



Architectural Design for Unintended-Pregnancy Counseling's Space Using Therapeutic Design

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Abstract

Unintended pregnancy in Thailand at present ranks second in ASEAN (Child and Adolescent Mental Health Rajanagariadra Institute, n.d.). Unintended pregnancy occurs due to many reasons including lack of knowledge of safe sex, lack of understanding of sex, or sexual harassment. The number of unintended pregnancies in Thailand has been increasing. However, there is no space for counseling and discussion for physical and mental rehabilitation for good quality of life of women with unintended pregnancy in Thailand yet. This project, therefore, aims to develop and study space to be suitable for physical and mental rehabilitation according to the space format. The therapeutic design is used in architecture to create a sense of warmth and safety while space is used to support the current situation in Thailand. The study method is called ENO Method. The researcher employed the framework in the part of creating innovation and business to be applied such as 7 Modes, Business Model Canvas, and Sprint process to create the customer-centric mindset with the architectural design process. Architectural programming is created to propose the introduction of design guidelines by visual presentation. The objectives of this research are to study designing architectural projects for unintended pregnancies in Thailand using therapeutic design and to study and design large buildings with therapeutic design. The results revealed that therapeutic design application can encourage physical and mental rehabilitation and also support the space in the aspects of relaxation and appropriate atmosphere for space usage. The use of materials and colors creates a sense of warmth and safety, reduces stress, and gives a comfortable feeling to women with unintended pregnancies. Related project developers or government sectors can adapt the design guidelines in this research to their family planning centers in the future.

Keywords: ENO STUDIO, Family Planning Center, Architectural Design, Therapeutic Design

1. Introduction

According to the information on pregnancy in Thailand in 2013, The number of pregnancies of Thai women aged under 20 ranks second in ASEAN after the Lao People's Democratic Republic. 74 from 1,000 teenagers aged 10-19 get pregnant (Somthep, 2018). Unintended pregnancy in Thailand is 15 percent, exceeding the standard of WHO that is below 10 percent. It affects the future of children and youths in many aspects. While "Ready people, no pregnancy," meaning people who are ready in both seniority and financial status aspects tend to have no children

The Adolescent Pregnancy Prevention and Correction Act 2016, an important section of Article 5, states that adolescents have the right to make their own decisions and to receive information and knowledge. Receiving reproductive health services, getting confidentiality and privacy, receiving equal social welfare and not being discriminated against, and receiving any other rights are the benefits of following this Act that is correct, complete, and sufficient. On the other hand, Article 6 still requires educational institutions to take steps to prevent and resolve the problem of adolescent pregnancy. Sexuality education must be provided to suit the age range of students. Teachers should be developed to be able to teach CSE education, provide counseling on prevention, and solve the problem of teen pregnancy for students. A system of care, support, and protection must also be provided for students or pregnant students to receive an appropriate and continuing education as well as a referral system for receiving reproductive health services and social welfare provision appropriately (Supawanthanakun, 2020). Therefore, the concept of an architectural project is created to support this target group.



The stereotypes of people about hospitals or medical centers, in general, refer to bright white neon lights, the smell of antibiotics, and pale white walls. These characteristics create stress or anxiety in users, staff, and visitors. In the past decade, therapeutic design has emerged, which does not refer to interior decoration for aesthetic reasons but refers to overall environment design as a part of the therapy or healing of patients. It creates a good feeling not only for patients but also their families and caregivers. Atmosphere or environment creation is one of the best care for patients. Architects, interior designers, and researchers shall collaborate to create the work that achieves 4 main components: decreasing stress or anxiety by the environment, presenting positive incentives, providing an area to support related people, and giving a sense of privacy (Kosolkarn, 2019). Therefore, the researcher creates the concept of an architectural project for people with unintended pregnancies using the therapeutic design.

From the result of the research “Soothing spaces and healing places: Is there an ideal counseling room design?” (Mark Pearson, 2012), the most significant themes to emerge are seating, size of the room, use of color, lighting, access to the outside, soundproofing, floor coverings, fresh air, and decoration. Providing clients with a choice of seating (e.g. a mix of upright seats, lounge chairs, and cushions) is considered essential. Seating and its influence are presented as the strongest overall theme. A significant number of participants rate physical comfort for clients and the counselor as an absolute necessity. Another major theme to emerge is the size of the counseling room. Counseling rooms that are too small created a “claustrophobic feeling.” A room that seems too large is perceived to create “insecurity.” Ease of access to the outdoors, or an ‘outside area’ is considered supportive. The participants feel that access to the outdoors, or space such as a garden or natural setting, is important or desirable. These can be applied with architectural design via various components, both interior and exterior, from natural clerestories, selected colors, art displaying, fragrance, furniture arrangement, surfaces and materials, movement pattern within the area, and interior and exterior green area.

