INTEGRATION OF ARTISTIC PERFORMANCE SPACES IN URBAN FABRIC

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INTEGRATION OF ARTISTIC PERFORMANCE SPACES IN URBAN FABRIC

By

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ABSTRACT

Theatre had been an important spaces in cities since 2,500 years back, even until todays. In the past theatre used for both popular and religious purposes .When comes to modern times artistic performance space is often used as a source of catalyst for downtown renewal efforts. Therefore the intention is to study the aspects of integration of artistic performance spaces to the local community in downtown urban centers. Due to tangible and intangible aspects in this research, qualitative method will be use, such as selection of case studies; informant interview; field observation; 2D modeling; participant observation and data triangulation. From the study, there are elements of artistic performance centers that influence the factors of success, i.e. architectural typology and building form; specification and materials; space usage and functions and accessibility and connectivity. This study discusses important aspects of its integration to urban development and suggest elements that can be improved in artistic performance space in Malaysia incorporating local unique diverse culture elements.

ACKNOWLEDGEMENTS

My foremost gratitude goes to my lecturer, Dr Lim Poh Im, who was instrumental in encouraging me to research on this topic about Integration of Artistic Performance Spaces in Urban Fabric. She had been given me the support via continuous guidance and moral support throughout this journey. I appreciate his constructive pointers on my work, and I am thankful for her being accommodative and for acceding to my requests to the best of her abilities.

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APPROVAL SHEET

This dissertation entitled "**INTEGRATION OF ARTISTIC PERORMANCE SPACES IN URBAN FABRIC"** was prepared by ONG FOO HOWE and submitted as partial fulfillment of the requirements for the degree of Master of Architecture at Universiti Tunku Abdul Rahman.

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Date: 20 September 2017

SUBMISSION OF FINAL YEAR PROJECT /DISSERTATION/THESIS

It is hereby certified that **Ong Foo Howe** (ID No: ***1605677***) has completed this dissertation entitled "Integration of Artistic Performance Spaces in Urban Fabric" under the supervision of Dr. Lim Poh Im from the Department of Architecture and Sustainable Design, Lee Kong Chian Faculty of Engineering and Sciences .

I understand that University will upload softcopy of my dissertation in pdf format into UTAR Institutional Repository, which may be made accessible to UTAR community and public.

Yours truly,

_____

(*Ong Foo Howe*)

DECLARATION

I hereby declare that the dissertation is based on my original work except for quotations and citations which have been duly acknowledged. I also declare that it has not been previously or concurrently submitted for any other degree at UTAR or other institutions.

Name: Ong Foo Howe
Student ID: 1605677
Date: 20 September 2017

TABLE OF CONTENT

LIST OF FIGURES

CHAPTER 1.0

INTRODUCTION

1.1 Introduction

Whether it is oriental or western histories, artistic performance are events that bring excitements and pleasure for the peoples. Through time, these activities and the associated spaces were integrated into urban rejuvenation strategies.

Artistic performance in Malaysia is young, both government and private organisation existed to play its role to promote the artistic performance to the public and also international level. Therefore, many theatre existed to cater for the artistic performance and to provide facilities to the public. Some even stand to be a landmark or iconic symbol.

In this research, qualitative method will be use. To answers the possible research question of success and failure of performance space, and important aspects of its integration to urban development. Nevertheless, this will then help in search for the possible elements that shape the artistic performance spaces, both external and internal and discover the function of

spaces that suit and reflect the spirit and unique features of Malaysia performance space.

1.2 Issue Statement

Artistic performance space had been developed and examined since 2500-years ago. Nevertheless there is still space for improvement in current contemporary architecture. But, we need to be careful not to inject modern thinking into design end up to create a standard theatres that had no different than just a paper architecture. Improvement can still be discovered and make on present Istana Budaya that derive with external design of Sirih Junjung, and internal layout of Kampung Concept layout. Both symbolise Malaysia Culture performance space in term of architecture building. This shown the existing gap between local artistic performance and the performance space that have no integration. On how the space can be shaped to suit the need or Malaysian artistic culture, which is not only create as a symbol but also as a features that brings the Malaysian artistic performance spirit into live.

1.3 Research Question

Based on the issues above, the research questions are:

1) What are the factors that contribute to the success and failure of performance space?
2) Why is it important to integrate artistic performance spaces in urban settings?
3) What can be done to improve the design of the artistic performance space into self- sustaining iconic landmark building?
4) How artistic performance spirit can incorporate local unique cultural elements in its design?

1.4 Objective

1) To analyse elements of artistic performance centres in term of:
    i. Architectural typology and building form
    ii. Specification and materials
    iii. Space usage and functions
    iv. Accessibility and connectivity
2) To analyse the factors of success and failure of artistic performance spaces.
3) To study aspects of integration of artistic performance spaces to the local community in downtown urban centres.
4) To discuss how artistic performance centre in Malaysia can incorporate local unique diverse cultures elements in its design.

CHAPTER 2.0

LITERATURE REVIEW

2.1 Artistic Performance Space throughout History

The evolvement and historical development of artistic performance started as a spiritual belief in early period in both oriental and western histories. In western society, artistic performance can be categorised into dance, music, drama, and theatre. Western theatrical tradition was firmly based on existing drama texts, hence during the middle age, dance and theatre were separated from religion. While in oriental world, especially Asian cultures, both dance and theatre are mostly related to religion and belief.

In ancient China, artistic performances were about storytelling and encompasses many impressive forms. This is similar to other countries in Asia, where dance and music are inseparable, such as most of the traditional performing art combine drama, dance and music into either dance-like, stylised movements that frequently interwoven with text. While in western world there is a clear difference from text-dominated as “spoken theatre” with music-dominated “opera” and dance-dominated “ballet[1]”. Thus emerged the

[1] http://www.xip.fi/atd/introduction/introduction.html

concept of "baixi [2] " in Chinese characters, which means "A hundred entertainment", with variety of shows featuring, mimes, jugglers, magicians, acrobats, song, musical recitals, dance, opera and martial art.

On the other hand, artistic performance play an important role in maintain the country peace. During Zhao Dynasty, artistic performance such as music was used as a source of power to stabilise the social understanding, due to dissatisfaction of power and hierarchy differences among empires or between the empire and public. Stated in one of the study did by Pruijt, policymakers tended to recognize the squatting artists' workspaces as venues for cultural activities and therefore as elements extremely valuable for the city. This led to connections between the squatter scenes and the local administration (Pruijt, 2013). Therefore, artistic performance were not only created as entertainment for leisure, hence it formed an integrity system for the society to follow, and helped to accommodate the elements of structure instability.

In Hellinistic Age, artistic performance space was among some of the important spaces in cities of Prine, Peramon, Alexandria, Dura-Europos, Delos, and Rhodes (Ching, F, 2011). Artistic performance spaces from Theatre of Dionysus in Athens, where the original shape was hard to be defined due to changes and rebuilt processes taken place. The Theatre of Dionysus, resting on

[2] http://www.xip.fi/atd/china/the-early-history-of-chinese-theatre.html

the slope of the Pergamon Mountain, with spectacular ten thousand spectators' outdoor auditorium, formed the nature as contour of the west facing slope.

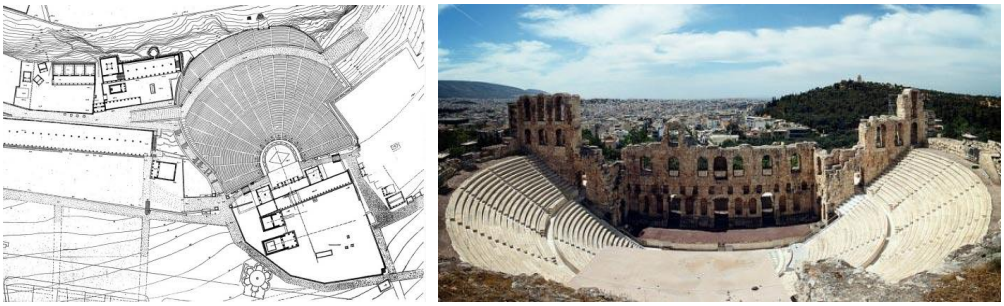

Figure 1: Theatre of Dionysus Plan(Left) and Image(Right). Image downloaded from http://www.diazoma.gr/en/theaters/theatre-of-dionysos/ in September 2016

Theatre were a common element in Greek and Roman cities ,beside curved into rock the Colosseum in Rome was a first freestanding building design that sits on a shallow valley and between three hills, visible from all directions as a landmark of the city. The Colosseum could hold fifty thousand spectators, as a venue of Gladiatorial Combat and exhibition spaces before ended as place for public punishment.

Figure 2: Colosseum Rome. Image downloaded from http://skiptheline.info/take-the-colosseum-underground-and-third-ring-tour/ in September 2016

Almost all the Roman cities had a theatre used for both popular and religious purposes, built without the use of earthworks, hence the auditorium was covered with awnings as shelter from rain and sunlight. Therefore, in Roman theatre is usually three stories high, with stage (orchestra) and seating (auditorium). Compared to Greek theatre, the Roman had a steeper seating slope created for acoustic reason.

2.2 Artistic Performance Spaces in Modern times

In modern times artistic performance space is often used as a source of catalyst for downtown renewal efforts, which helps to encourage growth of nearby shops and retails, as well as rejuvenating local communities and cultures. Most of the performance events happen during the night time, with the presence of retail and shops, which created a lively town with multifunctional activities. Hence, it tends to become the heart of culture that draw attention to town. One example is Lincoln Centre[3], New York, which had transformed the 16.3 acres at upper west of Manhattan planning. In return, the adjacent properties and their commercial functions contributes to the long-term success of the artistic performance venue.

[3] https://www.google.com/culturalinstitute/beta/exhibit/BgICTK2US70oKA

Figure 3: Surrounding Lincoln Centre on 1969 (Left) and Today (Right). Image downloaded from https://www.6sqft.com/lincoln-center-from-dutch-enclave-and-notorious-san-juan-hill-to-thriving-cultural-center/ in September 2016

Aside from Lincoln Centre, New York, another example would be Kauffman Centre for the performing arts, Kansas City, Missouri. The centre raise the culture profile of the city as an iconic building that bring culture reputation to international level. Just like Cosmos Hall, Tochigi in Japanese was also create to be a culture environment that remembered as the connection with Buddhist priest of the early Heian era, Jikaku Daishi Ennin[4]. The hall fosters the Japanese culture by planting the seed of culture to the Tochigi prefecture.

Figure 4: Kauffman Centre. Image downloaded from http://bachariasoloists.com/2011/09/18/kauffman-center-for-performing-arts-debut/ in September 2016

[4] http://templesofjapan.com/Jikaku-Daishi.html

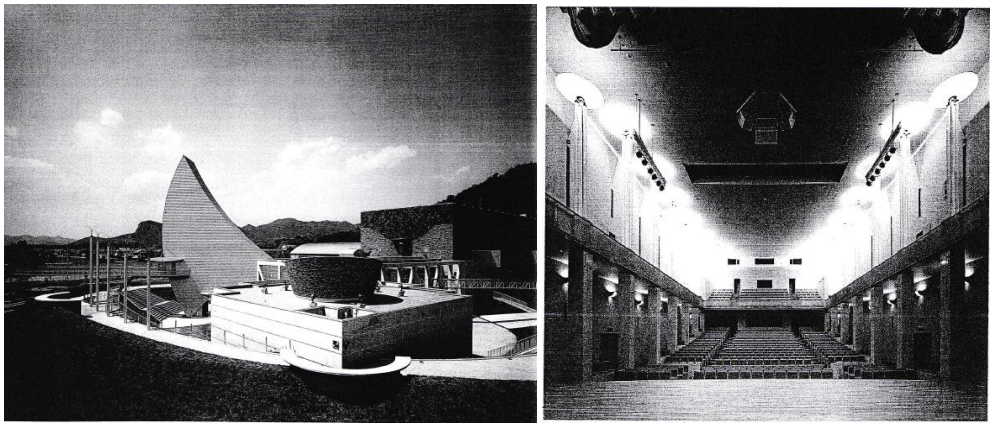

Figure 5: Cosmos Hall. Source: Theaters and Halls New Concepts in Architecture and Design

Other artistic performance spaces that integrated with other function of spaces include Meijiza Theatre, Japan. It has a main core of the traditional Tokyo downtown culture integrated together with office complex. The same with Yokosuka Art Theatre which is part of urban complex comprising hotel, shop, office, collective housing and etc, The project had redeveloped the neighbourhood of Shioiri Station. Both has similar ideas of integration of spaces vertically and centralised development. Such integration mostly happen in big cities, where the land is limited or expensive for stand-alone artistic performance space to be built.

Figure 6: Meijiza Theatre. Image downloaded from http://www.gotokyo.org/en/kanko/chuo/spot/s_541.html in September 2016

Figure 7: Yokosuka Art Theatre. Source: Theaters and Halls New Concepts in Architecture and Design

It can be said that, artistic performance program is not the factors that select the viewer by social level, age, income groups, or by colour and races. Rather it is an architectural place or context that integrated within the place – within a complex – culture or non-culture venue, for the community.

2.3 Architecture Typology and Building Form

As architecture typology of artistic performance space started to evolve in time and grown of artistic performance talent, it is important to first understand the basic principle in stage sightline typology and design proportion. This influence not only for the quality of architecture space, but bring the spectator a good and clean sightline for the show. Refer to figure 12 trace back to the traditional auditorium proportions, where the distance from the last row seat to the proscenium line should be 24m in maximum for playhouse while 32m in maximum for opera. As for playhouse performance, it involves with facial expression, and opera performance stress on movement. Hence, the width of proscenium can be determined from the width of

auditorium set as shown in figure 13. In this case, 13m proscenium width goes to playhouse and 17m goes to opera, which help to set a clear sightline for spectators sitting at one side.

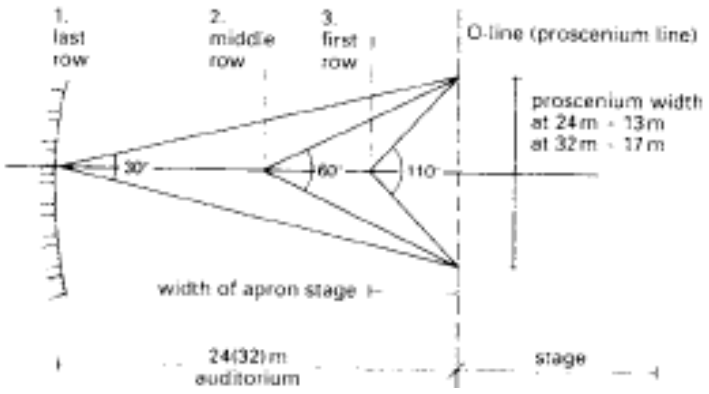

Figure 8: Proportions of the traditional auditorium (view). Source: Neufert architects' data *(3rd ed.)*

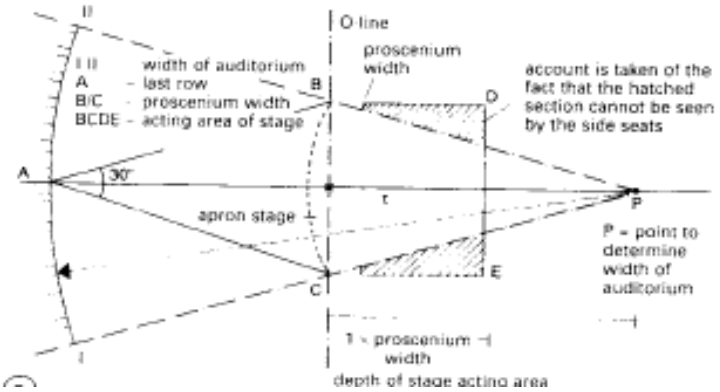

Figure 9: Auditorium Width. Source: Neufert architects' data *(3rd ed.)*

Comfortable proportion determines the good acoustic quality (Which will be further discuss in Chapter 4.2.2 Acoustic) for classical theatre in 18th and 19th centuries. Based on the special rules of proportion shown in figure 14 designed for the grand theatre in Bordeaux and figure 15 the Teatro alla Scala in Milan.

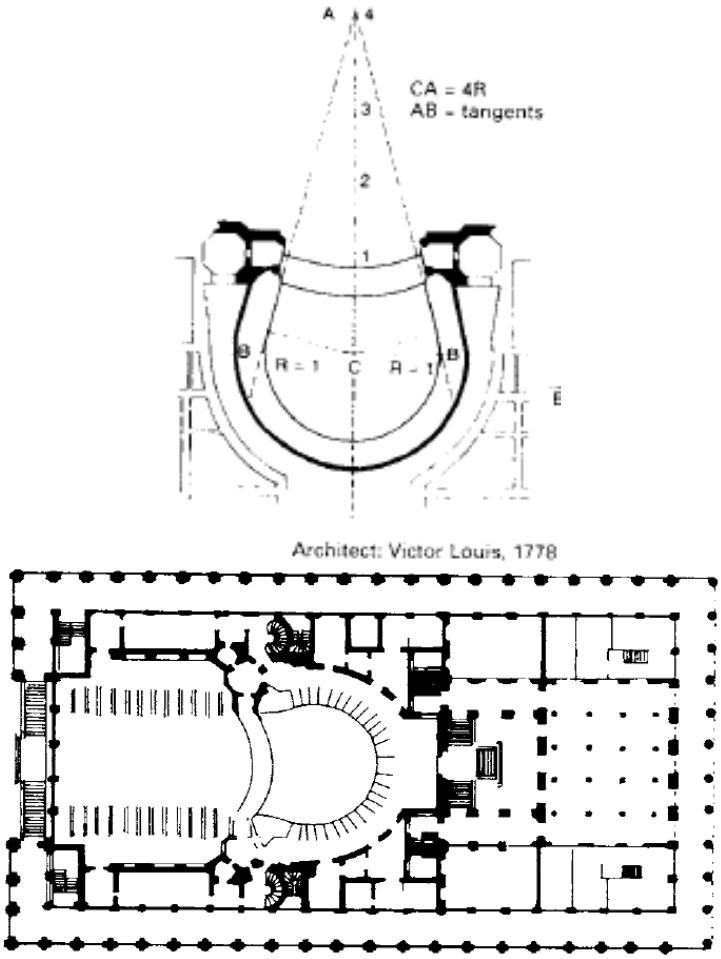

Figure 10: Design of the contours of the auditorium in the Grand Theatre in Bordeaux by Victor Louis. Source: Neufert architects' data *(3rd ed.)*

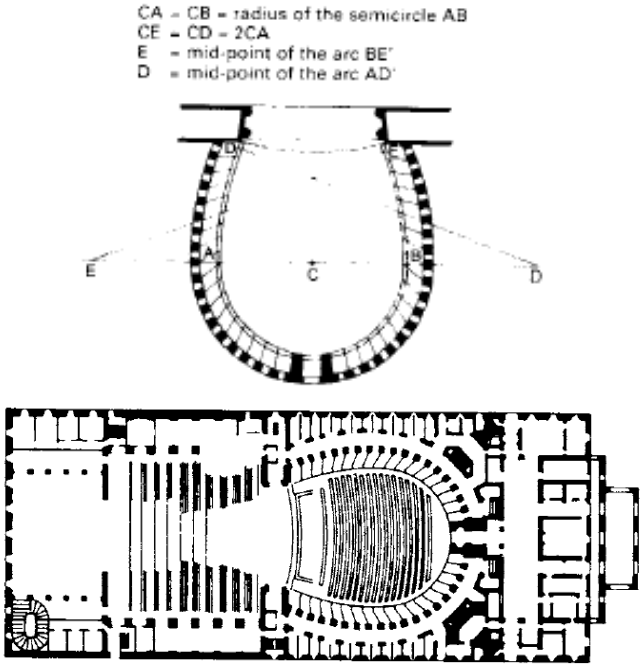

Figure 11: Design of the curve of the auditorium in the Teatro alla Scale in Milan by Piermarini. Source: Neufert architects' data *(3rd ed.)*

Elevation of seat (Gradient) area determines the integration or mutual perception among the spectator and performance, besides allowing the clear sight line for the spectator. To obtain the integrated artistic performance space, it depends on the well integrate of seating gaps and shape of stage.

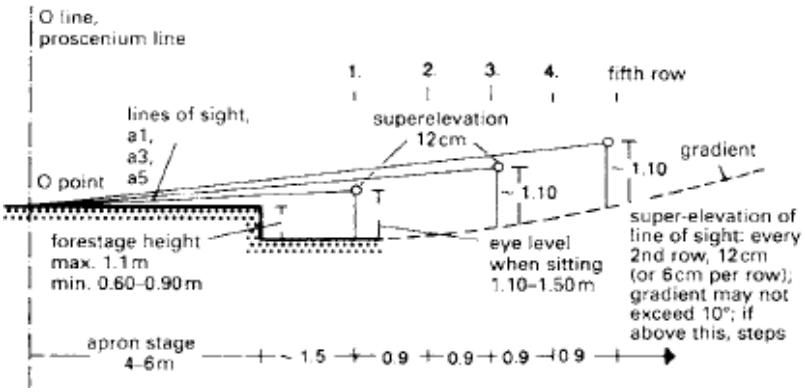

Figure 12: Super elevation of seating (Gadient). Source: Neufert architects' data *(3rd ed.)*

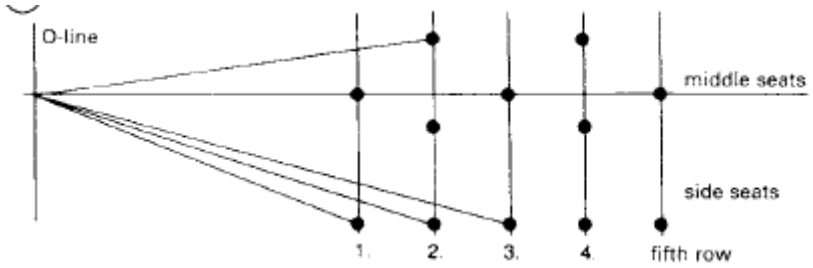

Figure 13: The offsetting of seats in a row is achieved by different seat width. Source: Neufert architects' data *(3rd ed.)*

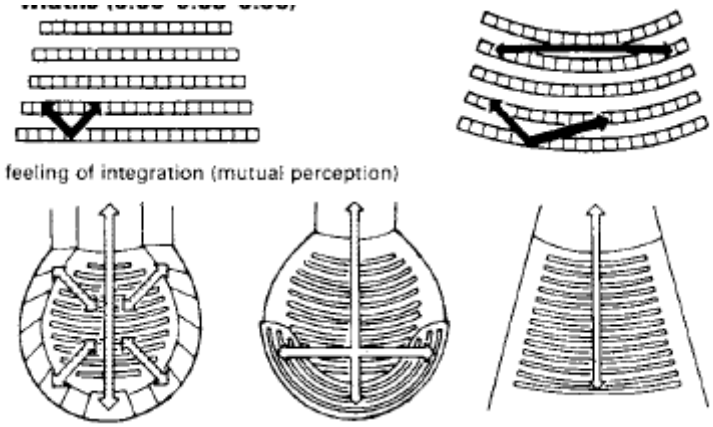

Figure 14: Contact relationships between public and stage. Source: Neufert architects' data *(3rd ed.)*

In term of topology of the auditorium design can be in many form as depend on the function of the artistic performance requirements. As each format of auditorium design had its own historical development, use, opportunities and limitations.

