A building should GROW from its site as Nature grows: from the inside out, and shaped by the forces which surround it.**

- **The nature of the MATERIALS should be expressed throughout the building as inherent to their quality and ability. False or fake materials made to mimic others create false architecture.**

- **We require from our buildings, as we do from people, an INTEGRITY and HONESTY in all it expresses. It should be true to itself and its environment.**
Another research focus of the proposal is building a sustainable structure which reduces the use of energy and mechanical functions. The following are principles:

**COST-EFFECTIVE**

“We no longer build buildings like we use to, nor do we pay for them in the same way. Buildings today are life supporting systems, communication terminals, data manufacturing centres and much more.” (Wilson, in Foreword to Ruegg & Marshall, 1990)

Cost-effective principle answers the following questions:

- Does lowest first-cost structure meets the program?
- Is it at lowest operating and maintenance costs?
- What is the longest life span?
- Is the facility productive?
- Does the program offers great return of investment?

The following are the principles in cost-effective structure:

- Utilize cost and value engineering throughout the planning, design and development process. In this principle, considering the life cycle costs in the project requirements is essential.
- Economic Analysis to evaluate design alternatives. Here, it includes the assumed costs impact of energy & utility use, operation & maintenance, and the future system replacements.
- Consider non-monetary benefits such as aesthetics, historic preservation, security and safety. The principle explains that it should know the costs and benefits of design alternatives for decision-making costs.

(Source: WBDG, Cost-Effective Committee, 2012)
INTEGRATED-WHOLE BUILDING DESIGN

In this principle, the following are considered:

- Accessibility – building elements, heights, clearances
- Aesthetics – physical appearance plus energy & material effective
- Cost-Effective – elements based on life-cycle cost
- Functional – durability and efficient maintenance of building
- Historic preservation – preservation, rehabilitation, restoration and reconstruction
- Productivity – user’s well-being in terms of physical and psychological comfort
- Secure / Safety – protection against man-made and natural hazards
- Sustainability – environmental performance should be considered

(Source: Don Prowler, FAIA, Donald Prowler & Associates, 2012)

INDOOR ENVIRONMENT QUALITY

Facilitate quality IEQ through good design, construction, renovation and practices. This includes using of less noxious materials during repair and cleaning activities. In addition to that, it is a must to value aesthetic decisions in doing indoor environment quality.

Provision of thermal comfort is a must. Consideration of external conditions and impacting thermal comfort adds to the principle. Also, provide ventilation and maintain acceptable indoor air quality. Other principles to be considered are the following:

- Prevent radon entry, airborne bacteria, mold and fungi.
- Limit the spread of pathogens.
- Use materials that do not emit pollutants and low-emitting.
• Assure acoustic privacy & comfort. Avoid use of small diameter ducts that causes high velocity airflow.
• Create a high-performance luminous environment.
• Provide quality water.

(Source: WBDG, Sustainable Committee on IEQ, 2012)

STRATEGIES IN SUSTAINABILITY AND ENERGY-EFFICIENCY FOR RETROFITTING

• Determine the energy and water systems at optimum, and then upgrade it to minimize consumption.
• Optimize the recycling of demolition and construction wastes to minimize waste to landfills.
• Check if natural ventilation intake is possible alternatives to reduce heating and cooling loads.
• Consider renewable energy that offsets consumption of fossil-fuel.
• Use solar shading devices.
• Check if a cool roof and green roof are cost-effective to reduce heat island effect and storm water runoff.
• Ensuring a new renovated buildings to perform as designed, measure the performance of the building regularly.
• Historical buildings must maintain a balance between the need for energy and water savings with the character of the original building fabric.

(Source: Richard Paradis, P.E., BSCP, Bd. Cert., Noise Control Engineer, 2012)
CHAPTER 2.3
Research Focus: Application to the Project

Application of the principles will be seen in the form and site plan development. The concept of form and site has a relative image of correctional institutes and medical rehabilitation. A condense building sites covered with greeneries and vegetation will be applied in the structures.

It is a must to create a new character of Psychiatric Hospitals. Modernize and new approach to space planning will be done in the process. Also, application of new materials with respect to sustainability and technology requirements of a Forensic Psychiatric Hospital will be observed.
With respect to principles of organic architecture, the concept of putting nature as part of the structure will be applied in building. Putting nature inside the structure and creating a garden inside will be a concept. Also, this will be a part of therapeutic healing of the patients.