2. Objectives

- 1) To study the designing of an architectural project for unintended pregnancies in Thailand using therapeutic design
- 2) To study and design large buildings using therapeutic design

3. Materials and Methods

From Figure 1, The process called “ENO Method” (Bunyavipakul, 2019) was used. The researcher employed the framework in the part of creating innovation and business to be applied such as 7 Modes, Business Model Canvas, and Sprint process to create the customer-centric mindset with the architectural design process. The process is as follows:

3.1 Gather and analyze information related to the project such as case studies and articles

3.2 Find the background of the topic with the 7 Modes method (Kumar, 2014). The process is as follows: current situation study, user identification; problem-solving, area context finding, design concept creation, interesting project proposal, and preference in the project category.

3.3 Study behaviors of the users and value of the project using Business Model Canvas (Strategyzer, 2018)

3.4 Create concepts and details of the project. Divide the functions of the project area proportionately.

3.5 Conclude the overall image of the project, suggest the design guidelines, and propose the design results.

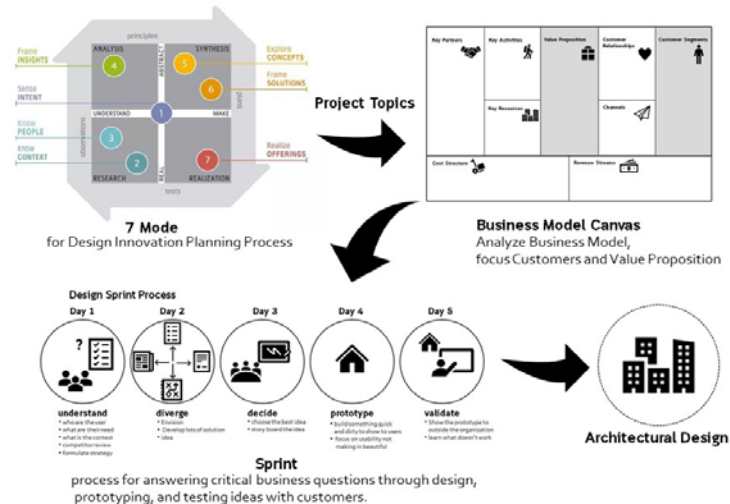


Figure 1 ENO Studio Method

4. Results and Discussion

According to the survey from statistics and data, the users of the project can be divided into groups as follows: the primary user groups were teenagers aged 10-19 with unintended pregnancies and women with unintended pregnancies from being raped and were living under sexual harassment circumstances and the secondary user group was the families of the women with unintended pregnancies.

On problem solving and methods, first, the therapeutic design that concerns healing mental and physical conditions of women with an unintended pregnancy is used. Second, warm and safe feelings are created by using interior and exterior colors and materials.

On the location, the border of the project location is analyzed from the areas having relation with the current circumstances with higher rates of unintended pregnancy and sexual violence situations than other areas. Therefore, the Bangkok area is selected due to high rates of unintended pregnancy and sexual violence situations. It is found that the delivery rate of women aged under 20 in Bangkok is 38.85 per 1,000 women in the same category.

The location of the project is selected from the areas with facilities including transportation, medical services, related infirmaries with the ability to support women with unintended pregnancy, and related foundation. The project is located on Rama VI Road, Thung Phayathai Sub-district, Ratchathewi District, Bangkok. The land-use plan is the blue area which is the area for government institutions, public utilities, and public assistance. The land is 7,400 square meters in size.



Figure 2 Space usage of the project according to the color chart and setting back according to the Ministerial Regulations No. 55 on Buildings (B.E. 2543)










Key Partners  Key Partners are Thai Health Promotion Foundation, Planned Parenthood Association of Thailand, Ministry of Social Development and Human Security, Ministry of Public Health, National Institute for Child and Family Development of Mahidol University, Ministry of Education, Ministry of Labour, and Ministry of Interior.	Key Activities  Key Activities include knowledge and counseling areas, temporary accommodations, reception and service areas, activity areas (parks, exercise areas). Key Resources  Key resources refer to personnel of the project, customer service center, land, capital (wage and construction fee).	Value Proposition  Value propositions of the project are making the users feel comfortable, keeping confidentiality, and provide physical and mental security.	Customer Relationships  Customer relationships cover counseling; physical and mental rehabilitation; creating channels, hotline, websites, Facebook, Channels  channels, hotline, websites, Facebook,	Customer Segments  Customer segment refers to women with unintended pregnancy aged 10 - 19 and women with unintended pregnancy from being raped and sexual harassed.
Cost Structure  Cost structure includes building maintenance fee and construction fee.	Revenue Streams  Revenue, and Streams; and sponsorship from government and The Planned Parenthood Association of Thailand.			