Common types of auditorium that can be found todays is Proscenium type theatre, example Wexford Opera House. Where the stage house and audience are separate but link within the same volume of auditorium box, while the proscenium stage were design like an enlarged and elaborated picture frame. This types most commonly designed to cater for different performance that required the widths to height relationship for the opening, with scenic backdrop can be suspend on the backstage.

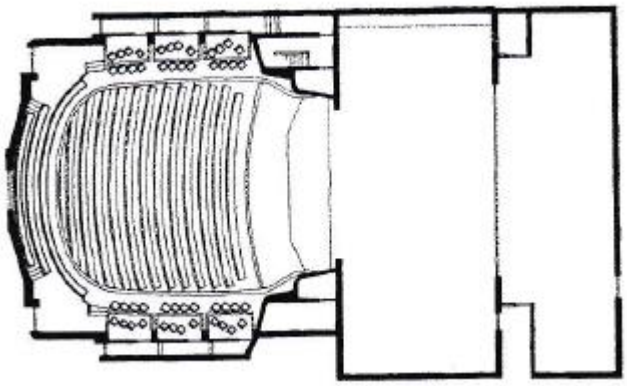

Figure 15: Wexford Opera House Proscenium Theatre. Source: Theatre buildings a design guide

End stage format, created an environment where actors and audience share the same physical space. Compare to proscenium format there is

similarities in term of seating and stage layout, but it created a different atmosphere. In end stage format, all four corners of the stage can be visible and suit to contemporary dance and particularly those supported with multimedia projection. This form of stage design end on directly in front of audience, and in some theatre stage without stages riser. One of the example of end stage will be Northern Stage, Newcastle upon Tyne, UK.

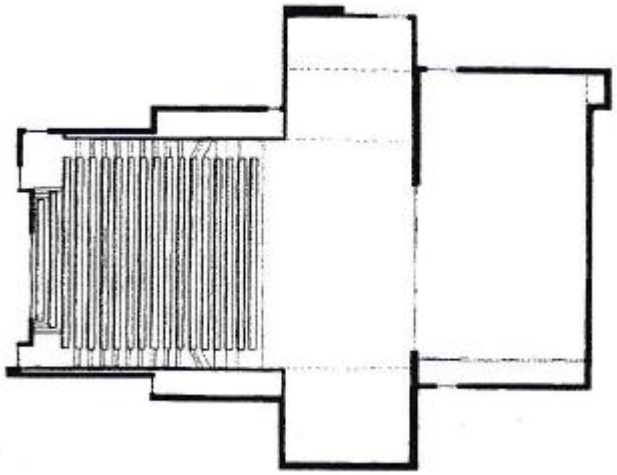

Figure 16: Northern End-Stage of Newcastle. Source: Theatre buildings a design guide

Corner stage - 90° Arc, such as the Oliver Auditorium at the national theatre, London. With the 90° arc arrangement between an end stage and an amphitheatre, which enhanced the audience vision towards the actors that against the stage walls or scenic backdrop. The stage composition are more clearly three-dimensional, which brings forward the performance closer to audience. For larger capacities audience seating, side boxes and balcony seating can use, but somehow it will reduce its focus on the stage.

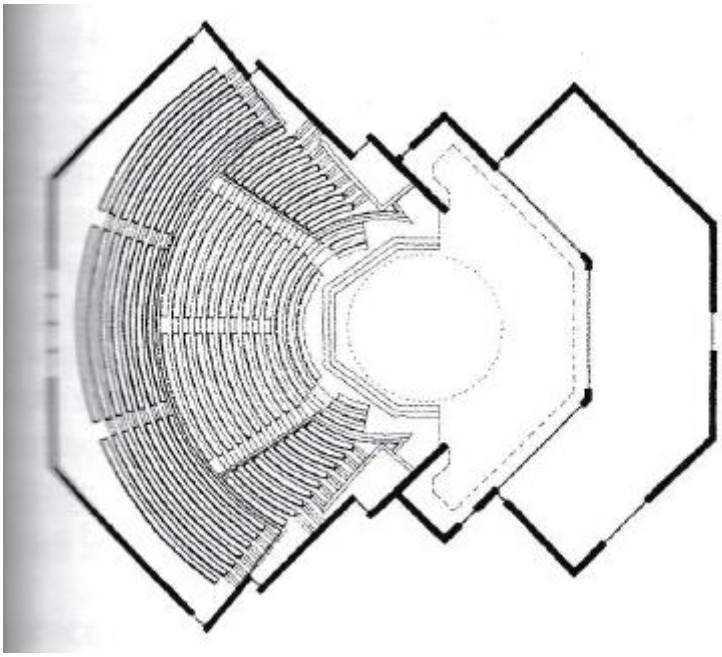

Figure 17: 90 Degree Arc Oliver Auditorium of National Theatre, London. Source: Theatre buildings a design guide

The wide fan format, such as the Barbican Theatre, London which the audience seating surrounded the stage in 135° that brings forward the actor 'point of command'. Where actor can attracting the audience from the centre of the stage without turning their head.

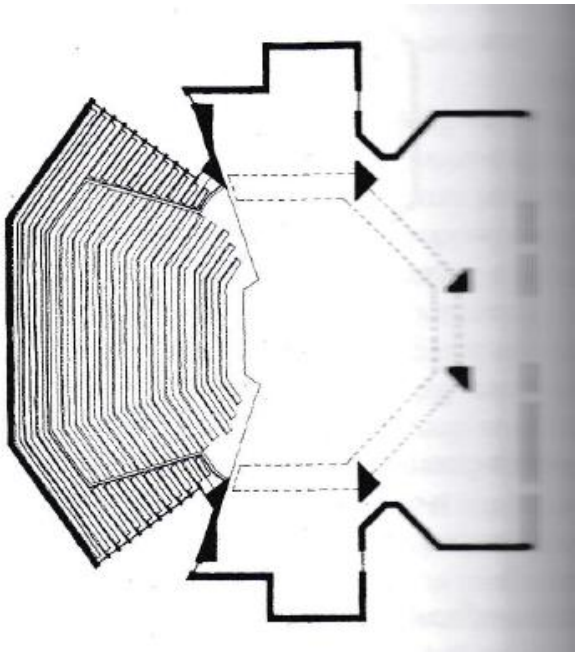

Figure 18: Wide Fan Format - Barbican Theatre, London. Source: Theatre buildings a design guide

Amphitheatres format, example Greek amphitheatres that encircle the stage to 220°, merge with the landscape and open into the outdoor surrounding. This format are still common use for external performance spaces, with amphitheatre as a term to indicate for an outdoor venue. This type of format geometrically focused on the semi-circular orchestra and with a linear wall surrounded at end of the seating.

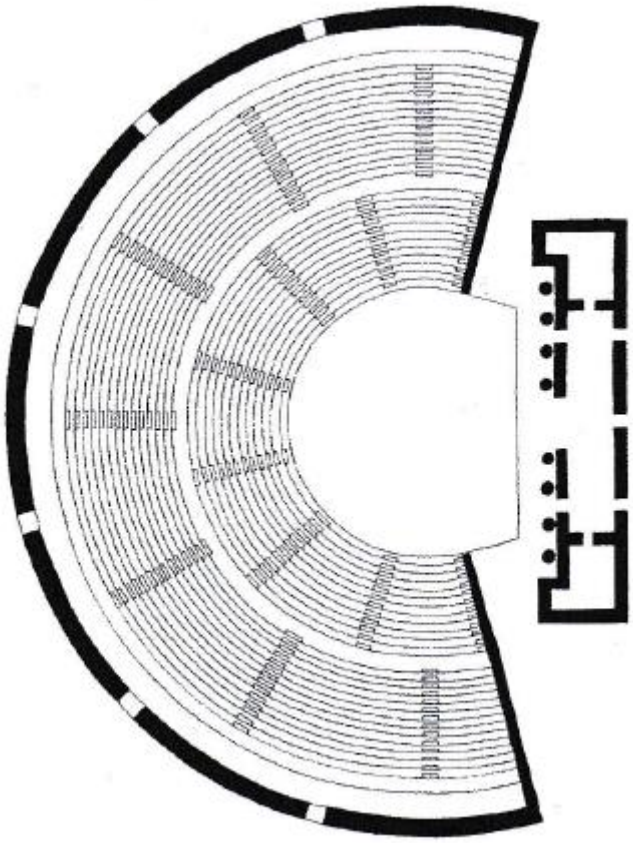

Figure 19: Amphitheatre format of Greek .Source: Theatre buildings a design guide

Thrust stages design distribute the audience into 3 sides and each group provide a backdrop to the opposite group. Designed that the performance enter from the body of the audience seating area, this allow the audience experience the performance from different perspectives. Therefore with 270° envelopment around the stage that created a three-dimensional style

that ensure no site misses the performance action. One example of thrust stages is the crucible theatre, Sheffield.

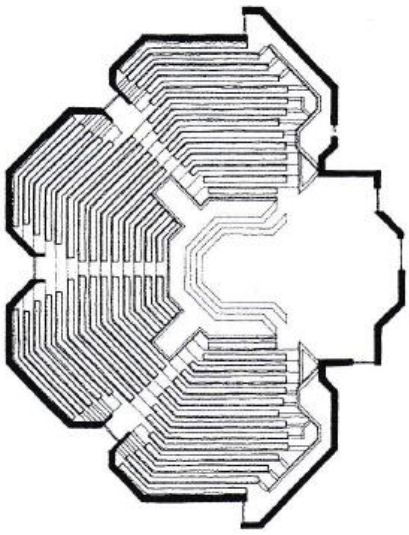

Figure 20: Thrust stage of Crucible theatre, Sheffield. Source: Theatre buildings a design guide

In the round format or arena format, the audience is surrounded the stage in 360° as island. Without any scenic backdrop and minimum obstruction by the props and setting, to allow clean vision from any angle. Where the performance entrance located on the body of the audience seating area. One of the successful example of this format arrangement, the royal exchange theatre, Manchester.

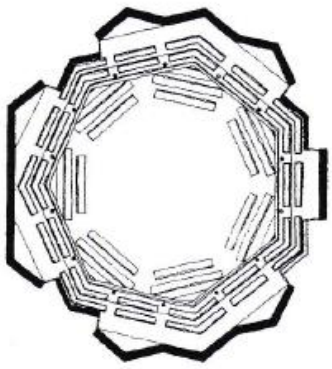

Figure 21: Royal Exchange Arena Theatre, Manchester. .Source: Theatre buildings a design guide

Courtyard theatre or play house are one of its kind of the English Renaissance that held for the Shakespeare storytelling, with compare, multi-levelled and open air theatre. Where the stage thrust out into the auditorium, so that the audiences in the space are closer to the action. Commonly in classical type of this stage had a strong sense of audience participation and get involve with its live event. Example the Cottesloe at the national theatre London and the swan, Royal Shakespeare company, Stratford-upon-avon,UK.

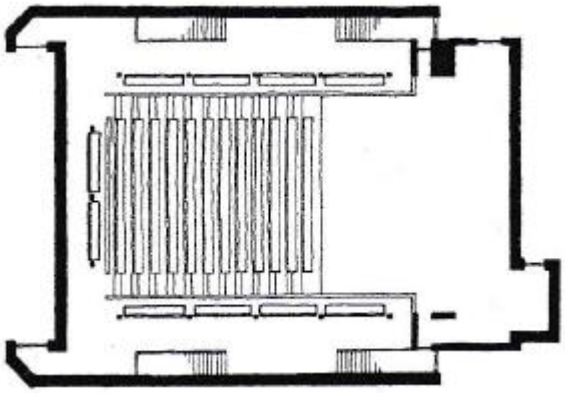

Figure 22: Cottesloe National Theatre of London. Source: Theatre buildings a design guide

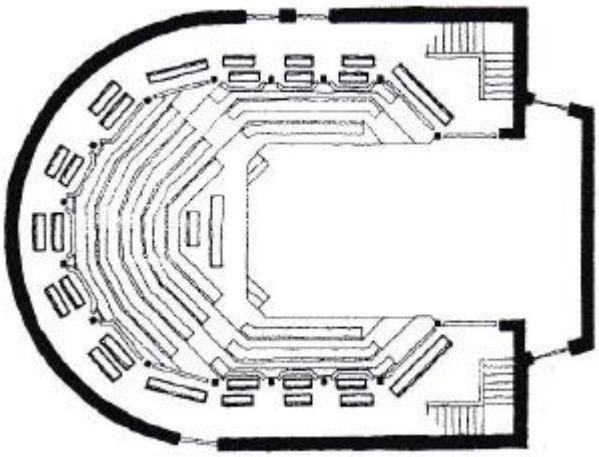

Figure 23: Swan, Stratford. Source: Theatre buildings a design guide

Lastly traverse format stage, which is uncommon and rare been found. As the stage is linear and located at the centre of the room, where audience seating are arranged equal on either side. Therefore audience become the backdrop for other side of the audience, with minimum scenic potential. One example of traverse format stage will be the national theatre in Mannheim. Somehow the seating arrangement are not fix on place, for small to medium scale venue.

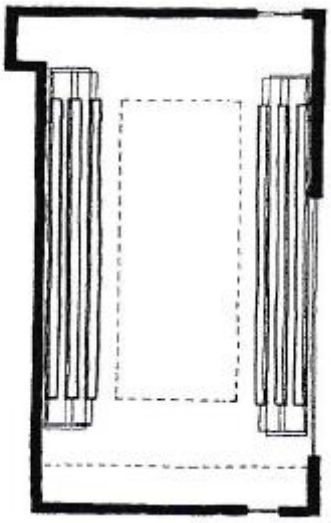

Figure 24: Mannheim National Theatre. Source: Theatre buildings a design guide

2.4 Specification and Materials

2.4.1 Seating

In auditorium seating design is based on standard guide stated in each country, therefore in Malaysia it will be referring to the Malaysia Fire Safety

standard (BOMBA). There are two types of seating, which are non-self-raising seat and self-raising seat shown in figure 12. In between each row of seating, it should have a minimum 300mm walk way that allow audience to move or travel. While back to back seat spacing, the distance S should be more than 825mm in length. A seating should have a minimum 450mm dimension width as shown in figure 13, especially seating without divider arms for the comfortable and private space for audience.

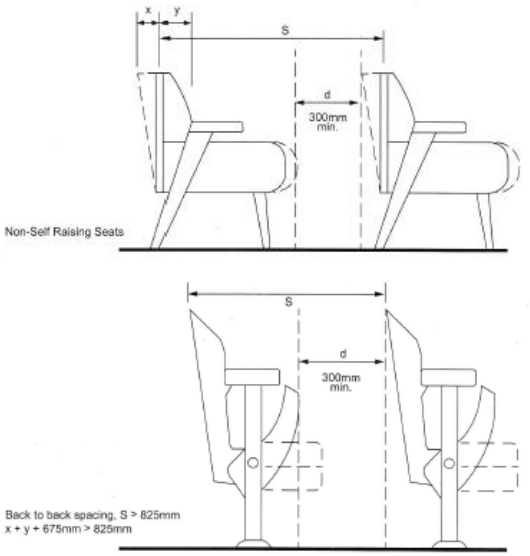

Figure 25: Spacing between seats. Source: Guide to Fire Protection in Malaysia Book

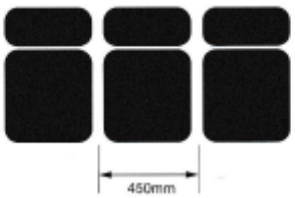

Figure 26: Seating without dividing arms. Source: Guide to Fire Protection in Malaysia Book

The seating arrangement can be designed in many form, as long it meet the maximum allowed number of seat per row stated in BOMBA safety requirement. With condition of 1.2m gangway in both end, maximum number

of seating per row permitted is 14 seats. If for only on one end, maximum 7 seats as shown in figure 14.

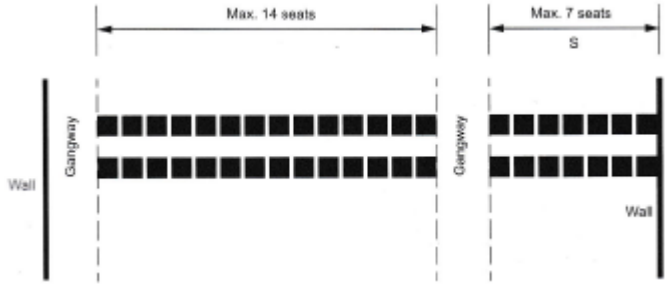

Figure 27: Maximum number of seating per row. Source: Guide to Fire Protection in Malaysia Book

Minimum of 1680mm exit should be provided on both side of the seating along the 1.2m gangway, limit to maximum 49 seats in a row as shown in figure 15. There can be different layout arrangement of gangway that shown in figure 16, 17 and 18, that need to be connected directly towards exit point.

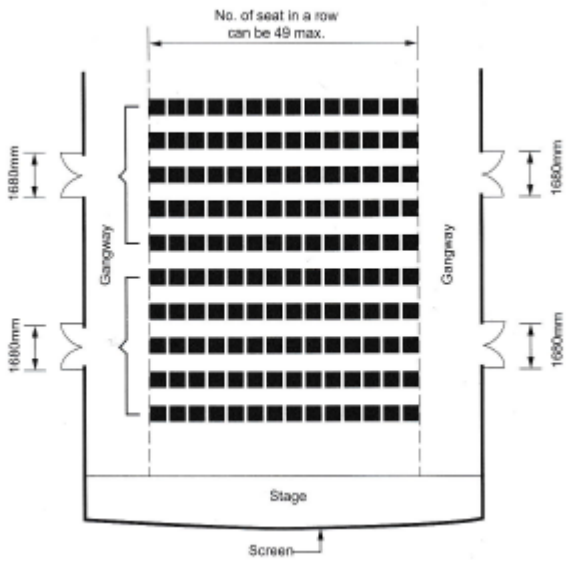

Figure 28: Continental Seating. Source: Guide to Fire Protection in Malaysia Book

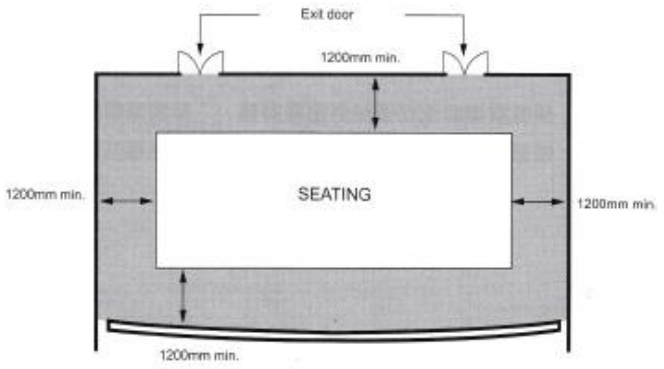

Figure 29: Gangway all round. Source: Guide to Fire Protection in Malaysia Book

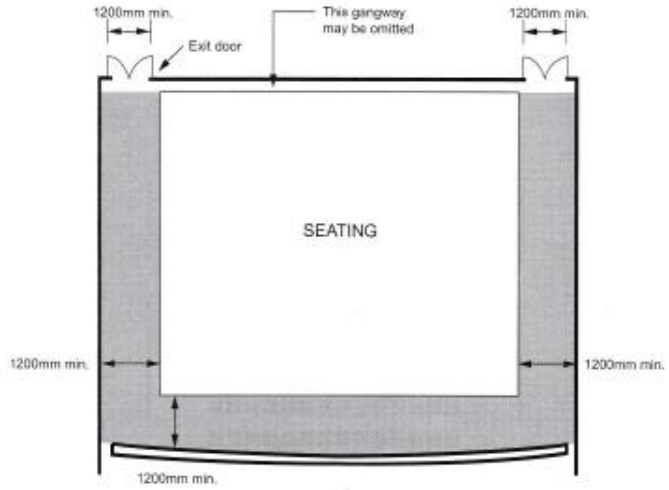

Figure 30: Gangway on 3 sides. Source: Guide to Fire Protection in Malaysia Book

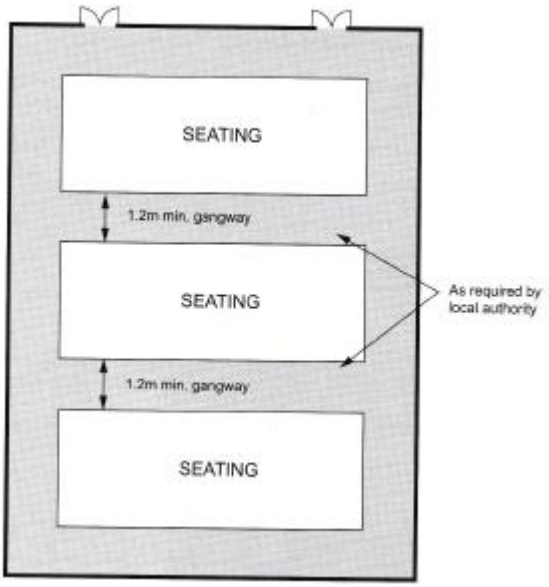

Figure 31: Parallel Gangway required by local authority. Source: Guide to Fire Protection in Malaysia Book

Guardrail need to be provided on ramped and stepped gangway that are more than 15 degree gradient, with minimum 1.05m in height as shown in figure 19. But using not for gangway, normal railing can be used as refer to the minimum required dimension stated in UBBL 1964.

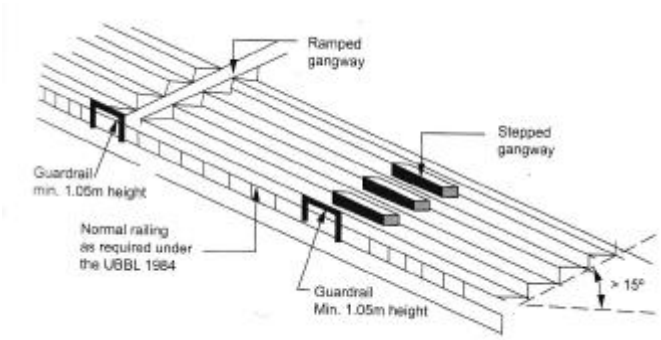

Figure 32: Guardrail at foot of gangway. Source: Guide to Fire Protection in Malaysia Book

2.4.2 Lighting System

Both lighting and architecture are two different individual consultant team, but light is one of the source that could enhance the spaces form and spirit of building to the viewers' eye and brain. Architecture drives the design of lighting that flow naturally with the intention of the design.