Part of the research focus is to integrate technology as compulsory part of the structure. Just like in Eden project, application of architectural forms and tropical concepts will be applied to reduce energy consumption and let the organic concept flow in the whole structure. Unique forms will be applied in the structure to attain all the natural resources and reduce the use of mechanical service, as much as possible.
CHAPTER 3.1
Site Selection Process

CRITERIA FOR SELECTION: (Based on DOH Guidelines and case studies)

- Must be on rural and regional areas.
- Must be covered by greeneries.
- Must be far away from developments.
- Must not be near residential areas, or no residential at all nearby.
- Site must be covered by large trees, wherein the structure must not be very visible outside the compound.
- Must be far away from noises.
- Must have a clean and refreshing air, no industrial areas nearby, as part of healing treatment.
- If possible, must not be on the main roads of site.

SITE OPTIONS:

Site Location: Magalang, Pampanga.

The site is facing a minor road, Magalang-Concepcion Road. The site is covered with greeneries and no neighbour structures. Also, the residential area are about 100 meters approximately away from the site. The shoulder of the road is about 3 meter wide, which is good set back and adds to covering requirement of the site.
The site is composed of 5 tax declaration. Magalang, Pampanga.
Site Location: Arayat, Pampanga

The site is facing Magalang-Arayat Road, on the other side of the main town. The site has a lot trees and greeneries. Although, there are few residential areas nearby about 40-50 meters, but still far.

The site is composed of 2 tax declaration only, meaning a lot smaller than the first one.
SITE LOCATION: Buhangin Barangay, Communal Road, Davao

The site is facing a major road, Communal Road. The site is rich in trees, which is a recommended requirement of the site for Forensic Psychiatric Hospital. There are few residential areas nearby, but still a big distance to consider. The site has two tax declaration.
SITE SELECTION AND JUSTIFICATION:

Among the three sites, Magalang Pampanga is the best choice. This is due to its location, it is rural, free from noise, great in distance from residential and greeneries and trees are available. Also, size is about 3.33 hectares. It is good choice as well, because even though it is far from developments, it is still accessible and fast ride from Magalang Town proper for local Jail and provincial jail of Pampanga. Another reason to choose this site is because, the crime rate in Pampanga is increasing yearly this past years by approximately 20% of the original, which is a good market for the Forensic Psychiatric Hospital.


![Provincial Jail in Pampanga](image1.jpg)

Magalang, Pampanga Downtown
CHAPTER 3.2
Site Evaluation and Analysis

THE MACRO SETTING:

The proposed project is located in the province of Pampanga. The basis of choosing the site is regional. Since Forensic Psychiatric Hospital is first of its kind in the Philippines, there is no similar structure yet. Among all regions, Region III was chosen due to its minimal and limited mental health care and rehabilitation. (http://www.ddb.gov.ph/component/content/article/46-sidebar/65-doh-accredited-rehabilitation-centers) Also, the crime rate in Pampanga is increasing yearly these past years by approximately 20% of the original, which is a good market for the Forensic Psychiatric Hospital.

a. Population

<table>
<thead>
<tr>
<th>Decennial Census</th>
<th>Total Population (in thousands)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1960</td>
<td>541.4</td>
</tr>
<tr>
<td>1970</td>
<td>772.7</td>
</tr>
<tr>
<td>1980</td>
<td>992.0</td>
</tr>
<tr>
<td>1990</td>
<td>1,295.9</td>
</tr>
<tr>
<td>2000</td>
<td>1,614.9</td>
</tr>
<tr>
<td>2010</td>
<td>2,014.0</td>
</tr>
</tbody>
</table>
“Based on the 2010 Census of Population and Housing (CPH), the province of Pampanga, excluding Angeles City, posted a total population of 2,014,019 persons as of May 1, 2010. This is larger by 399,077 persons compared to its total population of 1,614,942 persons counted in the 2000 CPH. The increase in the population count from 2000 to 2010 translated to an average annual population growth rate (PGR) of 2.23 percent. This is slightly higher than the 2.22 percent annual PGR of the province between the census years 1990 and 2000.

If the average annual PGR recorded at 2.23 percent during the period 2000 to 2010 continues, the population of Pampanga would double in 31 years.