Figure 3 Study of user behaviors and value of the project

From Figure 3, Business Model Canvas was used as the framework for experiment and feasibility study. First, the customer segment refers to women with unintended pregnancies aged 10 -19 and women with unintended pregnancies from being raped and sexually harassed. Value propositions of the project are making the users feel comfortable, keeping confidentiality, and provide physical and mental security. Customer relationships cover counseling, physical and mental rehabilitation, creating channels, hotlines, websites, Facebook, Revenue, and Streams, and sponsorship from the government and The Planned Parenthood Association of Thailand. Key Partners are Thai Health Promotion Foundation, Planned Parenthood Association of Thailand, Ministry of Social Development and Human Security, Ministry of Public Health, National Institute for Child and Family Development of Mahidol University, Ministry of Education, Ministry of Labour, and Ministry of Interior. Key Activities include knowledge and counseling areas, temporary accommodations, reception and service areas, activity areas (parks, exercise areas). Key resources



refer to personnel of the project, customer service center, land, capital (wage and construction fee). Cost structure includes building maintenance fee and construction fee.

Regarding the Design sprint (Table 1), the research had designed a sprint calendar to make it appropriate for use with architecture since the question of the project concerns the large building. Even though the principle of the sprint is to make it quick in 5 days, the researchers can change without making the day that needs to close to the next day. They can have a duration gap in the day to give the team time for designing.

Table 1 Design Sprint Calendar

Day	Activity	Result
Day 1 Understand	Customer Persona, Urban Development, Master Plan, Project Development Environmentally Friendly System Established	who are the users, what are their needs what is the context, competitor review, formulate strategy
Day 2 Diverge	Business Model Canvas, Value Proposition Canvas, Journey, Component Experience, Programming, Zoning Analysis, Architectural Diagram	Envision, Develop lots of solution, idea
Day 3 Decide	Pinup, Discuss, Storyboard Idea,	choose the best idea, storyboard the idea
Day 4 Prototype	SKD sketch design idea, Combine Idea	build something quick and dirty to show to users, focus on usability not making it beautiful
Day 5 Validate	Pitching	Show the prototype to outside the organization, learn what doesn't work

Considering the components of the project, from the structure of components in the “Family Planning Center for Women with Unintended Pregnancy using Therapeutic Design” project, various functional areas are created to meet the effective usage for women with unintended pregnancy such as rehabilitation areas and activity areas. Each component of the project is connected to other components including personnel and facilities. The components of the project can be divided as shown in Table 2.

Table 2 Components and area size of the building component

Building Component	Area Size (Percent)	Area Size (Square meter)
Knowledge and counseling area	11	792.35
Activity area	7.5	540.25
Accommodation area	35.5	2,557.15
Reception and service area	6.5	468.20
Project administration area	2.5	28.80
Building administration area	9	648.30
Parking lot	28	2,016.9

Figure 4 shows zoning in harmony with adjacent contexts. The entrance is linked to the reception and service area for ease of access to other functional areas. The entrance and the exit of the project shall give a sense of privacy and safety to the users. The reception and service area is divided into other areas of the project. Each floor has different levels of privacy of area accessibility. For example, floors 2 and 3 have more privacy since they are accommodation areas while the first floor where knowledge and counseling areas and also activity areas are situated on connects 2 sides of the building so both primary and secondary users can



access the areas easily. The activities focus on health and relaxation parks following the therapeutic design principles.

Therefore, therapeutic design application in architectural design results in various areas of the project for women with unintended pregnancy with a concern of privacy and safety for area accessibility. The concept focuses on designing an atmosphere to be a part of the therapy or healing of women with unintended pregnancy and also create a pleasurable atmosphere or environment in the project as well. As shown in Figure 5 -6, the common area is designed so the users can see the surroundings, and natural light is brought into the area via open spaces. The use of materials and colors on the surfaces of the building creates warm and safe feelings which differentiate this project from other general family planning centers or infirmaries for women with unintended pregnancy. Figure 7 shows interior and exterior green areas, creating a relationship between good livelihood, good health, and nature which is one of the important principles of therapeutic design.