The exterior lighting play the role as exterior graphics that give the building an identity and show the programme that happen inside. In today's modern theatre, they are often designed with transparency to allow exterior viewers to look into the public lobby of the building especially during night time. Hence in this case, interior lighting were serve for external and internal spaces at the same time. During performances lobbies are less active, turn out

to be dark or negative environment. So by providing second scene of lighting design will help to turn the dark empty volume space into decorative feature.

Historically, artistic performance spaces should be a space that create values and meeting place. So lobby is the first and main space that separate ‘outside’ and the ‘inside’ theatre experience life. Therefore lighting assist artistic performance space towards this goal. The lobby is an intense social space, where interactions among audience occur. So lighting plays the role in helping public to look and feel good of the spaces. Lobby is also used for pre-theatre rendezvous and intermission socialling, catering to secondary activities such as dinning, exhibitions, pre-performance snacks, and casual performance. Hence, flexible lighting design will help to enhance space experience for the user.

Besides, lobbies and foyer act as transition space for light adaptation before reaching building theatre. This apply to black box auditoriums, which need more attention to adapt during daytimes. While in the meantime, lighting is designed as a tool for way finding and circulation. Even a concert hall that allow daylight as an amenity, use mostly for theatrical music events still require complete control of exterior light.

The lighting consideration in performance space, challenges architect to discover the way to integrate light and architecture design of the theatre, in produce a welcoming, warm, exciting and humane scale. As lighting design

determines size and scale of a performance rooms, it brings the audient closer to stage and performance. Adjusting the positioning, repetition and brightness of light elements and luminous surfaces are important aspects to pay attention.

2.4.3 Acoustic

Acoustic design of theatre is not the same for every artistic performance space, as it depend on a number of factors such as form, height, width and depth that limit by program, site conditions, architectural design expression and budget.

In outdoor amphitheatre, such as Greek amphitheatre or Roman coliseum, there are not much of acoustic influence that need to be considered than a design with clear line of sight for spectators, to provide ample view and indirect good sight to produce good acoustic. This is due to direct sound that will drop in sound level quickly with it distance.

On other hand, enclosed indoor space theatre is controlled by the shape of wall and ceiling surfaces. Due to the presence of reflective sound produced from the direct sound source that hit the surface, a good acoustic design of an artistic performance space is measured based on the delay between the direct sound and the first reflections as shown in Figure 24. A long delay will result

in unwanted sense of distance and separation between the audient and the performer.

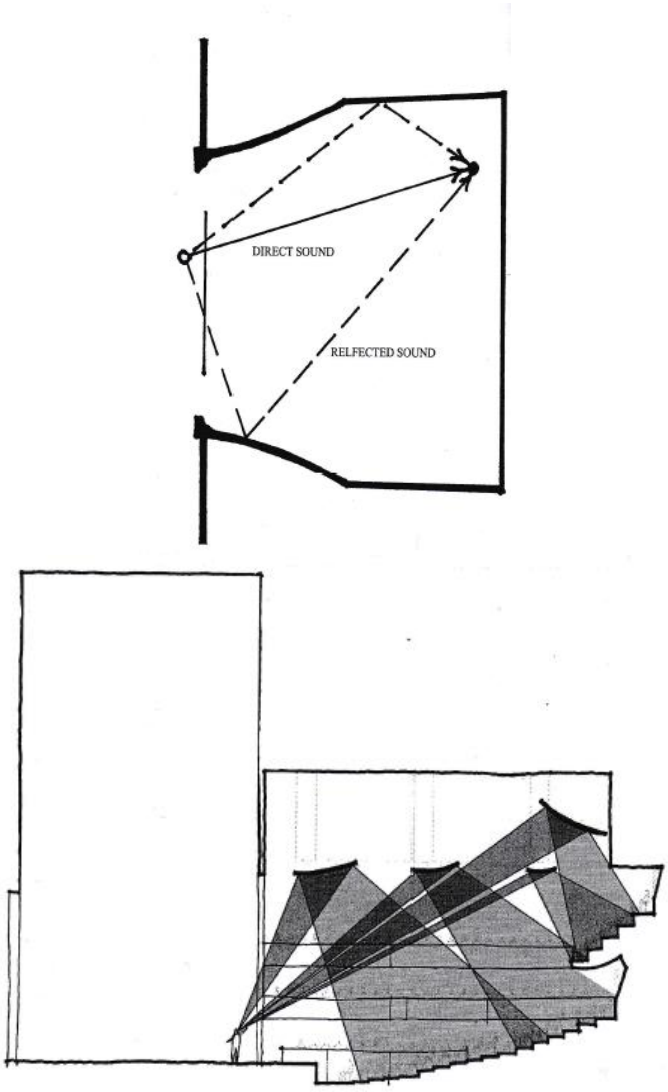

Figure 33: Direct and Reflected sound. Source: Building type basics for performance arts facilities

Firstly, natural acoustic is determined by the size of space and type of performance which then influence the room width design. For a flexible black box is 40 to 60 ft wide it helps to keep the acoustic delay short. While for the mid-size that could cater between 600 to 1,200 spectators can reach to maximum 80ft. But with the condition a narrow front room to avoid late reflections, similar the condition for large- size that could cater between 2,000

to 2,400 seats, and room width is limited to 90ft for support of reverberation (Sustained sound). Only for amplified performances, width of the room can be extended beyond 100ft wide.

Secondly, sidewall boxes and galleries can be used to increase acoustic reflection to the lower seating areas, and create as a visual scale at front space. Besides, boxes also act as a primary reflections when it extend high above the seating plane shown in figure 25, due to reduce in acoustic width of the space.

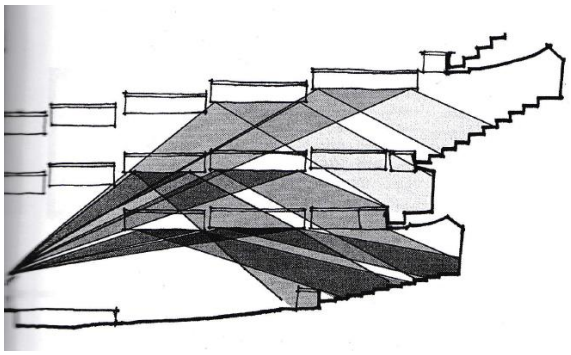

Figure 34: Sidewall Boxes. Source: Building type basics for performance arts facilities

Thirdly, for all unamplified performances height and width play important principle in acoustic design. Acoustic is shape by the space use and ceiling visual character. Therefore, the ceiling has to be low to provide reflections within the time delay required for clarity and support. While for amplified use, ceiling are used to control delayed reflections that produce echoes from the sound reinforcement system. Shown in Figure 26, 27 and 28 are some of choices available to design acoustic of the space.

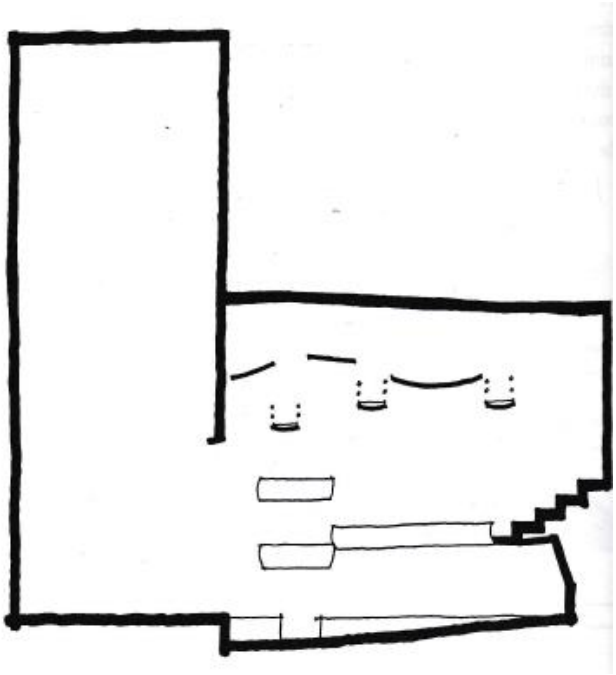

Figure 35: Reflectors above catwalks. Source: Building type basics for performance arts facilities

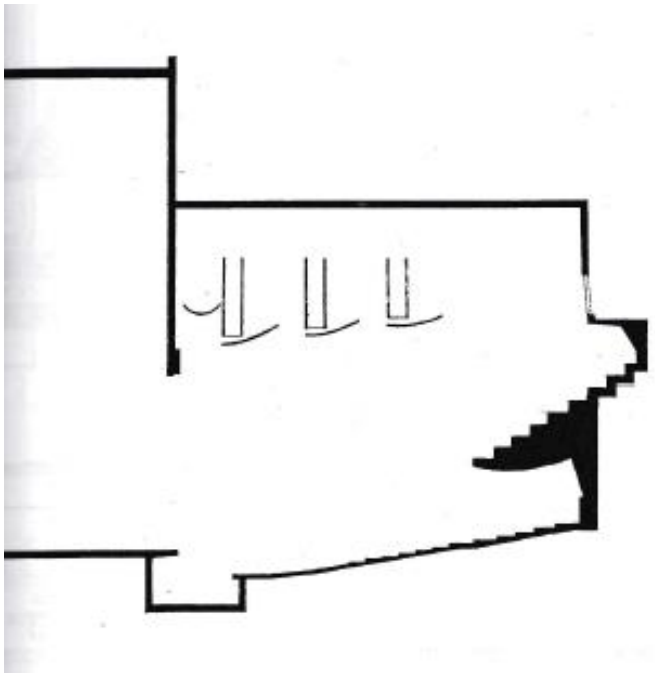

Figure 36: Reflectors below catwalks. Source: Building type basics for performance arts facilities

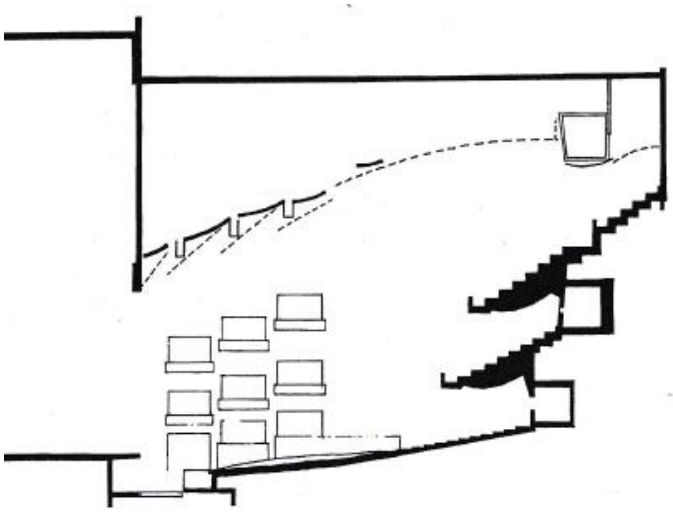

Figure 37: Acoustically Transparent Ceiling. Source: Building type basics for performance arts facilities

Next, reverberation time (RT) referring to the length of time the sound is sustained after the direct sound had stopped. Reverberation time is important to determine the liveliness of performance, while different types of artistic performance have different appropriate level and length of reverberation time. Therefore acoustic volume of the space need to match with a longer reverberation time that suit the room function. Hence, room shape will affect the volume of the space. So, rectangular plans have a better sound and more reverberant than fan shaped or semi-circle.

Lastly, theatre can be designed for one kind of environment, by having a fixed acoustic environment. Somehow in contemporary artistic performance space today, it is a must to accommodate a variety of performance in a single room. With advance in technologies todays, this had make it possible, for horizontally or vertically moveable sound-absorptive elements, that can be automatically or manually and operate easily with motorise system.

Flexible theatre requires a good coordination planning on acoustic reflectors, catwalk overhead ductwork, structure and front-of-house rigging, which is a complex puzzle and challenge for designers to handle.

2.4.4 Balconies

Design of the balconies can enhance the sound at seating below. Critically for orchestral music, the balcony overhang has to have a limit with the maximized height opening. For unamplified performance, it will be effective with only six rows overhang. While for small room, it will be better to limit it to three to four rows. Figure 29 shows the balconies and acoustic shape.

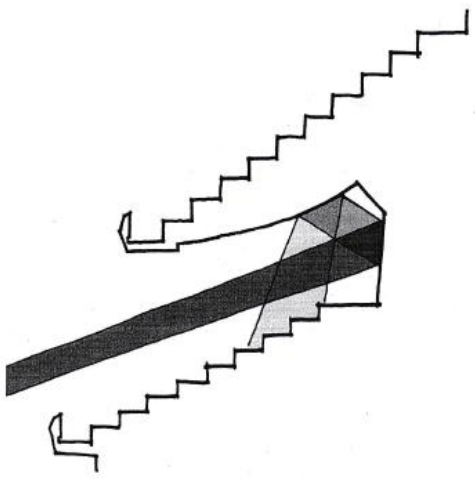

Figure 38: Under balcony Shaping. Source: Building type basics for performance arts facilities

2.4.5 Control of Echoes and Other Anomalies

Echo is defined as the sound that arrives 1/20s or more after the direct sound that noticeably louder than the reverberant energy in the room.

Focus is defined as a concentration of sound resulting reflections that can be as loud as or louder than the direct sound.

Flutter is defined as a sound becomes trapped in a repetitive pattern, resulting in a harsh quality.

These conditions can be avoided through:

- Reorientation

  It can be done in early design stage by slight reconfiguration of wall, helps to eliminate a flutter condition between parallel surfaces.

- Diffusion

  Sound diffusive element helps to reduce the effect of focus and flutter. Diffusive work well at rear wall to control echoes, but not effective for ceiling or sidewall surface. The orientation of the diffusive is relative to the sound source.

- Absorption

  To control loudness, echoes or focus, sound – absorption materials are used in proper amount and correct location. As too much absorption materials make the room feel lifeless.

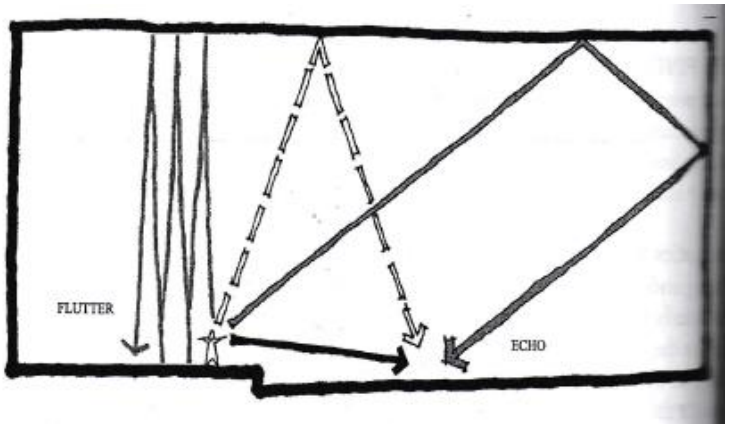

Figure 39: Flutter and Echo. Source: Building type basics for performance arts facilities

2.5 Space Usage and Functions

2.5.1 Public Gathering Lobby

Public Lobby is a node where interaction between performance and audient happen. This create as independent space for intermission break, performance, parties, reception and weeding.

2.5.2 Retail

Retail not only serve as public third place, but it provides revenue support to maintain artistic performance space. Rather depend on ticket sold on performance, which only contribute in a small percentage in providing maintainer support to artistic performance space.

2.5.3 Park and Landscape

Landscape not only able to create environment for architecture building purpose, it also create as a space that allow different user to have different activities that benefit them such as Jogging, Sketching, and etc.

2.5.4 Auditorium

It will be an advantage to house multiple number of theatre in one complex, so that some of the space and equipment can be shared. Besides this it allow easy stage crews to load and unload heavily and expensive equipment faster and effectively within the same complex. On other hand, by having multiple theatres join with a public space help to mix and allow the audients to mingle together.

Besides functional auditorium management, it is also important to have correct types of theatre to choose from. As each and different types of theatre has its own positive and negative sides, which depend on types of performance.

2.5.5 Resource Space

Resource space, can be considered as space for education activities or library. The design deliver a wide range of education activities including books and other resource, which allow the artists to use as a research area. It can be turned into public education space by merging the studios into a space that could be used as workshop area. But the space has to be plan in the beginning design stage, to avoid the friction of sharing the studio room.

2.5.6 Management Office

A management office need to be part of integrated space for the artistic performance space. This will help in human productivity from being isolated from the main activity. To allow staff to be close to the action for both front (theatre manager, box office, and catering manager) and backstage (Technical manager, chief electrician and master carpenter). As the management office might change over the time, therefore is important for the space to be flexible such as open plan office.

2.5.7 Studio

Studio or practice room is designed space for individual and small group practice. Sizes can be in a series of number, depend on the number of performances. Therefore, bar and mirror is provided for dancer to use for practice.

2.5.8 Rehearsal Rooms

Rehearsal rooms are designed to cater for the continuous programme run of the artistic performances, when the theatre is busy. Renting a place outside will be expensive and inconvenient, and also by using the theatre will be high in cost for the use of electricity when theatre is in its full power. Therefore, rehearsal rooms have to be designed with sizes that match the theatre stage and be located near to dressing rooms and stage management office.

2.5.9 Make-up and Stand-by Room

During and before the performance, stand by room such as dressing rooms will be the place near the time the performances space for changing, make-up and etc. Artificial light will be needed to light the space. Natural light

can also be provided through windows and protected with blind for reduce light intensity and provide security.

2.5.10 Server and Technical Room

Lighting, sound and video are three main systems that circulate around the theatre design. Therefore, each component has its own rooms and details to meet, which typically cost about 10 to 15% of the construction cost.

Dimmer room need to be big enough to house all the dimmers and associated switch gear and data distribution as it need to be well ventilated with air conditioner to maintain temperature of the system.

Lighting control room need to be place at the good sight location by looking at the type of theatre typology. Ideally it should be place at the centre rear of auditorium, without sight interruption due to audient or structure. The task is to control the overall lighting system of the auditorium and programme the stage performance lighting.

Sound system equipment room that house all the patch bays and equipment for various systems, mostly AV system. The size of the room depend on the size of theatre with 25 to 30% extra rack space for future additional use.

Sound control space function as a music, effects, soundscapes and atmospheric background control centre. Therefore the room need to be place at the prime location where they can hear and experience as the audiences heard.

Video control room that control the projection for film and video, which also need to be place at a position with a good sight line and easily reach to other control room for synchronies the show effect.

2.5.11 Back Stage

Back stage including dressing rooms, stage get-in, technical area and stage door, where most of the activities that need to be cover up from public view, for both private and security reason for performance and technical claws.

Dressing room should be placed away from area building that occupy by public. The size can vary from single dressing room to a group of 200 performances size. Dressing room must be provided with adequate toilets and

showers and other additional support facilities nearby such as a wardrobe, resting area, panties or offices.

Stage get-in area is important in setting out the theatre design, it is the point where spectacle is to be mounted and large. Where heavy equipment can access to the lift or direct to the theatre housing area, which affect the design of architecture building layout.

Stage door entrance is different for artists and technicians, as the main function is to control the access and security measure for dressing room. There are some stage door designed by combining with main reception or security control room for economic reason. Beside it also act as sound barrier from outside to inside the theatre space.

2.5.12 Box Office

In the past, box office was a place that handled large amount of money from tickets sold. But today online banking has made it possible to reduce the large amount of cash carried at box office, hence it can be turned to an inviting welcoming reception area for the public. Example: Renovated Orchestra Hall in Minneapolis, Minnesota.

2.6 Accessibility and Connectivity

2.6.1 Public Transport Line

Public transport, such as KTM/MRT/LRT/Monorail line and public bus line not only connect peoples and reduce pollution from traffic problem. It contribute in terms of connectivity, where people can easily reach to the site without any worries due to transport difficulty and unreachable by walking pedestrian. National Theatre and Concert Hall Taipei is an example of good connectivity, which will be further discuss in chapter 4.

2.6.2 Community

Artistic performance space has always been a part of community life, regardless of differences in culture or context. As artistic performance space aim to communicate ideas and reflect certain life aspects, which involve different disciplines such as social sciences, education, anthropology, refugee studies, and etc. This helps to improve community health and wellbeing. Therefore, by understanding the local community needs, it will help in creating functional and active performance spaces.

2.6.3 Green Lung or Plaza

Architecture landscape and plaza create are features that not only for the purpose of astatic, but it form a node for the place, where people could interact and creating activities to celebrate the artistic performance space. Therefore, as a public space, one has to be generous to allow audiences to socialize comfortably.

2.6.4 Water Element

Water is most important source of life. The smell of the nature water, sound of the wave and infinity panorama view of water has extraordinary effects. Therefore in modern context, light, air and sun are no longer restriction for the design, as water can be controlled to merge with architecture context. Architecture, innovation, light and water can all be integrated. In Chinese understanding, water is a source of energy or Ci that brings good architecture design, connecting human and nature.

2.6.5 Art/Culture Element

Art or culture installations help to integrate the artistic performance centre. The design of theatres should allow the artists to contribute and involve

with design and fabrication of building elements from floor finishes to lighting and furniture.

2.6.6 Parking Space

Parking must be designed to give the comfortable and pleasurable walking experience for the audience. Example of worst situation happen to Lincoln centre, New York City, where audient with a nice dresses have to walk through the oil slicks underground garage before reaching to a suitable entrance.

Having a public transport nearby is an advantage, but having a sufficient car park available and within reasonable walking distance to the theatre will be an added point. Allowing audience to park outside the theatre or at residential streets will generate conflict with other public users, especially drop off points for taxis and disabilities need to be considered.

2.6.7 Circulation

Circulation must be clear for the spectators who enter from hall to the auditorium without any graphic identification. Even the path to restrooms, seating, box office, lounges and concessions should not be complex with the

presence of signage. Instead, the building should allow the audience to feel the pleasures of people-watching by providing clear routes to all.

2.7 The development of Artistic performance spaces in Malaysia

In Malaysia, artistic performance started in 1964, and were developed into professional level in 1974 with traditional musical and dance. In 1982, the Youth Symphonic Orchestra Group was formed and grown into professional line in 1992. The artistic performance space of Istana Budaya were born in 1999 with the mission as the iconic symbol of Malaysian theatre. It was built as experiment and to discover the potential talents in Malaysia at a times when artistic performance space in Malaysia is still young.