Fifty years ago, the population of Pampanga was only 541,359 persons. This population size is more than one fourth of the population of the province in the 2010 CPH.”

(http://web0.psa.gov.ph/content/pampanga%E2%80%99s-population-reached-20-million-results-2010-census-population-and-housing)

b. Facts about Pampanga

It is known as the Culinary Centre of the Philippines. It is blessed with natural and man-made places and different food choices. The site also is known for different site of trees and farming, that is why the site is good for isolation structure. Few structures are industrial, and a lot vacant lots are still greeneries. The province has remnants of a long and colourful history. Concept of the structure might be applied in the houses booming night life. On the other side of Pampanga, it is the site of world-class resorts, casinos, duty free shopping and gold courses.


c. Climate

The Climate Pampanga has two distinct climates, a rainy season and a dry season. The rainy or wet season normally starts in May and runs through October and the rest of the year is the dry season. The warmest period of the year is from March to April while the coldest period is from December through February of the following year. (http://www.emb.gov.ph/portal/r03/AboutUs/RegionIII/Pampanga.aspx)
d. Geography

The province is a part of the great plain extending from Manila Bay, north of the gulf of Lingayen, Pangasinan. Most of this area is only a few meters above sea level. The mountainous areas are near the Pampanga-Zambales border. These areas are covered by Mountainous Pinatubo Region. The general slope is south and southeast towards Manila bay and Rio Grande. In the northwestern part of the province, however, the land slope is going downward towards Mt. Arayat. Not far from the base is the Pampanga River which channels floodwaters into the wide Candaba Swamp, then to tributaries, rivulets, creeks and finally to Manila Bay. (http://www.emb.gov.ph/portal/r03/AboutUs/RegionIII/Pampanga.aspx)
Magalang, Pampanga was chosen because of its characteristics as rural area. A lot of greeneries and forest are still up there, which is a requirement of a Forensic Psychiatric Hospital. Also, there are few list of medical health centres there, that is why this proposal is chosen to put there. Another input is that, even though it is rural, it is just 30 minute-away from main cities and in provincial jail of Pampanga.

a. Population

<table>
<thead>
<tr>
<th>Barangay</th>
<th>Total Population</th>
<th>Household Population</th>
<th>Number of Households</th>
<th>Barangay</th>
<th>Total Population</th>
<th>Household Population</th>
<th>Number of Households</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>2,014,019</td>
<td>2,010,219</td>
<td>416,271</td>
<td>Total</td>
<td>146,651</td>
<td>149,610</td>
<td>29,011</td>
</tr>
<tr>
<td>Apatit</td>
<td>161,597</td>
<td>161,358</td>
<td>20,787</td>
<td>Mexico</td>
<td>146,651</td>
<td>149,610</td>
<td>29,011</td>
</tr>
<tr>
<td>Arayat</td>
<td>121,348</td>
<td>121,299</td>
<td>24,027</td>
<td>Minalin</td>
<td>44,051</td>
<td>44,051</td>
<td>8,551</td>
</tr>
<tr>
<td>Bacolod</td>
<td>31,503</td>
<td>31,494</td>
<td>7,077</td>
<td>Forac</td>
<td>111,441</td>
<td>111,190</td>
<td>22,894</td>
</tr>
<tr>
<td>Candaba</td>
<td>162,389</td>
<td>162,399</td>
<td>19,808</td>
<td>City of San Fernando</td>
<td>285,912</td>
<td>284,561</td>
<td>60,561</td>
</tr>
<tr>
<td>Florida Blanca</td>
<td>110,648</td>
<td>110,747</td>
<td>24,260</td>
<td>(Capital)</td>
<td>48,311</td>
<td>49,311</td>
<td>9,594</td>
</tr>
<tr>
<td>Guagua</td>
<td>111,189</td>
<td>110,853</td>
<td>23,019</td>
<td>San Luis</td>
<td>48,313</td>
<td>48,315</td>
<td>9,801</td>
</tr>
<tr>
<td>Lupon</td>
<td>160,843</td>
<td>150,989</td>
<td>31,477</td>
<td>San Simon</td>
<td>52,001</td>
<td>52,001</td>
<td>9,693</td>
</tr>
<tr>
<td>Malabaysan</td>
<td>215,310</td>
<td>215,447</td>
<td>47,198</td>
<td>Santa Ana</td>
<td>36,762</td>
<td>38,741</td>
<td>8,177</td>
</tr>
<tr>
<td>Magatelta</td>
<td>70,777</td>
<td>70,777</td>
<td>14,063</td>
<td>Santa Rita</td>
<td>38,062</td>
<td>38,062</td>
<td>7,948</td>
</tr>
<tr>
<td>Magatelta</td>
<td>163,567</td>
<td>162,494</td>
<td>21,384</td>
<td>Santo Tomas</td>
<td>27,264</td>
<td>27,264</td>
<td>5,557</td>
</tr>
</tbody>
</table>