Figure 4 Area zoning of the project



Figure 5 The first-floor plan shows green areas in the open space at the center of the building and in the surrounding areas



Figure 6 Section 1 shows the activity park in the court at the center of the building and the garden in the building



Figure 7 The landscape of the activity park which is the green area in the court at the center of the building

Therapeutic design is applied to the entrance and the exit of the project and interior and exterior functional space connection. The 4 main components are to reduce stress or anxiety by the environment, to offer incentives via green areas, to provide a supporting area for related user groups, and to give a sense of privacy. These components can be designed into the various interior and exterior elements such as natural clerestories, selected colors, art displaying, fragrance, furniture arrangement, surfaces and materials, movement pattern within the area, and interior and exterior green areas. The relationship between good livelihood, good health, and nature is one of the important principles of therapeutic design including physical and mental rehabilitation.

Figures 8 and 9 show that natural light is brought into the building via clerestories and open spaces in the building. Mirrors are predominantly used as the clerestories of the building to give a bright feeling and reduce cramped feeling. Laths are used in private areas to provide senses of privacy, safety, and warmth while the users can see the landscape outside the building and the excessive sunlight is blocked as well.

To give a sense of warmth and safety, light, unflashy, and earth tone colors are primarily used. From the study of colors in psychology, brown and yellow colors make people feel safe, warm, and comfortable. Brown and light yellow colors are therefore applied with the finishing in the project since they represent the relationship in families. Figures 10-13 show the design of various areas for women with unintended pregnancy using therapeutic design principles.



Figure 8 Section 2 shows the amount of natural light brought into the building through open spaces and clerestories of the building



Figure 9 Landscape of group counseling for the families of women with unintended pregnancy 1, showing the amount of light brought into the building via clerestories and laths which are the sunshades of the building



Figure 10 Perspective of accommodations in the project



Figure 11 Perspective of the reception area in the project



Figure 12 Perspective of counseling area for women with unintended pregnancy by therapists
(Colors giving a calm and comfortable feelings are used.)

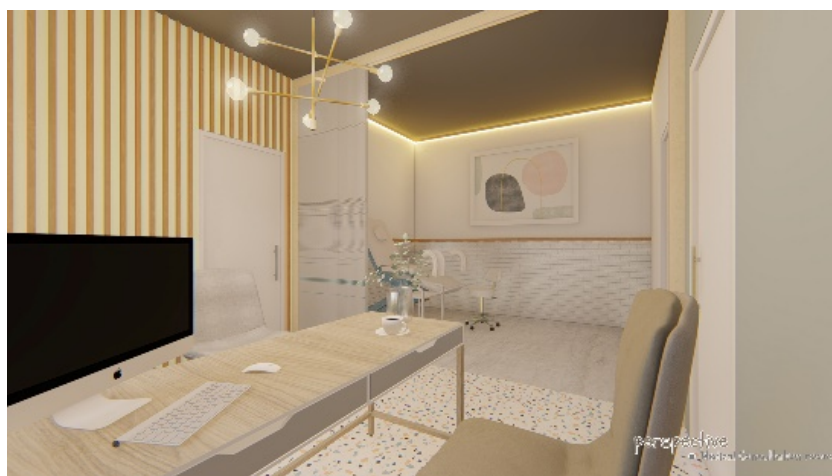


Figure 13 Perspective of counseling area for women with unintended pregnancy by doctors



After the architectural prototype is completed, the researcher has proposed the prototype and collect comments from experts in online conference form and has published the research to the public on the website of the Faculty of Architecture, Rangsit University for public hearing.

5. Conclusion

From the results of the project design, therapeutic design helps to connect various areas of the building so the areas support each other and user activities. The therapeutic design also creates activity areas that help the users to rehabilitate mentally and physically and provide relaxation areas and a proper atmosphere according to the usage of the project. The use of materials and colors to create a sense of warmth and safety helps to reduce stress in the counseling and knowledge areas since the selected color tones can provide a comfortable feeling to the area users meet the design experiment objectives with therapeutic design, especially for large buildings. 5 professional architects have given 4.58 points out of 5 points, which is a good score. Further comments from social networks are also gathered for further project development in the future.

Lastly, the researcher hopes that this project will be a guideline for organizations that are interested in adapting the therapeutic design to their projects in the future to encourage the strength of the human mind.

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