The built form of Istana Budaya external design show the characteristic of Malay culture, which is derived from Sirih Junjung flower with layering that form a single enclose roof. The internal layout was arranged according to traditional layout of kampung house. This reflect the sense of space of an ancient palace, created as a sensory experience for public to imagine. The performance space, was designed to cater 1,421 spectators at a time .That included the main auditorium size to cater 796 seats at first floor and 322 seats at second floor.

Figure 40: Istana Budaya. Image downloaded from https://en.wikiarquitectura.com/building/malaysian-national-theatre-istana-budaya/ in May 2017

After Istana Budaya became the iconic symbol for Malaysia, this form the culture and art department in every states of Malaysia by the Malaysian government. In the meantime private organisations as well as other small private studio emerged in promoting culture and art. They have contributed in providing training the young artists and educate the public with artistic knowledge, helped to discover on existing or new culture elements. That will build a good network of international culture friendship from exchange of artistic skills.

Panggung Seri Taman Budaya Negeri Melaka is another of artistic performance space in Malacca that was established in 2004, by the Ministry of Culture and Art Malaysia (JKKN) which is a government department of culture and art in Malaysia JKKN was set up to promote, provide and educate all the public with knowledge and necessary spaces for the performance. Facilities such as auditorium that could cater between 100 – 150 spectators, open space, seminar/meeting rooms, practice studio, gallery, and library that

open to public use are provided. Besides, it is located near to hotel/resort, mall, museums, and others Leisure Park such as zoo, botanical garden and etc…

Aside from Panggung Seri, in all the braches of JKKN theatres in Malaysia, it can be seen that there is a lack of architecturally interesting features. In Addition, the inappropriate scale and design of facilities such as training or working studio, lack of space for improvement and exploration for artistes, created a non-harmony environment for artistes.

Kuala Lumpur Performance Art Centre (KLPAC) is a first private non-profit organisation that was established since 2005, by the Actors Studio in 1995. Previously the old building complex was located in underground of Dataran Merdeka. Due to flood in 2003 the performance space need to be relocated .The performance space need to be built, even if the land price is high at that time. Therefore, KTM National Railway warehouse in YTL Corporation's Sentul West were conserved as KLPAC artistic performance space. With award winning architectural design, it has created a new landmark or icon for arts and culture exchange locally and internationally and become a new lifeline for arts and culture in Malaysia. KLPAC consist of proscenium theatre (Pentas 1) that could cater 504 seating for large scale production such as musical, concerts and big drama. In addition, the venue could hold the second programs at modular black box theatre that cater 190 seat, suitable as an flexible experiment stage with wider possibilities of arrangement at limited imagination. Other supporting facilities such as, studios for training/rehearsal,

cafés/restaurants, resource centre, foyer art gallery, merchandise counters, workshop, green room for artistes, conference room, administration office and production offices.

Figure 41: Kuala Lumpur Performing Arts Centre. Image downloaded from http://www.theactorsstudio.com.my/?page_id=26 in March 2017

Where the urban development in Kuala Lumpur, Petaling Jaya and Damansara grown rapidly with hike in land price, hence artistic performance spaces develop in mixed-development is the another option. One example is Damansara Performance Art Centre (DPAC) which was formed in year 2013, and is located in a mixed-development of Empire Damansara Project. With a fully equipped proscenium stage that cater for 200 seat, it is suitable for small scale dance, drama, musical production and movie screening. Together with other supporting facilities such as training studios offices, and foyer art gallery. DPAC was found to be unsuccessful in mixing the existing shop-lots within the urban development plan. But overall, the development hardly bring impact and liveliness to the surrounding town development, as it seems to be isolated from the context and activities in that area.

Figure 42: Damansara Performing Arts Centre. Image downloaded from https://www.criticsrepublic.com/2015/10/24/mixed-use-forgets-about-the-users/ in March 2017

On the other hand, Penang Performance Art Centre (PenangPAC), which is located in Straits Quay Penang, is a well functioned mixed-use development that comprises of a shopping mall, shop-lots, hotel and residential units. It is one of the important landmark in Penang, PenangPAC was developed as connected entertainment park for surrounding housing development. The performance art centre is designed with two stages: the main proscenium theatre (Pentas 1) that could cater 303 seats, and black box (Pentas 2) that cater for 120 seats, with three multifunctional studios, two visual gallery, production and administration office.

Figure 43: Penang Performing Arts Centre. Download from http://venue.myceb.com.my/venue/penang-pac in May 2017

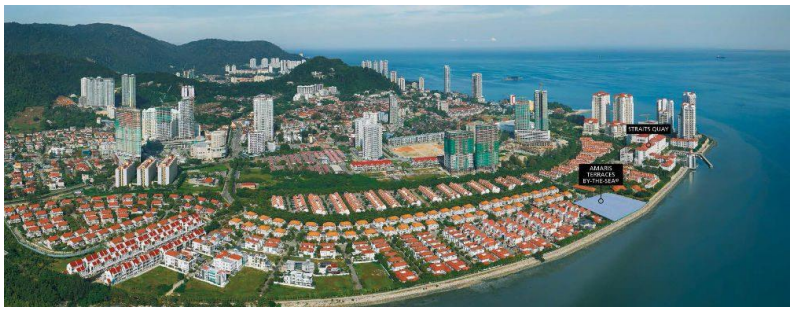

Figure 44: PenangPAC and Surrounding Development. Downloaded from http://www.penangpropertytalk.com/category/location/penang-island-location/tanjung-tokong/ in May 2017

2.8 How artistic performance rejuvenates urban development ?

Live Artistic performance brings multisensory experience for both creators and audience from across different profession and age, such experience is enjoyable, enriching or transformative. Hence, artistic performance create a sense of identity and belonging that shape and unite performers, audiences and community.

Artistic performance space place a major role in a global city. It brings back the cultural vibrancy, unique character and vibrant environment to live, work and play. This then, generate economic and attract tourists for many "global cities".

Esplanade in Singapore which was opened since 2003, proved the maturity of Singapore artistic performance and brought the Singapore stories into the world arena. The integration of artistic performance space helps in nurturing artistic performance talents. The landscape space had changed from small black boxes to large commercial venues, that not only to cater for the liveliness environment, but to generate profit for the venue.

In New York, USA major change happen on group efforts due to the change on zoning regulation within 1967 to 1974. This special districts in New York such as the Theatre District, Lincoln Square Special Zoning District, the Fifth Avenue District, the Greenwich Street Special District in Lower Manhattan and the Lower Manhattan District of Battery Park City and Manhattan Landing. That promote and encourage developer to invest in a theatre commercially, and 20% floor area was offered them as an exchange. This helps to have a lively environment around the clock, which brings the idea to further innovation schemes.

Figure 45: Theatre District, New York. Image downloaded from https://www.thinglink.com/scene/703603409160241153 in May 2017

Taipei Performing Arts Centre, which was built as an image to represent Taipei as an international Culture Hub. The hub is located just opposite public transport and MRT station line, it is marked as a tourist spot and could be reached by the public. This will enhance the programme at that area, such as the night market, which existed there for many years. Indirectly, will improve the circulation of human flow in that area.

Taipei National Theatre and Concert Hall was built together with large public open garden, Chiang Kai-shek memorial hall and exhibition hall in a single master plan. Other than attending the shows at night, it attract more peoples to the garden, for daily leisure time, and raise awareness on the importance of physical exercises in the park. With varieties of landscape design and open plaza that can be easily reached from different direction, it brings in many different age groups to form activity of their own, such as dance practice by youngsters. Simultaneously, outdoor performances can be

performed at the parks, hence it create attention and is visible to the surrounding public.

2.9 Issues regarding Artistic performance space

The difference between success and failure of an artistic performance space, is measured from the emotional exchange between artistic live performer and the spectator, and members of the audience. To provide a comfortable personal space for audiences is a must, but to design a successful theatres it needs both comfort and attentiveness to be in balance. Live performing theatre and cinemas are different. Where cinemas need a comfortable seating for movie and enjoy popcorn, live performance theatre is much more about the actors and audience who create the performance together. Peter Brook wrote that "the least important thing in the theatre is comfort" [5].

Each artistic performances has its own form and space design, therefore there is no ideal shape for a theatre and ideal size of a theatre, as the scale vary depending on the size of the staging required by the performance and the number of audience. Figure 41 summaries all the different types and forms of theatres that are designed to cater different artistic performances with different requirement for stage layout, to sound and lighting details.

[5] http://www.recentonline.ro/049/a-13-Tzaras-R49.pdf

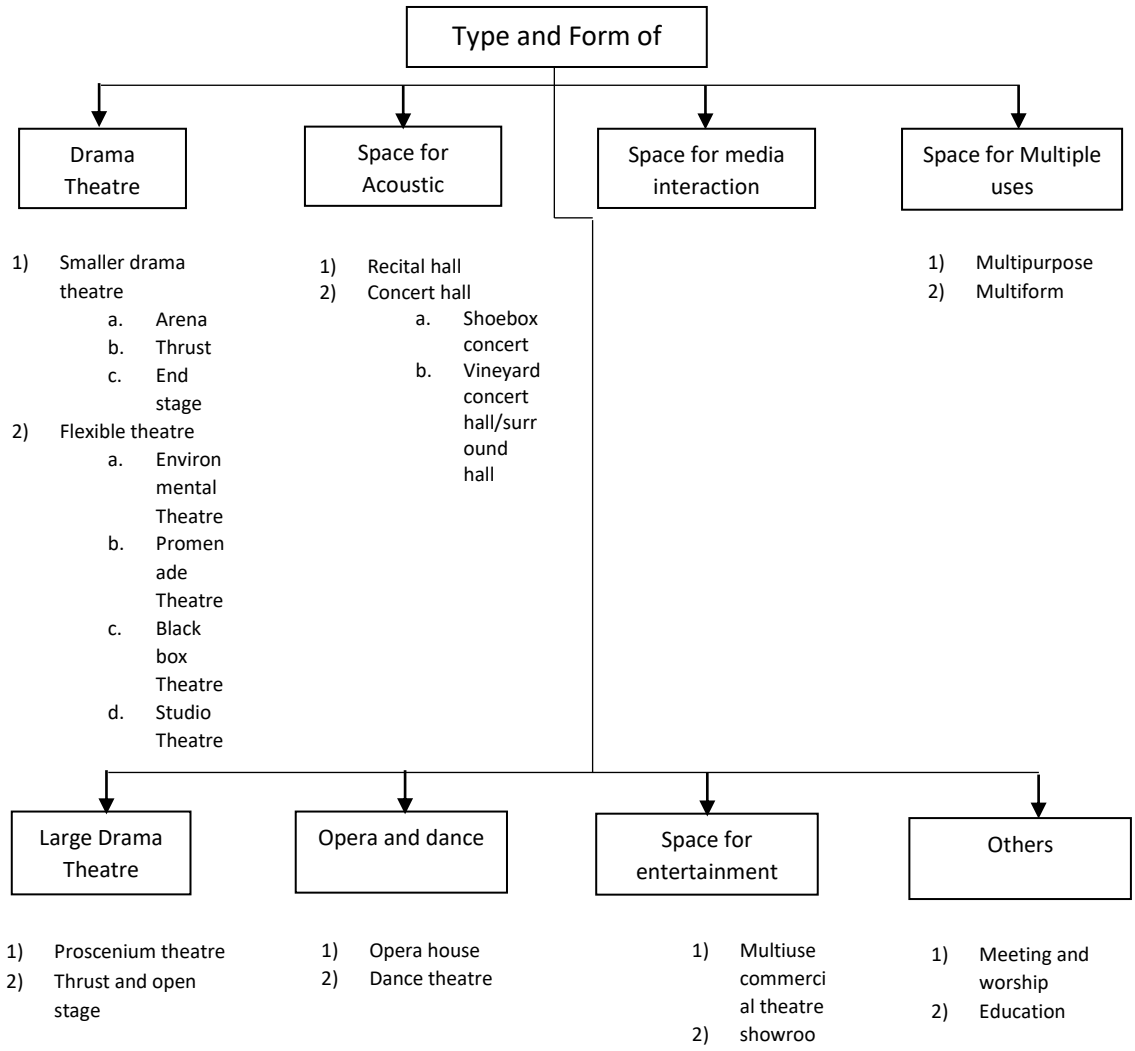

Figure 46: Type and Form of Theatres

Artistic performance space need to be equipped with a full suite of different sized spaces. In Singapore, mid-sized venues has met a demand from the artistic performance, more than 80-85% of work from theatre to music, both classical and contemporary preference. Without mid-sized spaces, there will be a limitation of types of artistic performance either from local or international for effective presentation on the performance stage.

Majority of theatres in US rely on both government and private funding as it can just maintain half of operational costs. It will be hard to sustain, by just depend on outside funding, especially during the economy down fall and unstable political.[6] Therefore, if art is good, it can turn into business without compromising the art. Sometime it may not be profitable, as it can help to sustain the theatres when decision is made on how or when art is produced and displayed. Trafalgar Square was redeployment by Foster to show that architecture as a backdrop for art, which new development does not seem to superimpose the rigid meaning of the square, but gives continuous meaning creation of the art through minimal interventions on structure construction.

The lack of character that created identities for theatres, somehow will affect the visual impact and psyche of the viewer on the urban development scale. Bracusi once said, architecture was nothing more than inhabited sculpture. Guggenheim Museum in Bilbao is one of great example on expressing its architecture identities of a building. Frank Gehry's expression of architecture with frozen variations of music, dance and art objects into spectacular architecture building.[7] It transformed an autonomous sculpture than just architecture building, which then cultivated a new vibrant culture and development. It helps as a core of sustainable development and regeneration of polluted Nervion river waterfront and industrial storage area.

[6] https://www.arts.gov/sites/default/files/how-the-us-funds-the-arts.pdf

[7] http://ac.els-cdn.com/S1877042812033447/1-s2.0-S1877042812033447-main.pdf?_tid=245d8234-9d23-11e7-8996-00000aacb35d&acdnat=1505816172_0189329c160c21e55b2bd5c5e112ce4f

Artistic performance has been used to solve urban issues, but the lack of integration will affect the creation of community spaces, and enhance built environments which allow the inhabitants to engage with these spaces. One example is Akiha Ward Cultural Center, Japan public theatre that cater 496 seats and designed to be the cultural incubator for the local. As it is sited on a former baseball field, therefore the structure, landscape and parking are organized accordingly to evoke the memories of the site. It was built for the performance theatre but several number of rooms and functions were allocated to respond to the need of local communities.

Due to lack of space, most of old theatres reopen with fewer seating capacity. This had resulted in the smaller chairs and less floor area per chair compared with newly built theatres. Example of New Amsterdam Theatre, New York which was opened in 1903 with 1,702 seats (5.9sqft per seat), had been renovated and reopen in 1997 with 1,825 seats (7.2sqft per seat). This cause the former lobby space been pushed to replace the adjoining property, for the extension for bigger auditorium.

In the study of Feng Shui, the content a Feng Shui model[8] which describe the aspect of Outer form and Inner Form (Ten Books on Dwellings of Living) helps to summaries the important aspect that can be considered in artistic performance spaces, which indirectly match to design issues that decide the success and failure of a performance space. From concept of “Four

[8] Michael Y.Mak, Scientific Feng Shui for the Built Environment Theories and Application (Hong Kong: City University of Hong Kong Press, 2015), p.100-101.

Design Modules", it further classifies the Feng Shui model into four modules as shown on Figure 10 (Cheng and Kong, 1993), these arrangement shown the hierarchical structure of a building design issues from surrounding environment to internal arrangement of objects or furniture. In this case, it expresses the relationship of artistic performance spaces with it surrounding environment to the layout of seats and etc.

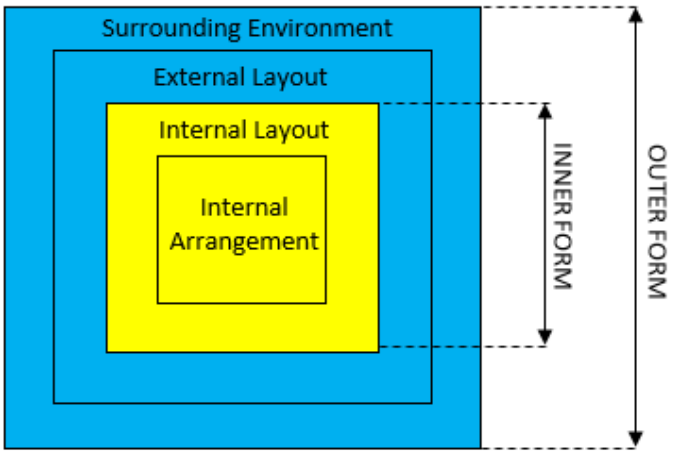

Figure 47: Feng Shui Four Design Modules. Source edited from Scientific Feng Shui for the Built Environment Theories and Application

In conclusion, different types and shapes of artistic performance space (internal and external design), create a different emotional senses and sight lines for spectators. This enhances the content of the artistic performance, that bring close the relationship between audience and performance. Other than these, planning of costing and maintaining the performance space need to be taken into consideration for the program to keep running. Not only by increase seating capacity as solution, but more on how to readapt and transform the spaces according the needs of artistic performance at any time.

CHAPTER 3.0

RESEARCH METHODOLOGY AND LIMITATION

3.1 Introduction

The nature of this research topic involve with both tangible and intangible aspects, which human senses and emotional feeling are important in the research. This study required the proper qualitative research approach with multiple suitable case studies included. The case studies are the selected performance space or theatre in local and oversea, which are well known or well plan in term of architecture approach. The qualitative method in this research, help in producing a synergistic results by which the results of one method are used to reinforce and mapping out the overall result. In this method of research, follows a hierarchical process by starting from selection of case studies via books or internet sources, followed by conducting interviews, site observation, and 2D model.

In qualitative research strategy aim to tacker on the research questions and objectives that involved with “integration of artistic performance space”. Therefore, the qualitative methodology is a suitable method to understand and investigate the communication bridge between the spectators, performances/choreographer and venue (performance space). It could reveal

detailed information, concerning success, failure and elements of artistic performance space. The field and personal participation observation methods was used to record the wider ranges of elements and forms of artistic performance space, which through the informal interview with civil society alone is insufficient.

3.2 Selection of Case Studies

The case studies approach was used, to explore the elements and aspect that contributed in success and failure of existing artistic performance spaces that could found locally or internationally. That are assumed to affect the experience of the spectator, performance and choreographer, hence impact downtown urban centres development.

Process of selection began with listing out all possible performance space that are well known in term of history background or creative and innovative design concepts. With the list, then it will be filter out by selecting a few that could possible to perform in our exploratory trips. By taken consideration of our limitation of time and financial resources for this research. The shortlisted artistic performance space was based on the following criteria:-

- Artistic performance space that are still active in use or been use by most artistic performance.

- That brings impact to the surrounding downtown urban centres vibrancy.
- Stand to be a landmark, node or iconic to the surrounding local community.
- Non – religious function.

3.3 Informant Interview

Key informal interviews on civil society will be perform, in addressing the objective number 1, 2 and 3. By interviewing either professional or well-known group of peoples that had artistic performance background and stage technical expertise. Therefore is non- probability convenience sampling is use in selecting the professional artistic performance people or group. With their expertise in knowing well in their field of artistic performance and their desire for the use of artistic performance spaces, will help to create a suitable artistic performance space that suit to Malaysia artistic performances. Only by interview convenient for the ideas to flow, as it could be observe and listen to their opinion in much more in deep than written words.

Interviewing Process

The interviewer were arranged through telephone or email appointment, to set up a suggested time of their choice within the research period. Most of

the interviews were conducted as a one-off exercise that lasted between thirty minutes to one hour.

The interviews were conducted via one- to- one conversations, in the language chosen by the respondents. Most of the interviews were conducted inside their studio room or office, to create a comfortable environment for the interviewer and help to improve the flow of the conversation in more relaxing way.

During the interviews, audio recording was used to record the conversations; with the permission allow by the interviewer. This helps to control the flow of the interviews. The digital device was less obtrusive as it was small in size and less level of set-up. The interviews began with self-introduction, then started with casual chit-chatting with simple questions related to background information such as the length of experience in dance, and how it started to form, etc. Then followed with series of open-ended questions on a more general level, such as how artistic performance important in a country. Next, this will form a direction depend on situation, that could probed to further information on specific issue. The questions were loosely structured, this to allow the freedom for respondents in deeply express their own answers and ideas. Along the conversation, all the necessary questions had been checked. Lastly, the conversation ended with thank you and photo taking for keep in touch for any future event.

3.4 Field Observation

Below are the listed artistic performance spaces were choose for field observation, after considered the limitation of time and financial resource of this research.

i) Site visit to local artistic performance spaces:
   a. Damansara Performance Art Centre (DPAC)
   b. Penang Performance Art Centre (PenangPAC)
   c. Kuala Lumpur Performance Art Centre (KLPAC)
   d. Istana Budaya

ii) Site visits to artistic performance spaces oversea:
   a. National Theater and Concert Hall Taipei, Taiwan
   b. Toyo Ito Metropolitan Opera House, Taiwan
   c. Esplanade, Singapore
   d. Cloud Gate Dance Theatre, Taiwan

Observation were performed by self-walk in, to observe the artistic performance space in overall from external to internal circulation, form, and etc. Photo and video were took as a record. Brochure or flyer were took, as it content all the necessary information or layout of the performance venue. In some cases, books were brought as a collection which content the construction process till opening ceremony of the performance space. Therefore, date and time on upcoming performance were remark for personal participation observation.

3.5 2D Model

All collected data, photo, video, map, books or etc. from site observation were map together. And design software such as Rhino or AutoCAD were used in develop a 2D plan that help to addressing objective number 1.

3.6 Participant Observation

Tickets were book for different types of artistic performance that held locally and abroad from Feb till May. That would address on research question 2 and 3. Before the event started, observation were done from seating to stage layout with human senses on the size, colour, form, detail and etc. Photo or video were taken, for the record. During the performance, movement, layout arrangement, sound, lighting effect were observed. Lastly, all the observation were written or sketch as a record.

3.7 Data Triangulation

This process were carried out after all the data was obtained and analysed. As triangulation involved using more than one source of data to reinforce the results of the research and improve the credibility of the results. Data triangulation process included supporting information from key informant interviews and secondary resources from books, articles and etc. Finally, the conclusions were drawn from this mapping process at the end.

CHAPTER 4.0

FACTORS OF SUCCESS AND FAILURE IN SELETED ARTISTIC PERFORMANCE SPACES

4.1 Introduction

The success and failure of any single artistic performance spaces can be observed from the selected case study samples. These factors can be divided into aspect of internal layout and external building form that influence the perception of people. For analytical discussion, they will be categoried into few groups as shown:

- Architecture Typology and building form
- Specification and Materials
- Space Usage and functions
- Accessibility and connectivity.