*Excluding Angeles City

Source: National Statistics Office, 2010 Census of Population and Housing
Magalang, Pampanga, has a total population of 103,597, a household population of 102,494 and number of household of 21,384. Barangay included in Magalang, Pampanga is Barangay Santo Tomas, with total population of 38,062, household population of 38,062 and number of household of 7948.

b. Site Description

Common crime happens in the site are rape, hunted from Mt. Arayat and ambush of police and soldiers, which are all potential market of Forensic Psychiatric Hospital. Due to its demographic description of rural and forestry, maximum security is not observed, that is why crime do happen in the area.

(www.cidg.pnp.gov.ph/RCIDU%20PAGE/3RCIDU/accomplishment.htm)

c. Other Photos of the chosen site:
RELATED LAWS AND ORDINANCES

According to the guidelines of the Department of health for the planning and design of hospital and other health facilities (2004), the following laws and ordinances must be followed:


b. P. D. 1185 – Fire Code of the Philippines and Its Implementing Rules and Regulations

c. P. D. 856 – Code on Sanitation of the Philippines and Its Implementing Rules and Regulations

d. B. P. 344 – Accessibility Law and Its Implementing Rules and Regulations

e. R. A. 1378 – National Plumbing Code of the Philippines and Its Implementing Rules and Regulations

f. R. A. 184 – Philippine Electrical Code


l. Guidelines for Construction and Equipment of Hospital and Medical Facilities. American Institute of Architects, Committee on Architecture for Health. 1992


(Source: http://www.doh.gov.ph/system/files/planning_and_design_0.pdf)
CHAPTER 3.3
Site Development Options

SITE ANALYSIS OF MAGALANG, PAMPANGA (FIRST OPTION)
- Site Analysis
- Concept Site Development
SITE ANALYSIS OF BUHANGIN, COMMUNAL ROAD DAVAO (SECOND OPTION)
- Site Analysis
- Concept Site Development

IDEAL BUILDING MASSING OF STRUCTURE FOR BOTH SCHEMES
References

(Source: http://www.doh.gov.ph/system/files/planning_and_design_0.pdf)

(www.cidg.pnp.gov.ph/RCIDU%20PAGE/3RCIDU/accomplishment.htm)

http://www.emb.gov.ph/portal/r03/AboutUs/RegionIII/Pampanga.aspx

http://www.emb.gov.ph/portal/r03/AboutUs/RegionIII/Pampanga.aspx


(http://web0.psa.gov.ph/content/pampanga%E2%80%99s-population-reached-20-million-results-2010-census-
population-and-housing

(http://www.ddb.gov.ph/component/content/article/46-sidebar/65-doh-accredited-rehabilitation-centers

Pampanga%29&utm_content)

(Source: Richard Paradis, P.E., BSCP, Bd. Cert., Noise Control Engineer, 2012)

(Source: WBDG, Sustainable Committee on IEQ, 2012)

(Source: Don Prowler, FAIA, Donald Prowler & Associates, 2012)

(Source: WBDG,Cost-Effective Committee, 2012)

(Source: Department of Health, Philippines)


(source: http://wikimapia.org/607723/National-Center-for-Mental-Health-NCMH)

(Minimum Standard Operational For Psychiatric Hospitals, msdh.ms.gov)


(http://www.law.cornell.edu/cfr/text/42/482.62)

(http://www.maine.gov/dhhs/dlrs/medical_facilities/hospitals/psychiatric.html)

(Source: http://psych.med.nyu.edu/patient-care/inpatient-services/bellevue-hospital/psychiatry-services)

APPENDICES

Paper Notes from Department of Health, Arch. Toots Reymundo

Typewritten Notes from Fiscal Mercedes Pinamora with signature.