4.2 Architecture Typology and Building Form

For typlpogy and building form, I would like to use examples to elaborate. Firstly, Toyo Ito's Metropolitan Opera House in Taichung, the

opera house is designed entire architecture building itself as opera house concept. This building was design to stand alone with its remarkable building concept, without any influence from external forces surrounded it. With 400mm thick concrete curved surface that form into 58 modular catenoid units, this is reflected the interior space of the opera house with cave liked design, beamless and three dimensional curves. This open up to wider space, and the curved surface blur the distinction between floor, wall and ceiling.

Figure 48: Front Facade of Toyo Ito Metropolitan Opera House. Image downloaded from http://www.edmundsumner.co.uk/mobile/gallery.php?gallNo=35&catNo=1 in June 2017

The cloud gate theatre in Tamsui,Taiwan designed to bridge the old and new feature elements, with architecture design and materials. Cloud gate auditorium is different than conversional dark space theatre, as it was designed to allow natural light to enter into the interior space, which is opened up to beautiful surrounding with the huge windows, where spectators could experience outdoor theatre like even when the space is closed up with certain. The height of the theatre was designed to cater for 450 seats. More than 200 trees were planted around the site that helps in reduce the strong sense of

concrete, steel and hard material structure. While it brings the theatre and human close to natural loci of the surrounding, steps, lawn, cliff and ocean are placed at a distance away. From far it look like copper mushroom, where the roof design was inspired by Mountain Guanyin on the opposite side of Tamsui River.

Figure 49: Cloud Gate Theatre Building Form Image downloaded from http://site.cloudgate.org.tw/eng/theater/ in June 2017

Next is Taipei National Theatre and concert Hall, located at Boai District in Central Taipei. The theatre and concert hall is Design with traditional Chinese palace structure, with elegant gold roofs, overturned edges, red Chinese colonnades and colourful arches, where the two buildings surrounded with four different landscape plazas create a living landscape and became a significant landmarks in Taipei. With the characters of majestic and classical architectural that influence peoples to inspire people to imagine the future on the basis of classicism.

Figure 50: Taipei National Theatre and Concert Hall. Image downloaded from https://en.wikipedia.org/wiki/National_Theater_and_Concert_Hall,_Taipei in June 2017

Singapore Esplanade with its eye-catching spiky twin-domes became an iconic in Singapore. The iconic building is able to accommodate the demands of Asian arts performances, particular traditional arts. With cutting edge approach by Russell Johnson, resulted in one of the best acoustics concert halls around the world. This world-class performance venue with refined acoustic features, suit to cater wide range of Asian and Western arts performances. Both domes are designed to reduce the heat gain into the internal space of the theatre, by having extra layers of protection that act as a louvers to reflect heat. This helps the building to use less energy to performing the full length of event output.

Figure 51: Strait Quay Penang (Left) PenangPAC Lobby Main Entrance (Right). Image downloaded from http://www.visitpenang.gov.my/portal3/about-penang/shopping/straits-quay.html in June 2017

Penang Performing Arts Centre (PenangPAC) adjacent to Eastern & Oriental Berhad, is an integration of mixed use function development. Functions provided include such as hotel, retail mall, retreat unit and surrounded with other housing development. PenangPAC is housed at the top floor of E&O development block. The existence of PenangPAC, contribute to the vibrancies of the surrounding development.

Istana Budaya or Culture palace in Malaysia used to be a main and first national culture performance space symbolising Malaysian culture growth, and improve the Kuala Lumpur culture and living standard. Istana Budaya was designed with a concept referring to the growth of Malay vernacular house or Rumah Kampung, where the building layout were symmetrical and alike to the anatomy of kampung house layout. Spaces were attached to the main lobby space at the centre, while the roof is designed reflected the siri junjung flower, with a few tier of roof stack in one vertical axis. As the name stated “Istana” which is palace, signifies a grand place for the people to experience the history of the past. It is designed with a strong and large ornaments from door detail until the ceiling textures.

4.3 Specification and Materials

In Toyo Ito Metropolitan Theatre auditorium, three dimension curved wall had help to provide a good acoustic sound system and the acoustic box of

a simple auditorium typology design, where people can experience a natural sound of cave-like sound. Besides in the auditorium, the curve was design on the wall of entail building, which not only creates a cave acoustic surrounding inside the auditorium but to brings out to the public a space that is full of vibrancy, by turning the surrounding foyer or public space into a celebration place of sound and opera house.

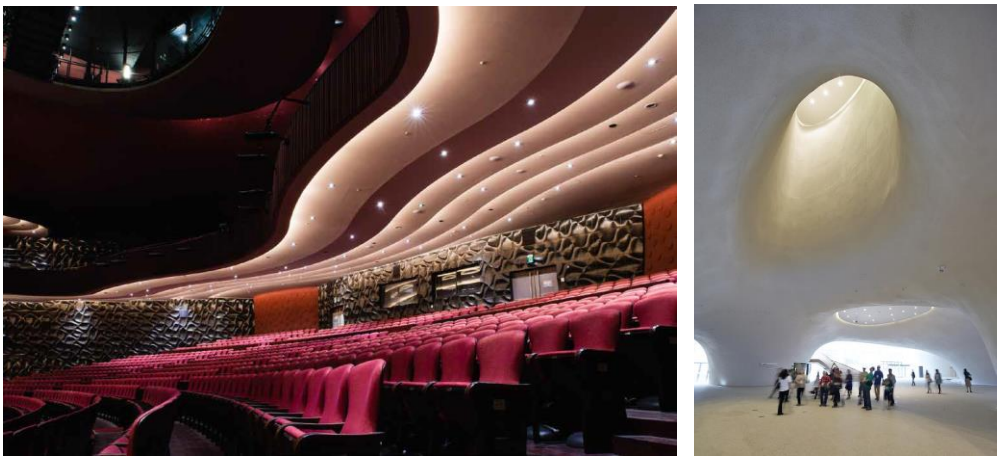

Figure 52: Toyo Ito Metropolitan Theatre Auditorium (Left) Cave-like Curved Space (Right). Source: National Taichung Theatre

While in Taiwan National Theatre and Concert Hall, wall and floors were crafted with wood designs that produce a balanced acoustic effect. Where the golden carved deco improve the sound quality by absorption of sound due to sound reflection energy, to meet the international reverberation time control standards at 1.7 to 2.1 seconds. All the walls and floor are designed in smooth form and order for natural absorb reverb sound.

On the other hand, Istana Negara auditorium design was based on the precedent studies that can commonly found during that time. By integrating the grandness of the palace elements into the curved timber and cement structure of the wall and ceiling, this will control the sound quality of the theatre experience. Istana Negara grandness does not stop inside the auditorium, but it also create continued path experience into the lobby and other spaces.

4.4 Space Usage and Functions

4.4.1 Toyo Ito Metropolitan Opera House

Toyo Ito Metropolitan Opera House is framed by surrounding skyscrapers, which is lacking of green and organic nodes. Therefore the roof top of opera house was designed to cater for visitors as sky garden, where they can have a stroll at the top of opera house landscape. This space is perfect for outdoor concerts and outdoor screenings.

Figure 53: Toyo Ito Metropolitan Opera House Landscape and Roof Top Garden View. Source: National Taichung Theatre

Toyo Ito Opera House consist three different theatre i.e. grand theatre (2007 seats), the play house (800 seats) and black box (200 seats). The grand theatre depicts a European classical with organic curves on the ceiling and on the balconies. It is located at second floor with 1,502 seats on its second level, 432 on fourth level balcony and 74 box seats. The play house is modern and simple to its core shape, with a flexible, multifaceted space. The Playhouse able to cater 796 seats at the second floor, in many flexible layout character that allow the audience to feel close and middle of the actions. The Black box is located in the basement two connected near to the open outdoor theatre, which was created for endless possibilities of artistic use. The Black box was designed to cater for 200 audience with a free –form for all types of experimental theatre performance use. The outdoor theatre covered about 1,000sqm with romance overflow round design, covered with transplanted trees.

Figure 54: Grand Theatre Seating. Source: National Taichung Theatre

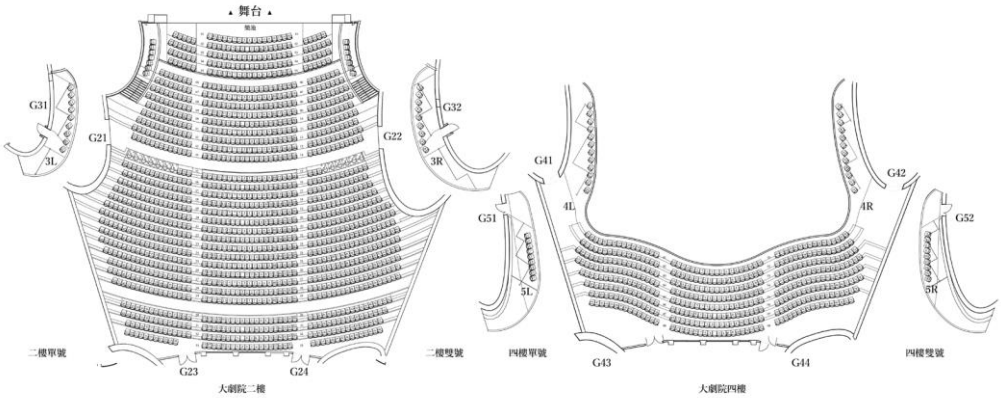

Figure 55: Grand Theatre Seating Layout. Source: National Taichung Theatre

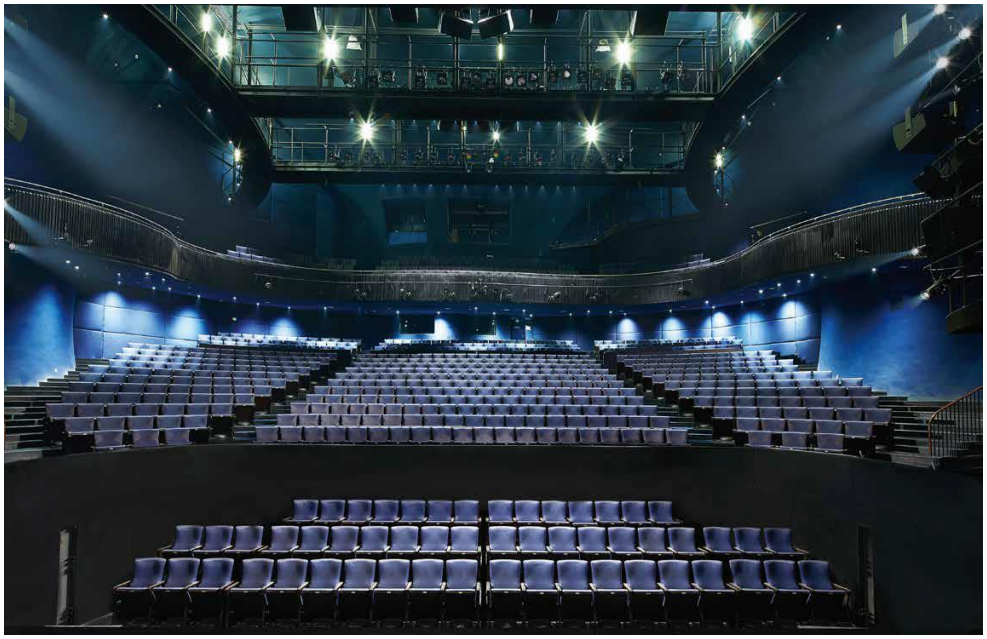

Figure 56: Playhouse Theatre Seating. Source: National Taichung Theatre

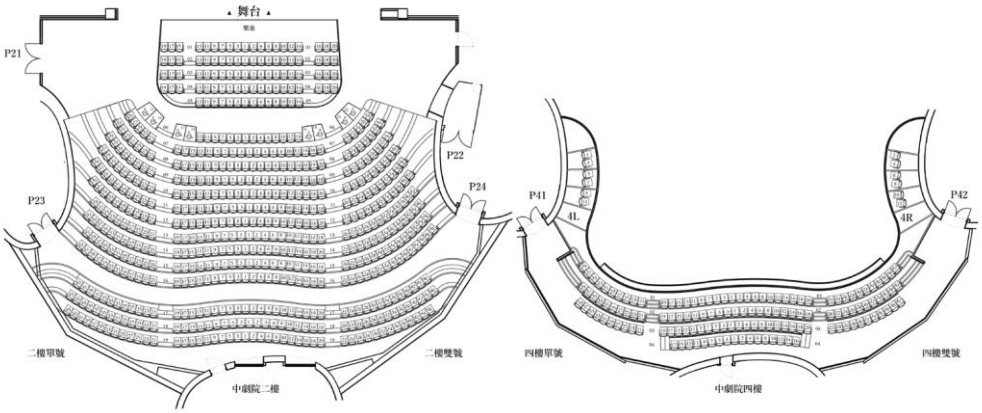

Figure 57: Playhouse Theatre Seating Layout. Source: National Taichung Theatre

Figure 58: Black Box. Source: National Taichung Theatre

4.4.2 Cloud Gate Dance Theatre, Taiwan

The main building of cloud gate were surrounded with greenery and housing, that housed a 450 seats theatre, two studios that are flexible to be converted into black box and mini studio. The outdoor of main building were design to cater for 1,500 people's event. Besides this the main building were designed to house an exhibition space, office and rehearsal space for both performance and technical staff groups. Café and resource space were designed independently from the main building that surrounded with planted trees.

4.4.3 National Theatre and Concert Hall Taipei

National Taipei Concert Hall and Theatre house four indoor performance auditorium (National Theatre, National Concert hall, recital hall and experimental theatre) and four outdoor plazas that can be used for performance space. The theatre is designed with traditional Chinese Ming and Qing architecture, with royal hipped roof like the Forbidden City Beijing. The theatre is designed to cater a total of 1,524 seats, stage front act as an extension for 70 paxs orchestra pit or for two extra rows of audience seating. The 13m diameter stage can be rotate 360 degrees as different stage scene. The National Concert Hall designed to cater for 2,064 seats that divided into three floors. The hall is installed with a magnificent organ nearly five meters high made from both metal and wood. The Rehearsal studio available at both National Theatre and the National Concert Hall and can be used for preparation and practice for musical, dance or drama. The Experimental theatre located in 3rd floor of national theatre catering to 179 -242 people for troupes and avant-garden performance.

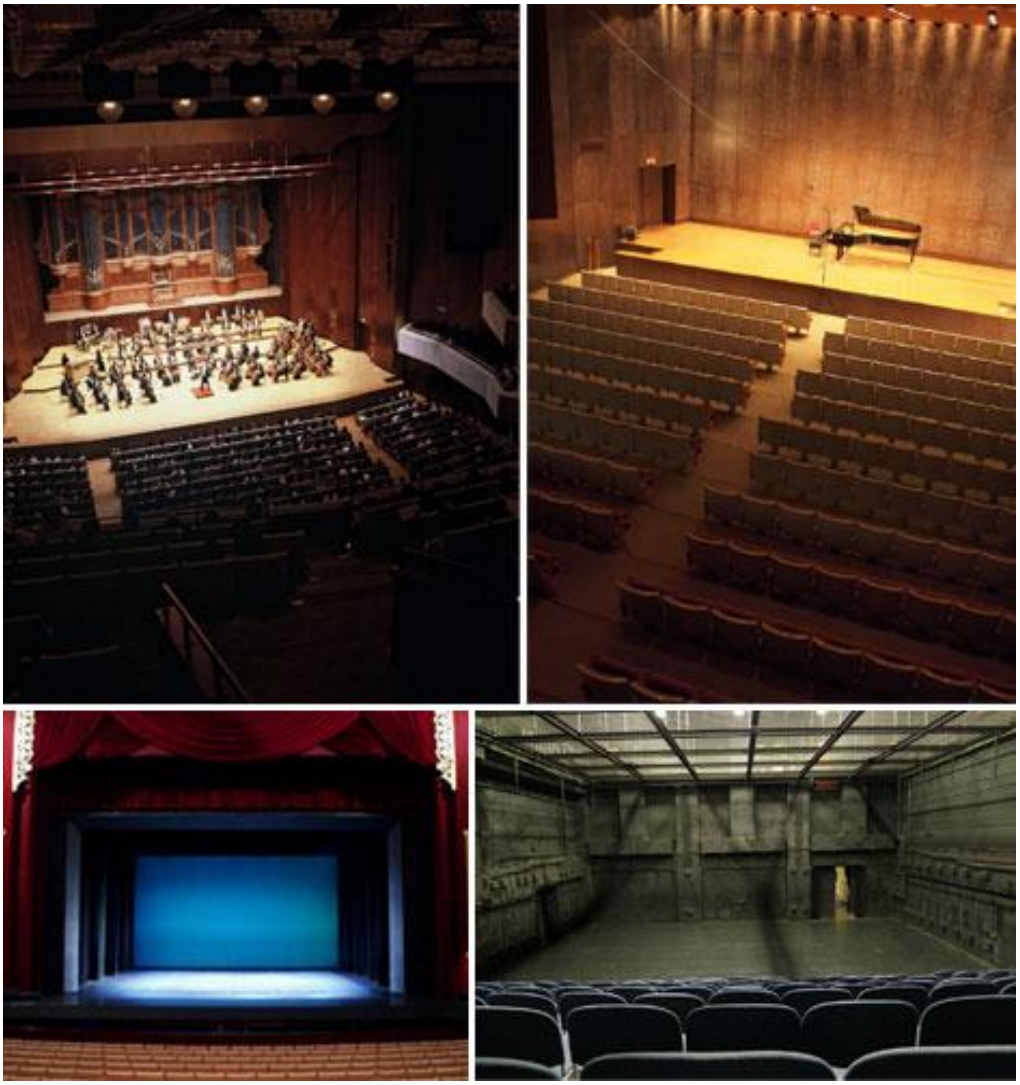

Figure 59: National Theatre (Bottom Left), National Concert Hall (Top Left), Recital Hall (Top Right), Experimental Theatre (Bottom Right)

The Recital hall located at basement one of the concert hall, to cater to 363 peoples. It is an auditorium that holds for small performance as recitals, chamber music and workshop space, while the outdoor plaza, is catered for 60,000 peoples listening to live concert. The four areas of plaza, the main plaza, the theatre terrace, the concert hall terrace, and the terrace which suitable for broadcasts and open air performance.

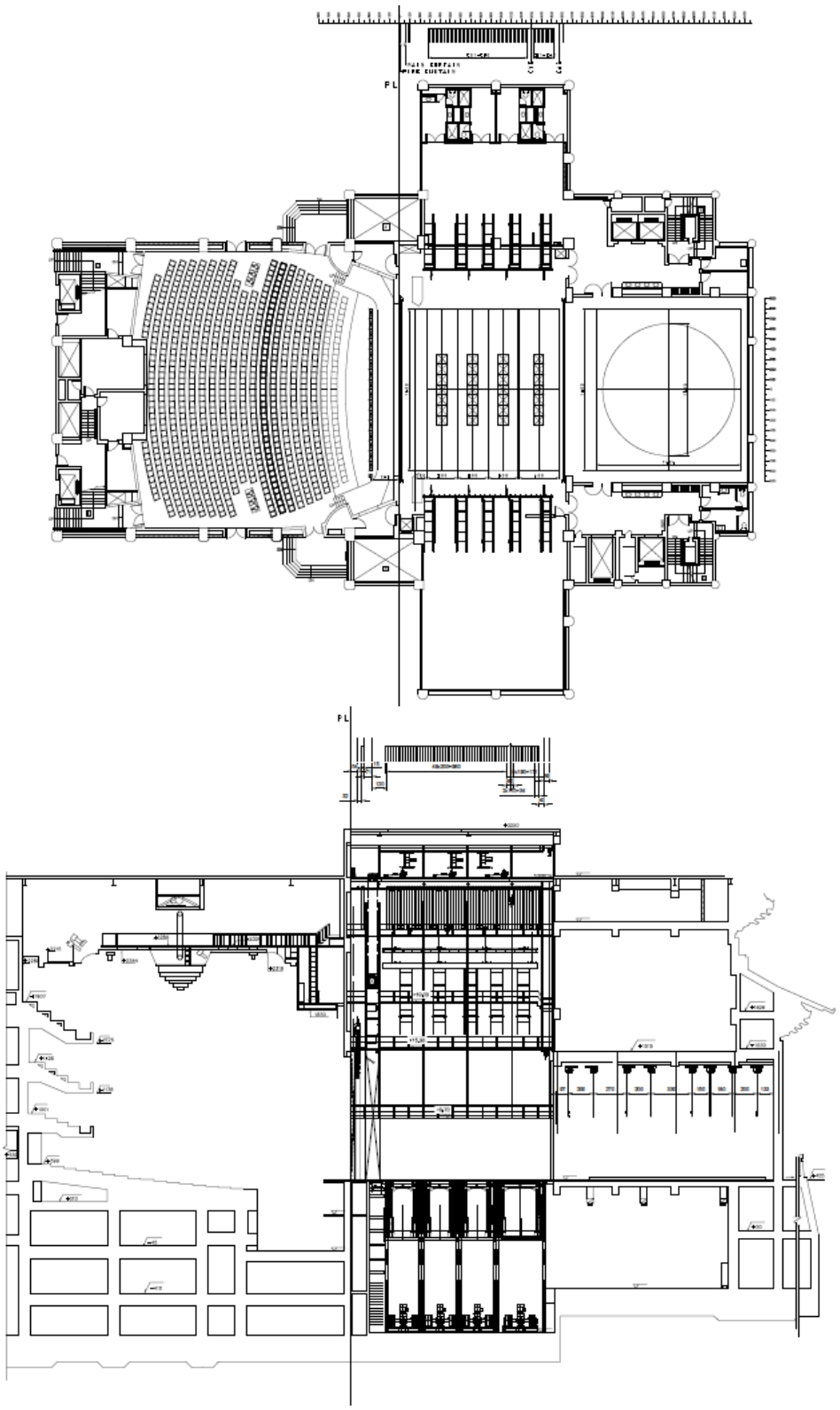

Figure 60: National Theatre Seating Layout (Top) National Theatre Sectional Elevation (Bottom). Source: National Theatre and Concert Hall of Taiwan

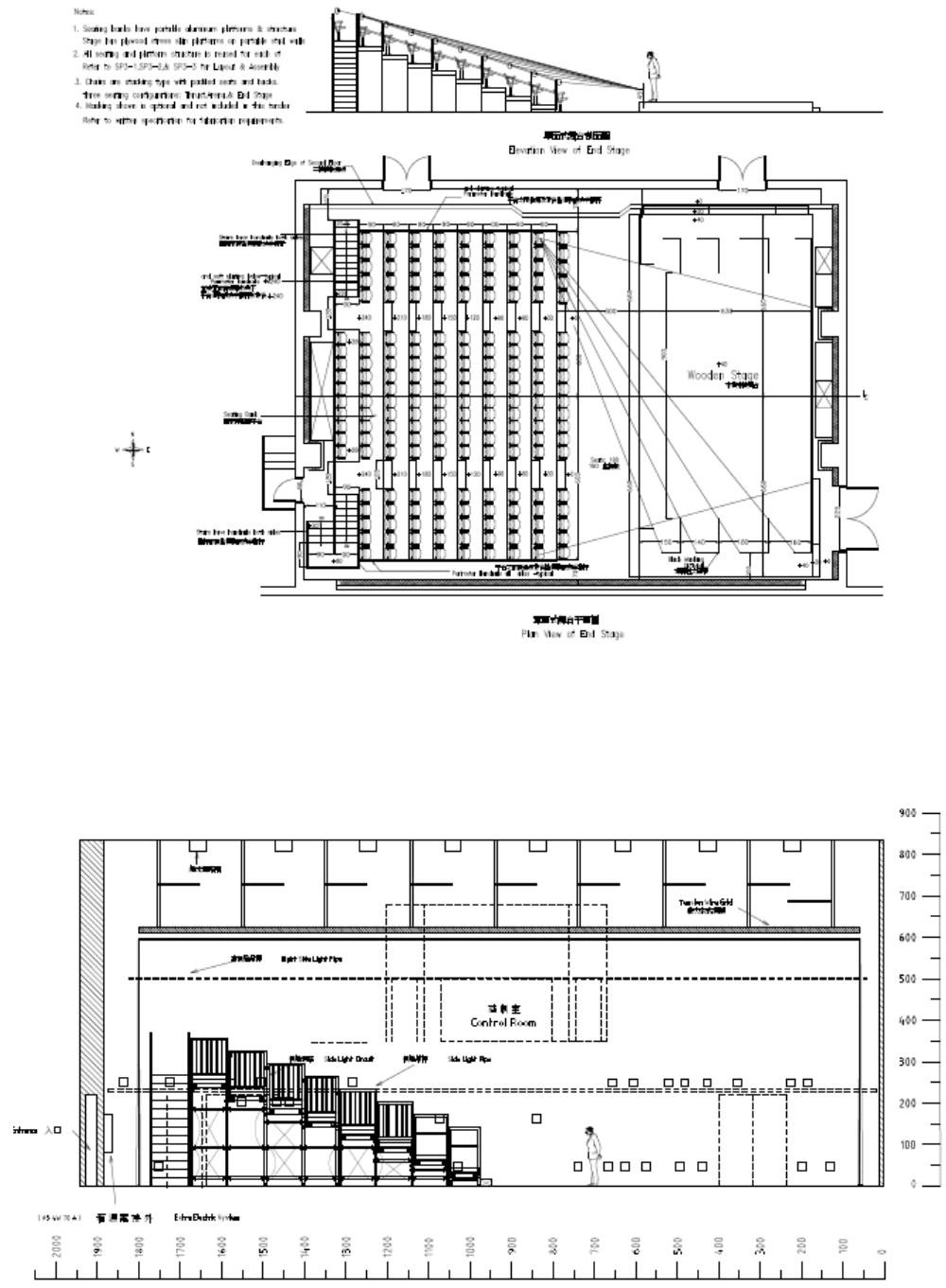

Figure 61: Experimental Theatre Seating Layout A (Top) Experimental Theatre Sectional Elevation (Bottom). Source: National Theatre and Concert Hall of Taiwan

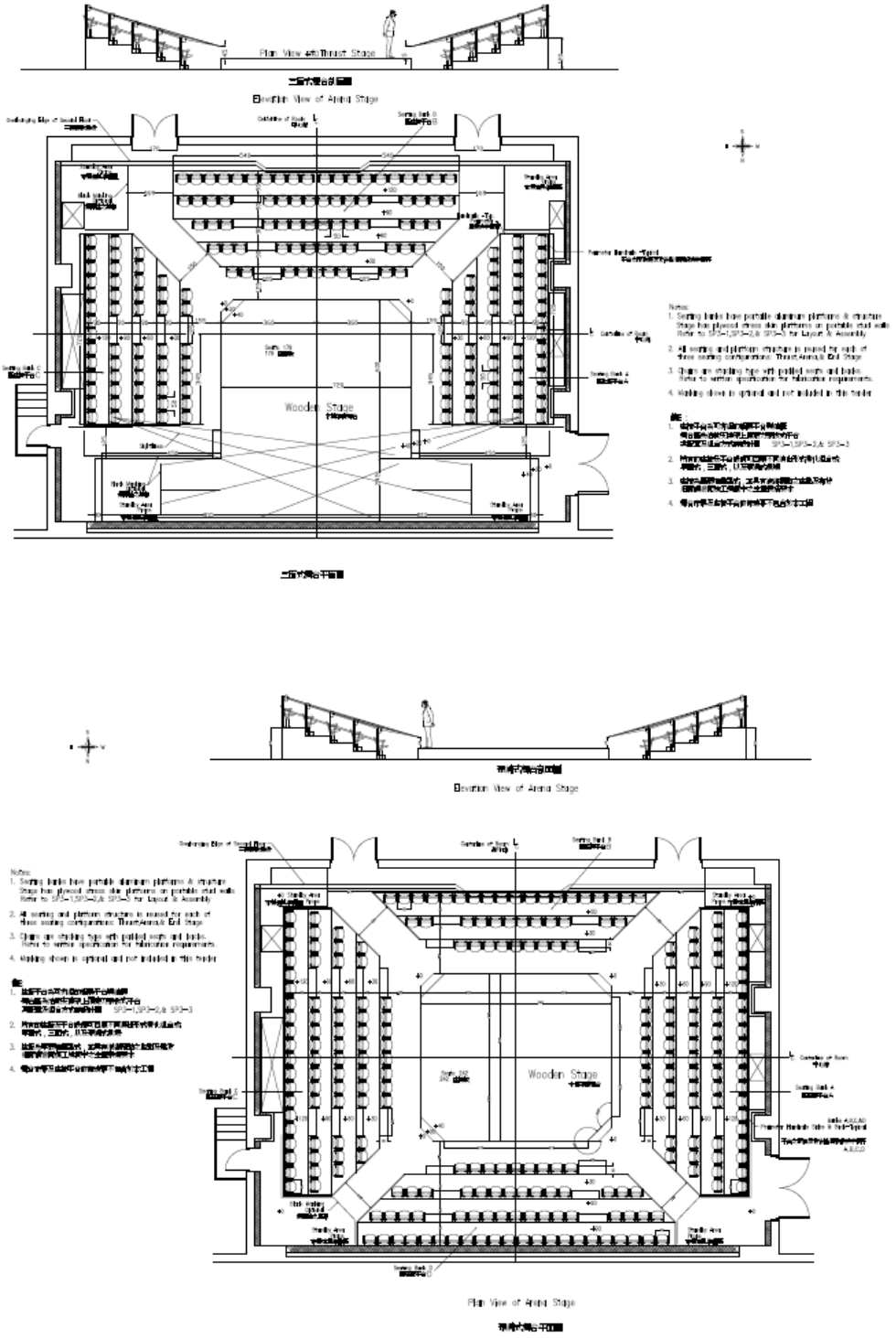

Figure 62: Experimental Theatre Seating Layout B and Sectional Elevation (Top) Experimental Theatre Seating Layout C and Sectional Elevation (Bottom). Source: National Theatre and Concert Hall of Taiwan

4.4.4 Penang Performance Art Centre

Penang Pefromance Art Centre was housed with two stages that are call Pentas One and Pentas Two, where “Pentas” mean Stage. Stage one design to cater for 303 pax, where the stage is without riser, and multi-use from opera and dance to musical performances. The design layout of the stage is a proscenium type. Both sides of the wall were cover with brick works that form as a texture and background for the theatre.

Stage two is an experimental design theatre that cater for 130 pax, suitable to be used for any experimental shows in the small scale. The experiment theatre layout are flexible to arrange depend on individual imagination.

In PenangPAC there are three different size of studios, size between 50 to 160sqm. They can used for any dance training or any culture workshop. As the interior space are designed with basic colour, that strike the observer eyes and act as the direction pointer to the user.

There are two gallery spaces, which are connected directly from stage one and stage two individually. Both gallery are in open floor plan that allow

flexibilities of any event use. It can also act as a foyer for waiting or intermission time for audience to rest.

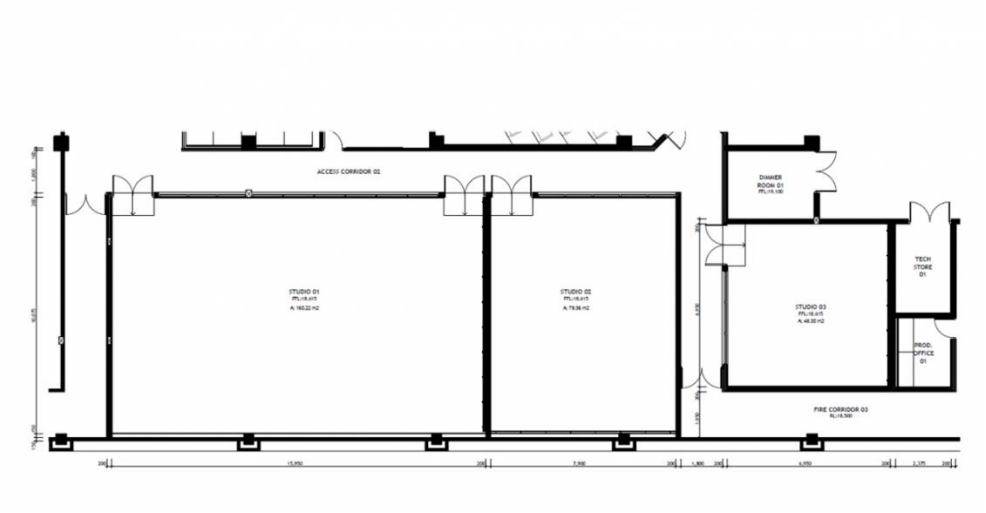

Figure 63: PenangPAC Studio Layout. Source: Penang Performance Arts Centre

Figure 64: PenangPAC Studio Interior. Source: Penang Performance Arts Centre

Figure 65: PenangPAC Lobby (Left) Admin Room (Right). Source: Penang Performance Arts Centre

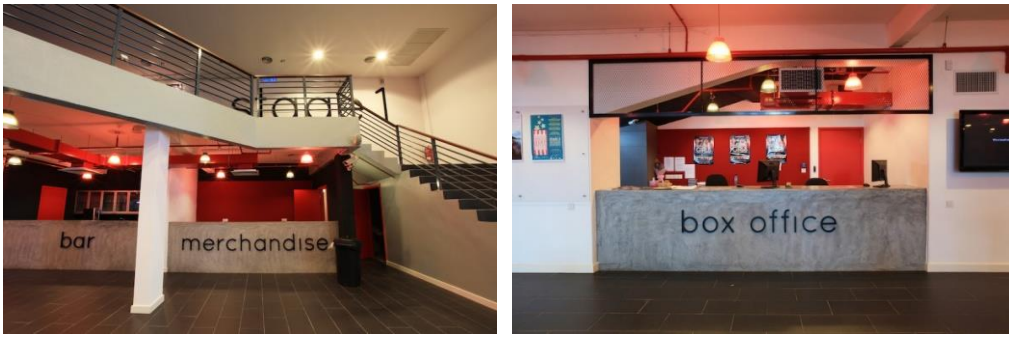

Figure 66: PenangPAC Facilities. Source: Penang Performance Arts Centre

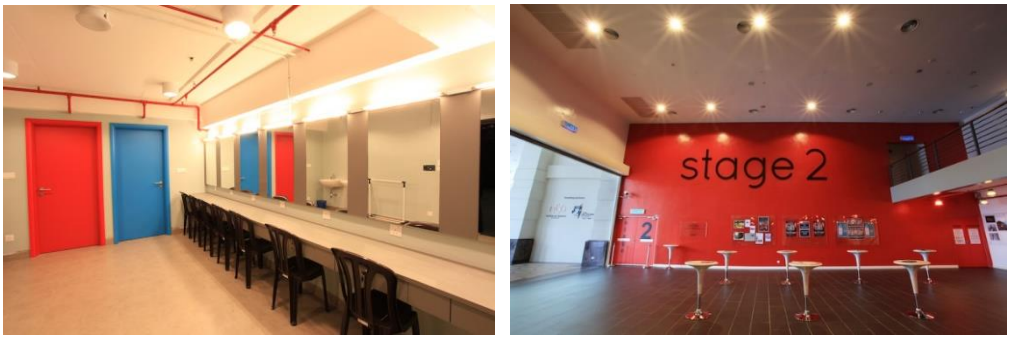

Figure 67: PenangPAC Dressing Room (Left) Ground Lobby (Right). Source: Penang Performance Arts Centre

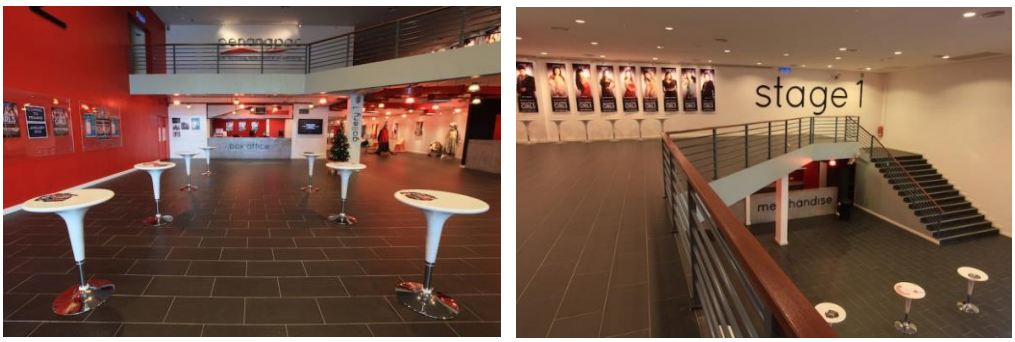

Figure 68: PenangPAC Lobby and Multipurpose Space. Source: Penang Performance Arts Centre

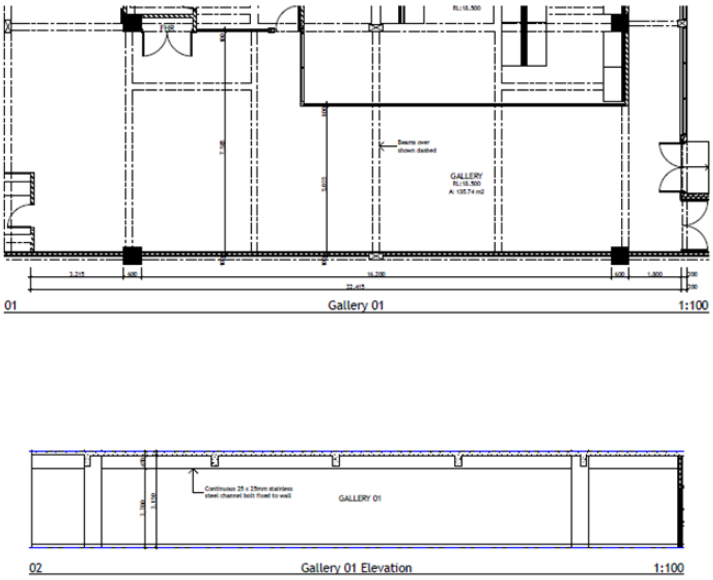

Figure 69: PenangPAC Gallery 1 Plan (Top) Elevation (Bottom). Source: Penang Performance Arts Centre

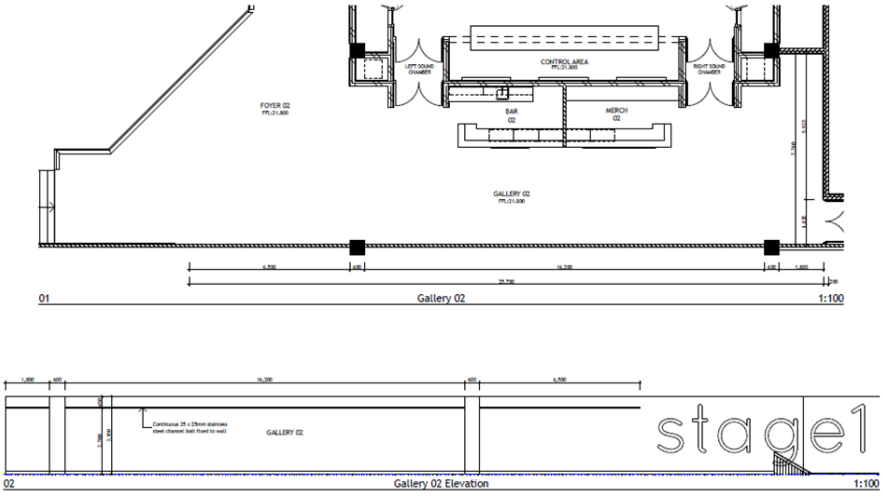

Figure 70: PenangPAC Ground Lobby/Gallery 2 Plan (Top) Elevation (Bottom). Source: Penang Performance Arts Centre

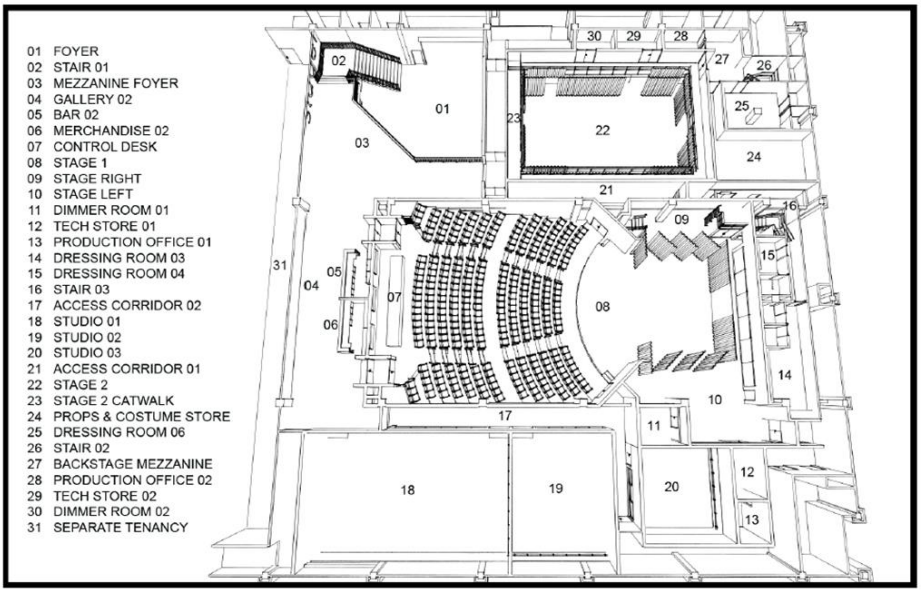

Figure 71: PenangPAC Pentas 1 and Pentas 2. Source: Penang Performance Arts Centre

Figure 72: Pentas 1 View. Source: Penang Performance Arts Centre

Figure 73: Pentas 1 View. Source: Penang Performance Arts Centre

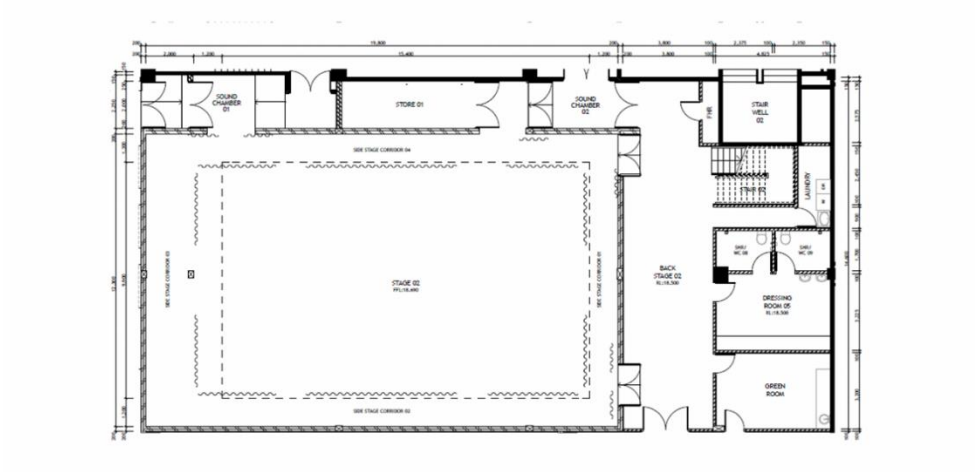

Figure 74: PenangPAC Pentas 2 Plan. Source: Penang Performance Arts Centre

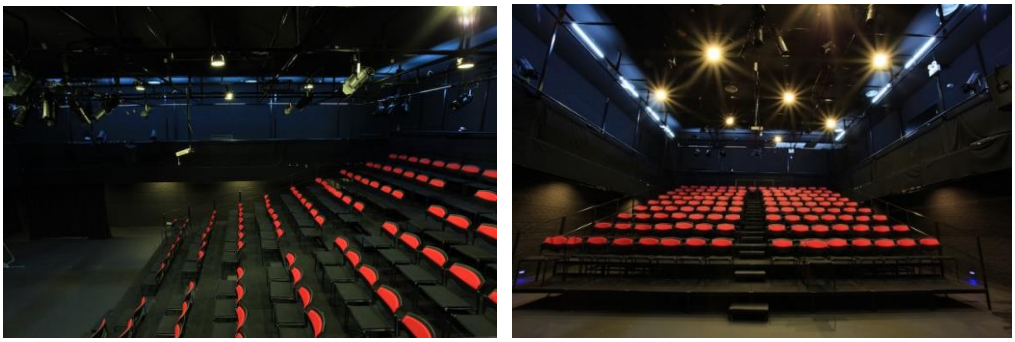

Figure 75: PenangPAC Pentas 2 Seating. Source: Penang Performance Arts Centre

Figure 76: PenangPAC Pentas 2 Stage. Source: Penang Performance Arts Centre

4.4.5 Esplanade, Singapore

The Esplanade is located in Singapore, near to Marina Bay and surrounded by sea, designed with two large domes that house for different function from indoor to outdoor plazas. Concert Hall, with capacity 1,630 seats and another 197 in the gallery. It is equipped with reverberation cambers and an acoustic canopy suitable for different performances, such as orchestral, choral concerts, amplified performances, seminar and award ceremony.

Figure 77: Esplanade Opera Concert Hall. Source: The Esplanade Singapore

The Theatre with 1,950 seats with traditional horse-shoe shaped performance arenas, draws closer the audience and artist experience. The seating comprises of four levels, with larger stage that is suit for Asian and Western performance. While, the proscenium arch and orchestra pit are adjustable, suitable for musical and opera, dance and music performances, dramas, film screenings, seminars and ceremonies.

Figure 78: Esplanade Concert Hall. Source: The Esplanade Singapore

The fan-shaped 245-seat Recital Studio is ideal for performances, from chamber music and solo recitals to amplified concerts. In addition, to its timber flooring, the studio's wall and ceiling furnishes are specially designed to ensure superb acoustics.

Suitable uses:

- Chamber music
- Solo recitals
- Amplified performances
- Film screenings
- Seminars / conferences / product launches

The Theatre studio is an intimate setting for experimental theatre and dance presentations. It is a highly flexible performance space that offers various configurations with retractable seating that can accommodate up to 220 people. Equipped with highly adaptable staging, lighting and sound systems, it can meet different staging demands.

Suitable uses:

- Theatre and dance productions
- Film screenings
- Seminars / conferences / product launches

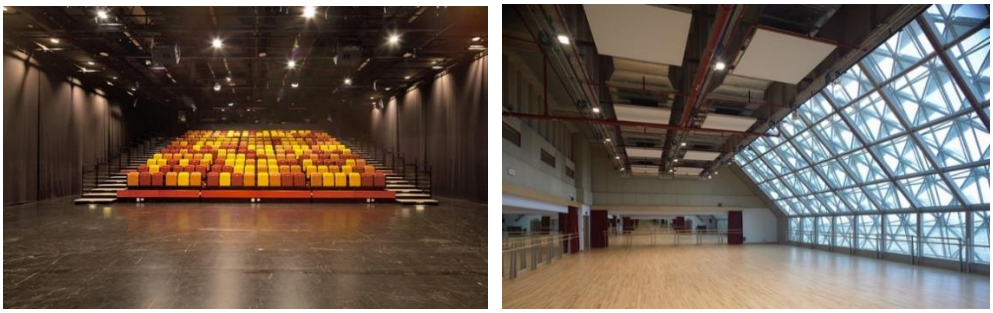

Figure 79: Theatre Studio (Left) Rehearsal Studio (Right). Source: The Esplanade Singapore

The Rehearsal Studio, similar in size to the Theatre Stage, the Rehearsal Studio is specifically designed for full rehearsal opportunities for major productions, such as in dance or theatre, and it can also be used for various types of workshops. Hirers of the main performing venues (Concert Hall, Theatre, Recital Studio and Theatre Studio) have priority booking for the Rehearsal Studio.

Suitable uses:

- Theatre productions and workshops
- Dance productions and workshops
- Seminars/ conferences/ product launches

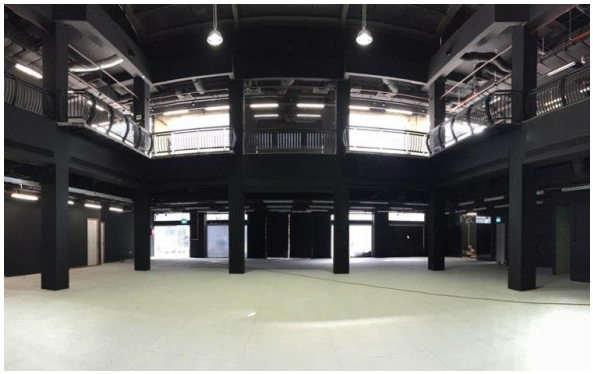

Figure 80: Annexe Studio. Source: The Esplanade Singapore

Located next to Esplanade Mall, the Annexe Studio is a raw and flexible two-storey space, suitable for artist residencies and development programmes, rehearsals, workshops and masterclasses. Converted from a dance club, the studio is another versatile performance venue in Esplanade. These are excellent hosting areas for private or corporate functions and events. The foyer spaces and hospitality suites that the Theatre and Concert Hall have to offer can cater to most functions, big or small.

With standing capacity between 200-350 persons, the Foyer areas can be used for receptions in conjunction with an event or performance in the Concert Hall or Theatre. These spaces offer a view of the city and Marina Bay, and can also be used independently for private and corporate events.

The concert and theatre suites is an exclusive experience, the elegant and intimate Suites offer a unique setting for private or corporate receptions and events.The Bay Room concert hall with a spectacular view of the Marina

Bay, the multi-purpose Bay Room is an ideal space for receptions, talks, workshops, private and corporate events.

Bathed in natural light in a room with high ceiling and a timbre wall, the Tall Room offers private respite and an exclusive experience for corporate receptions and events.

Figure 81: Roof Terrace View To Marina Bay. Source: The Esplanade Singapore

Dubbed as one of the best locations to take in the breath-taking view of Marina Bay, the Roof Terrace is a popular spot among Singaporeans and foreign visitors. There is landscaping with manicured lawns, shrubbery and small trees, complemented by seating areas, so that visitors can rest or find the perfect photo opportunity.

Figure 82: The Edge Open-air Performance Space. Source: The Esplanade Singapore

With the Marina Bay waterfront as its backdrop, The Edge is an open-air space often used for festivals and special events and is suitable for medium or large-scale performances.

Architectural twin domes seat on amid lush greenery as the roomy expanse of building entrance has been transformed into a wild garden landscape. Different types of trees that can be found at the garden such as Gelam Tree, Sea Tristania, Yellow Rain Tree, and Rainbow Gum Tree. While user can rest on the wooden benches provided, admire the minimalist water features and take in the scents and colours of 26 plant species that help enhance garden's biodiversity.

Jendela (Visual Arts Space) is the only dedicated visual arts exhibition space at Esplanade, which features a dramatic view of Marina Bay. Located on the second floor, it is unique for its distinctively curved gallery with louvered windows. Singapore and international artists have shown their works here. Some have explored the uniqueness of this space through creating site-specific works.

The Concourse, fronting the main entrance to Esplanade, is a central meeting point for many visitors to the centre. The flexible space is often home to captivating visual arts installations and in the evenings, the Concourse transforms into a performing space for talented amateur, semi-professional and professional artists from Singapore and around the world.

PLAYbox is a dedicated space for young arts lovers and their families to discover and participate in imaginative play. This children's arts space includes a reading corner and outdoor play area, and hosts a range of activities including storytelling sessions and self-guided craft activities.

The 85-metre long passageway connects the centre to Citylink Mall and City Hall MRT, allowing visitors easy access to Esplanade. To enhance one's journey to the arts centre, the Tunnel often showcases visual arts installations and creative works. These exhibitions and installations are updated regularly.

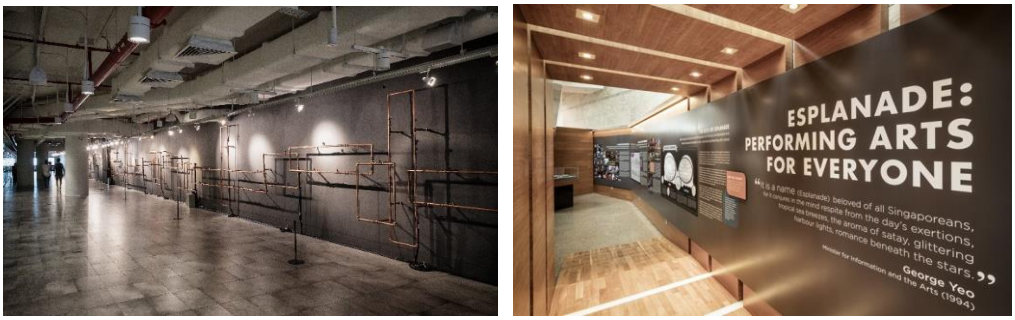

Figure 83: Passageway Exhibition and Installation Space. Source: The Esplanade Singapore

Located at the Upper Concourse, Passages is an exhibition space that is open to the public. Visit the exhibition to find out more about Esplanade's history and its place in the development of the arts in Singapore.

TributeSG is an exhibition space that honours pioneers who have contributed significantly to the development of the arts in Singapore—featuring the arts community's most senior members, with a focus on those in the performing arts.

Festival corner designed as a flexible space that caters to the changing character of the festivals and series that happen here all year round, the Festival Corner is a welcoming public area that hosts a wide range of events and activities. That allow user to performance with workshops and talks, exhibitions and meet-the-artists sessions in this cosy space at the Concourse.

Theatre Street is the passageway between the Esplanade Mall and the Concourse. Lining this street are Skylight Cones, which allow sunlight to pass through and function as unusual exhibition spaces for visual arts. While link to the outdoor park that also display number of public art exhibition.

4.4.6 Culture Palace (Istana Budaya)

Istana Budaya houses a main theatre name as Panggung Sari that could caters to 1,386 pax. The stage was a proscenium stage with two tiers of balcony seating and six to eight boxes, for the audience to choose.

The Lambang sari that cater for 280 pax, designed for experimental use that consider as black box design, where the seating design are flexible to change to suit the performance artist need. The classrooms could cater for total of 70 peoples. This allow the user to create as a dance studio space, workshop and talk function. Besides this, there are a big foyer at the ground floor that is used as a fix exhibition space that introduce the history and facilities provided by Istana Budaya Theatre.

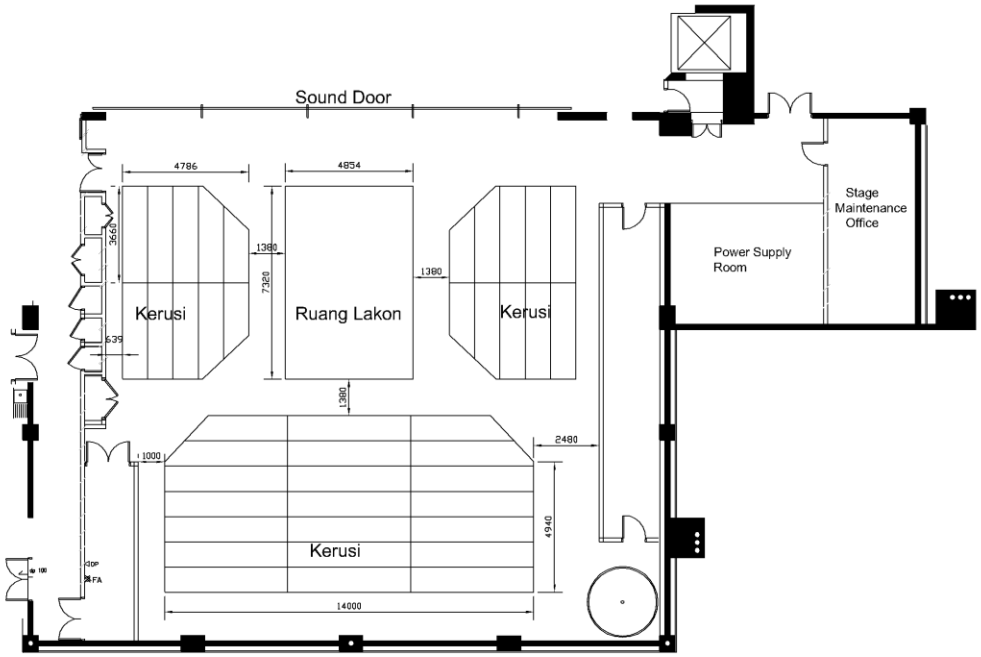

Figure 84: Experimental Theatre Lambang Sari Layout. Source: Istana Budaya

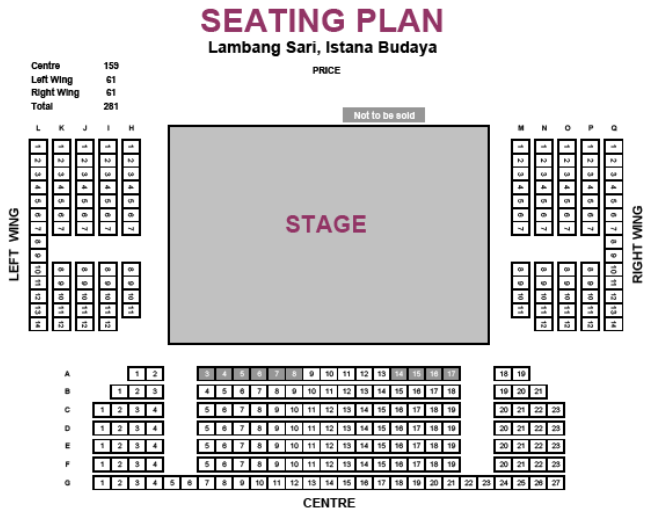

Figure 85: Experimental Theatre Lambang Sari Seating Layout. Source: Istana Budaya

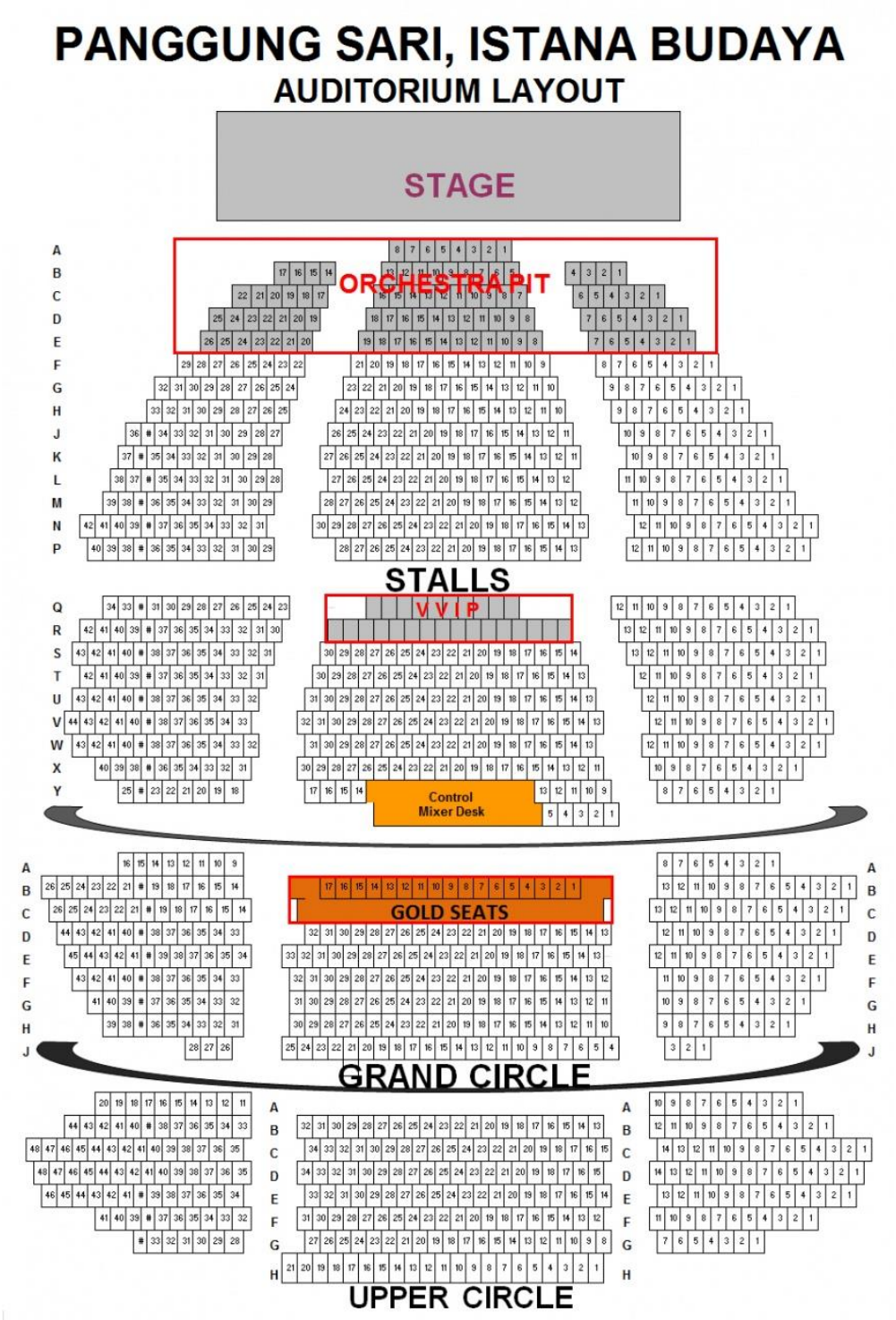

Figure 86: Panggung Sari Seating Layout. Source: Istana Budaya

4.4.7 Damansara Performance Art Centre

DPAC main theatre hall is a proscenium type, with a stage size 11,250mm width with depth of 7,250mm that raised 600mm from the ground. The height of the stage is 5,650mm from stage to proscenium, and 6,100mm from lighting bar. It can to cater 167 spectators in total.

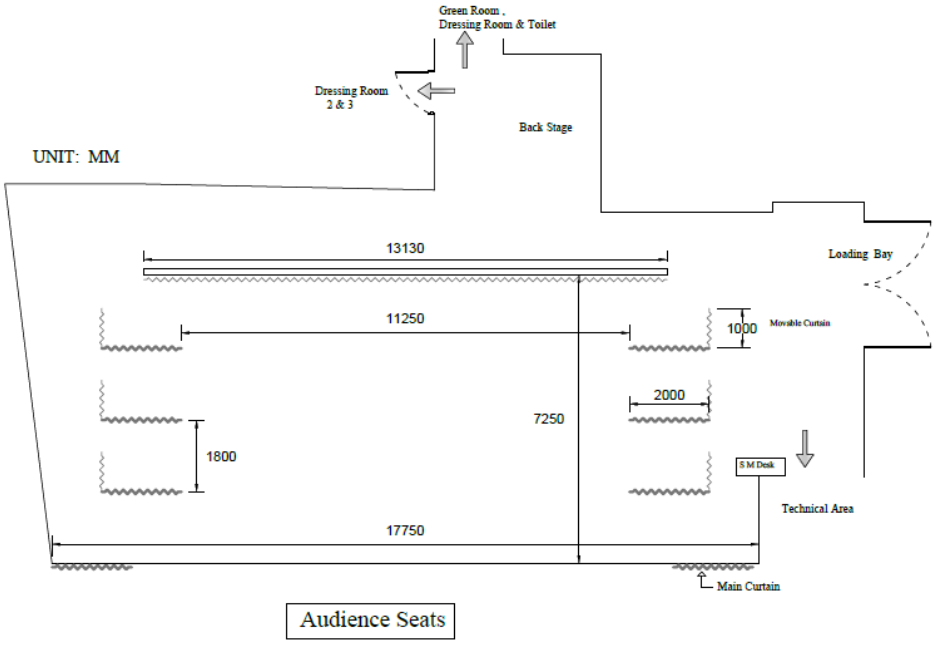

Figure 87: DPAC Main Theatre Stage Layout. Source: Damansara Performing Arts Centre

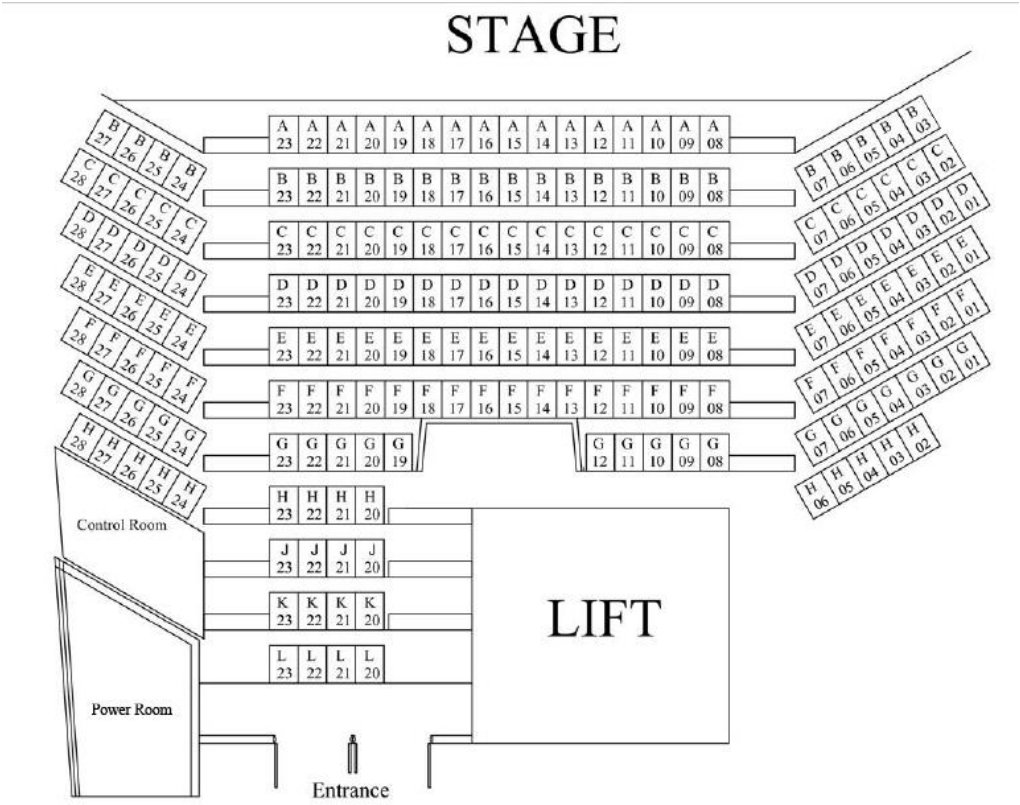

Figure 88: DPAC Main Theatre Seating Layout. Source: Damansara Performing Arts Centre

Figure 89: DPAC Seating (Left) and Stage (Right) . Source: Damansara Performing Arts Centre

The Experimental Theatre in DPAC is allowed for small scale dance, drama, and musical production for minimum able to cater for 120 seats capacity. The layout of the seat are free to change, within the box dimension from wall to wall 13m x 18m and height from stage to lighting grid 3.5m.

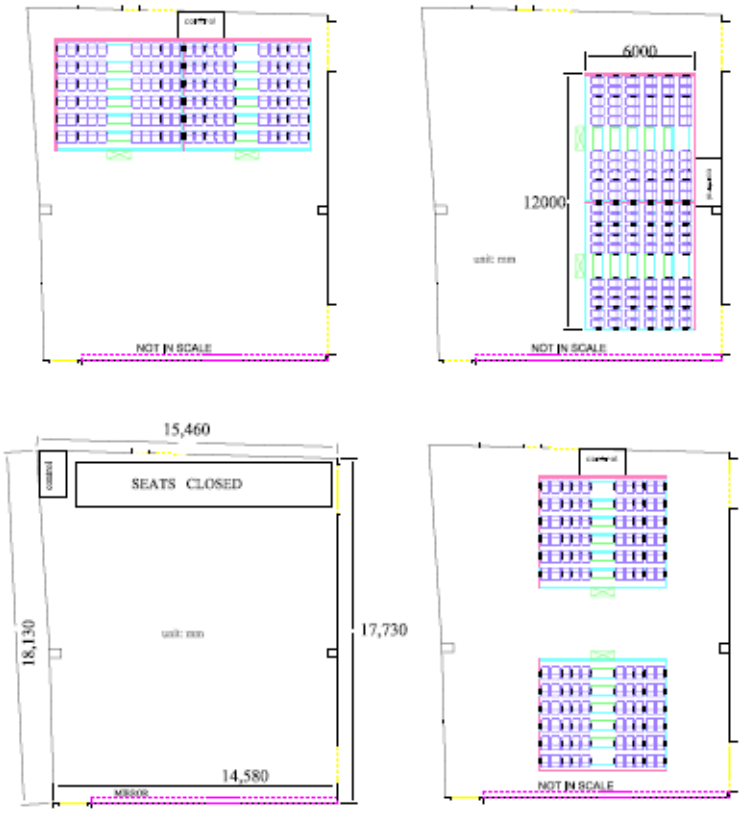

Figure 90: DPAC Black Box Type of Seating Arrangement. Source: Damansara Performing Arts Centre

Figure 91: DPAC Dance and Rehearsal Studio. Source: Damansara Performing Arts Centre

There are two studios facing outside that allow the penetration of light into the space. Studio one dimension 13m x 11m and studio two dimension 10.1m x 7.5m, which is designed to suit as a rehearsals, workshops, audition, classes and etc.

Figure 92: DPAC Contemporary Gallery Space. Source: Damansara Performing Arts Centre

Within the limited space, a light and airly indoor contemporary gallery is provided. The exhibition corridor provides a unique exhibition space to present individual artist or students' works. While at the foyer, the space suitable for cocktail parties and other functions.

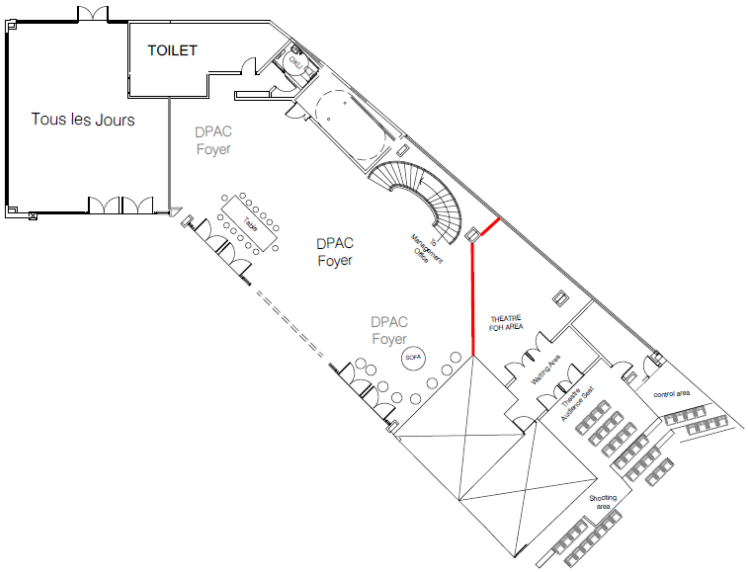

Figure 93: DPAC Ground Plan. Source: Damansara Performing Arts Centre

4.4.8 Kuala Lumpur Performance Art Centre

KLPAC Pentas one or stage one is among the largest performance space in this theatre that could accommodate 504 peoples in total. The stage designed in a semi-proscenium style which suited for large performance productions range from musical, concert and dramas. The stage dimension with opening 14,000mm wide and adjustable height between 7,680mm and 5,680mm. The depth from the opening to the cyclorama seating is approximately 8,500mm. And the height of rise of the stage is same levelled with the first row of seating. At the front of house before the main entrance to Pentas one, features a bar and standing room for hosting cocktail and others pre-show activities.

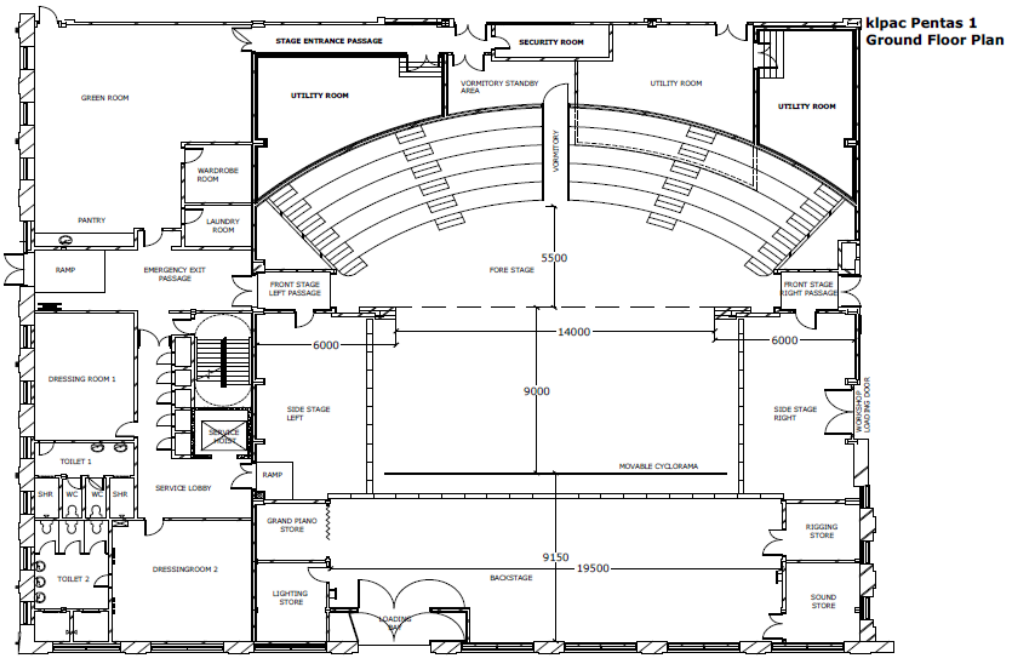

Figure 94: KLPAC Pentas 1 Floor Plan. Source: Kuala Lumpur Performing Arts Centre

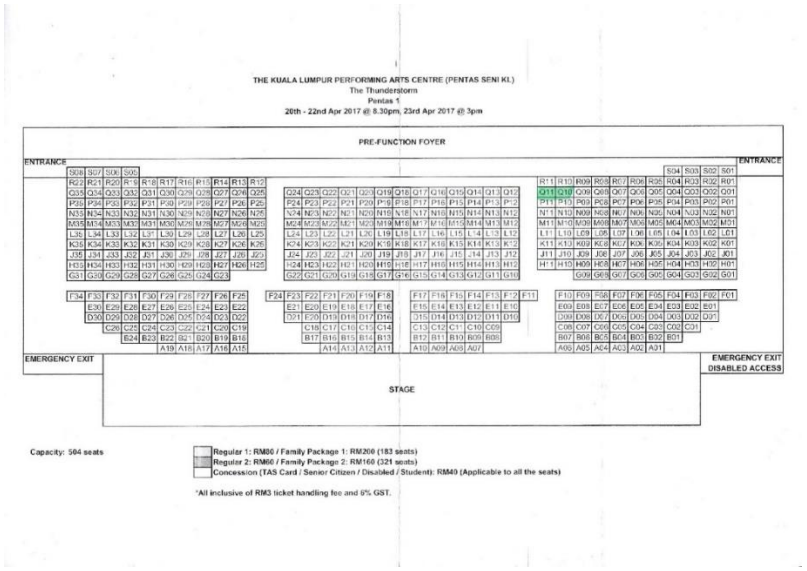

Figure 95: Pentas 1 Seating Layout. Source: Kuala Lumpur Performing Arts Centre

Pentas two can be configured to house 190 seats, which a fully equipped Black Box theatre, that is mainly used for experimental productions which allow to setup the layout plan of the seating depend on their need and limited imagination. Besides, it can be set as an arts gallery space for hosting exhibitions. The dimensions of the space, from wall to wall are 15,600mm by 22,400mm, with a catwalk connected at the mezzanine floor of Pentas two, which is surrounded with twelve control system docking for prompt, lighting and sound setting.

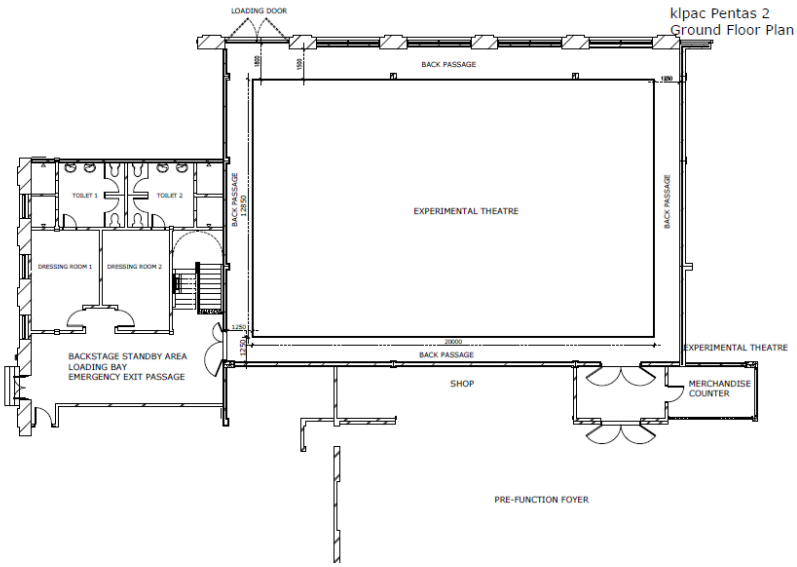

Figure 96: KLPAC Black Box Floor Plan. Source: Kuala Lumpur Performing Arts Centre

KLPAC also provide a small mini theatre space with allocated seating for up to 100 people. The Indicine that commonly suitable to be used as cinema projection and sound, made for art screening and films. The venue highly suitable for mini productions, forums, music and etc. Indicine comes with simple lighting and audio setup.

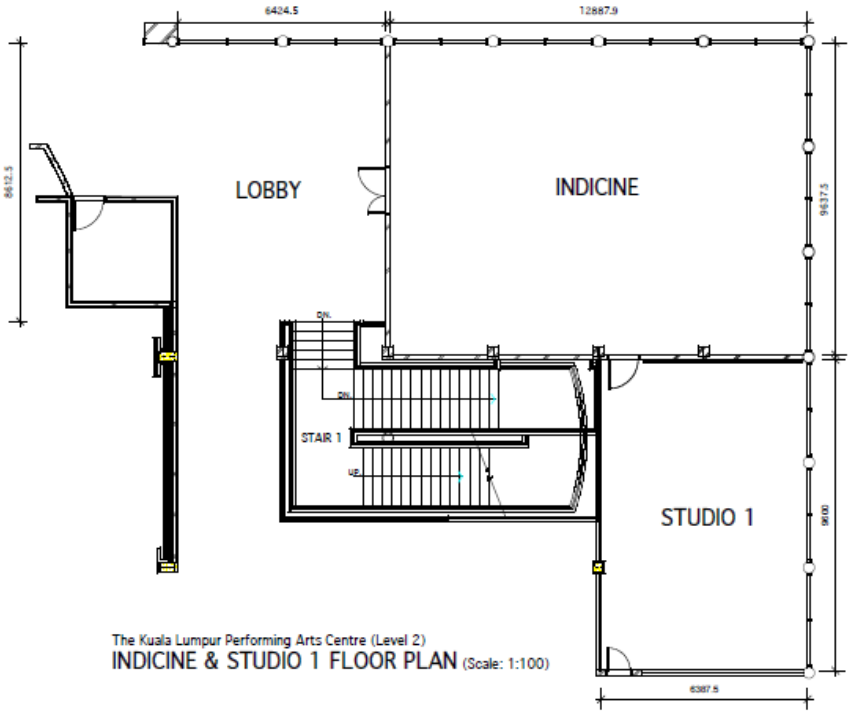

Figure 97: Indicine Studio. Source: Kuala Lumpur Performing Arts Centre

There are in total of nine different sizes studio, which can be used for dance or music practice. Among the nine studio, one can be used as a rehearsal studio. KLPAC landscape and open outdoor space allow for any photo-shoot and pre-wedding use. This can be the way for the theatre be maintain side income.

4.5 Accessibility and Connectivity

Accessibility and connectivity are other factors that need to take into consideration as it influence the interaction of theatre with the surrounding community and user type. Without a proper planning on accessibility and connectivity from the road to the theatre, this will cause a relationship between the attended spectators to loss direction or uncomfortable with the path. Even the journey from car park to building entrance plan an important role in maintaining the interest of attended spectators. Locating the theatre on the strategic location helps to promote the culture theatre to people easily, as connectivity from home to theatre create conveniences for the spectators.

The Toyo Ito Metropolitan Opera House in Taichung is located at the city centre surrounded by all offices and commercial skyscrapers lacking in architectural elements and green. This theatre can only be reached by buses and cars, while parking space is located on the basement of the building and small portion on the ground floor hidden by the building. This helps to improve the friendly and welcome for the public use, as no car or road cutting into the plaza. The theatre surrounded by a few water feature element which help to bring down the rigidity of the building, and create the path that allow the people to follow from one corner of the plaza another and into the theatre spaces.

The Cloud gate theatre located 20km away from central of Taipei is to deter large crowd from coming, as this building is considered a private institution. But somehow it is still attractive for the visitors and with free shuttle bus provided for any performance spectators from Tamsui Metro station. This theatre is located near to some of existing museum and on the hill. Aside from VIP use, private drivers can only park their car outside from the theatre compound with five minute walking distance can reach the building. Tucked beneath greeneries and trees, this help to reduce sound pollution and traffic congestion within the setback of the building.

The Taipei National Theatre and concert hall is located in the strategic location that are easily reachable by few MRT line and public buses. All the parking lots one located at the basement of its plaza, and located near to school, university and offices. The plaza and landscape not only be a part of the design on architecture of artistic performance space but them also provide a proper path that create a shortcut from all direction that intersect the existing city master plan.

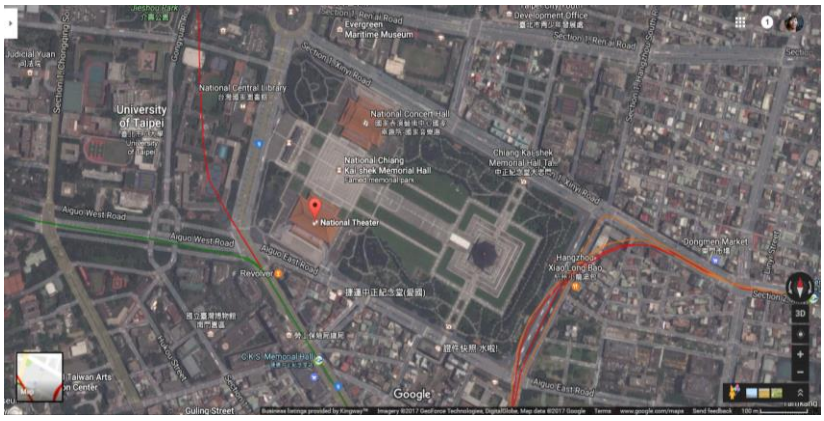

Figure 98: Overall Location Plan of Taipei National Theatre and Concert Hall. Image downloaded and edited from google map in July 2017

PenangPAC is located on the 4th floor of E&O Straits Quay retail development that located at Tanjung Tokong seaside, which is 7km away from city centre Georgetown. This it can be accessed by public transport and Rapid Bus. The surrounding landed housing is connected with a jogging path that located near to the seaside, joining directly to the Straits Quay Marina space, with parking spaces provided at the podium floor of E&O buildings.

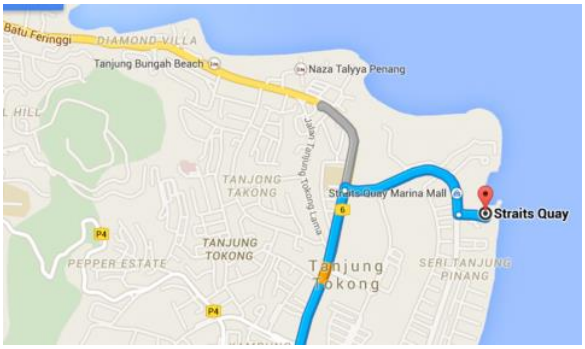

Figure 99: PenangPAC Location Plan. Image downloaded and edited from google map in July 2017

Istana Budaya is located at the outskirt of Kuala Lumpur city centre link to the main road of Jalan Tun Razak, next to the National Art Gallery. The distance from Kuala Lumpur city to the Istana Budaya is around 5.6km. It only can be easily reached with own transport and buses. Due to Jalan Tun Razak is the main road of Kuala Lumpur, most of the traffic jam start to build up here and getting to Istana Budaya for a show is troublesome and time consuming.

Figure 100: Istana Budaya Location Plan. Image downloaded and edited from google map in July 2017

CHAPTER 5.0

ASPECTS OF INTEGRATION OF ARTISTIC PERFORMANCE SPACES

Existent of Artistic performance spaces places many role in urban fabric today. Besides, going up high like a tower, artistic performance space or theatre as iconic or monumental symbol of a place. Theatre stand to be more than just node and landmark for urban setting, yet it contribute to many different ways that suit to change of time and place for people as culture hub.

By breaking away from the surrounding form, the stand -alone structure aim to create space with clear purpose, the Tai Chung Opera House building is set for future to creating interaction between architecture, nature and human in more human ways. On most of the Sunday, Taichung opera house filled with people from all ages to use and interact with building organic quality that are lacking in their local place. Therefore the opera house has become a node and landmark for the community as celebration of cultures and interaction of people from all walks of life. On other hand, opera house welcoming accessible culture allow people to search their own personal freedom. This make the Taichung to become a leading-edge city with the present of iconic opera house at that area.

Figure 101: Cloud Gate Studio Surrounded by Trees as backdrop. Image download from http://taiwantoday.tw/news.php?post=102545&unit=20,29,35,45 in August 2017

Theatre space should be a place that welcoming people, even when there is no performance event happen. In Cloud Gate Theatre, which visitors are free to walk into the site, to explode the landscape and book store café. Within the landscape there are sculptures. Besides this, the indoor small gallery house contain elements that capture all the memories of cloud gate. The cloud gate theatre were designed more than just a performance stage, but a culture destination for everyone, and create a place for the future culture hub for Tamsui district.

Figure 102: Cloud Gate Book Store Café. Image download from http://taiwantoday.tw/news.php?post=102545&unit=20,29,35,45 in August 2017

The Taiwan National Theatre concert hall and memorial centre were conserve and turn from a Qing dynasty military used building, brings and promote awareness to the surrounding site. This create transformation from agricultural society into an industrial and commercial via Taiwanese Renaissance. The theatre has a role to promote Taiwan with arts, by proving services and performance that are rich in creativity and historical to preserve the art in Taiwan.

The integration of artistic performance space provide and improve the infrastructure for the demand of existing artistic talent and creative. For example, the Penang Performance Arts Centre act as catalyst to bring in the art industry in the Northern region of Malaysia. Besides providing a venue for artistic performance space, it is place for varied programme for public locally

and overseas to integrate which to nurture new young talents. It is an outreach platform for the arts to all peoples together.

Arts could transform lives of the place, by integration artistic performance space with urban fabric. As art itself could create and build confidence, which heal broken spirits and bring people together. The Esplanade in Singapore is a good example of a node for the community engagement by brings the art closer to every different background of individual via entertainment, education and engagement.

CHAPTER 6.0

IMPROVEMENT ON MALAYSIA ARTISTIC PERFORMANCE CENTRE

Malaysia artistic performance have reached international standard, in dance, opera, musical and etc. This encourage the local government on the awareness for having artistic performance spaces, which helps to develop and built the interests of local public. We have quite a few important artistic performance centre included, Istana Budaya and KL Performance and Arts Centre. But there are many improvement that can be done, to improve the existing artistic performance spaces. This study is important not only to be able to improve the existing theatre, more importantly to improve the skills and understanding further the kinds of new theatre that need to build in future.

Strategic location plays an important role in theatre development. Therefore transportation connectivity and surrounding community will help bring the artistic performance space to success. Public transportation such as public bus or LRT/MRT line helps the public to reach to the theatre easily without having to walk more that 15min journey. Besides to avoid traffic congestion. It allows student without car to participate in the event or shows provided by the artistic performance theatre. One of the example is Singapore MRT Master Plan, where people in Singapore can easily reach anywhere including the theatre space by MRT line.

Besides site selection which should be considered for new theatre project planning, the existing theatre can be improved by having a functional plaza and good landscape design. These elements plays the task to create function to the public and visitor. By creating a plaza or landscape not only influence the overall design of the artistic performance space, it somehow create a welcome force that allow the public to feel free to use. It is also important to have a variety number of zoning for landscape and plaza, this pocket space allow different age and types of user to use at the same times. In the meantime, landscape and plaza also act as informal outdoor performance space for the artists. In some cases, it might be a good platform to showcase their performance with a short trailer preview.

To have artistic performance built is easy but to maintain it need extra income from other sources. Therefore the retail space will be a possible method to supply income, where the retail space form as a secondary functional space for people to relax and entertain while waiting for the show time. In some cases, the retail space can be a place where artists could showcase their masterpiece in the retail lobby area. One of the example in the past, is the Crystal Palace that had a large centre corridor that link with high ceiling lobby space, which allow the artist to perform in big group. With retail as secondary spaces, this create a more vibrant surrounding.

There are not many types of stage layout that can be found nowadays. But this limitation are the source of energy that could bring our ideas and

understanding by giving the chance for the designer to express their ideas in how to bring the feeling of the dancer to the audient, and how the space could be designed to effectively allow the dancer to expressing their ideas and concept effectively.

Besides the main auditorium space, facilities also play a part in improving the artistic spaces in Malaysia. Most common issues that main artistic performance space such as Istana Budaya is facing, are the lacking of facilities such as number of training studio and functions, compared to private artistic space such as KL Performance Arts Centre. Due to the lack of facilities, it makes the retail outlets costly. Therefore, it is important to have the variety of facilities, space and function plan. This will improve the user experience, besides just a place for performing.

While artistic performance theatre are consider as a large and complex project in Malaysia. Most of the theatre design in Malaysia were designed to be iconic and landmark of a place that withstand the test of time. In Malaysia theatre design can be improved by designing a theatre that are standalone which create a contrast to the surround building or context. Only by this way, it could influence the public perspective towards culture performance and music. In the long term, it could change the awareness of Malaysians. But to create a contrast, it does not mean to be design it with a complex form or symbols by reflecting from any religion or race elements. It should be designed with inspiration from dance movement, rhythm or poem itself, as

culture performance is a culture education more than just an education and racial politics.

Innovative space approach is needed to improve the artistic performance space in Malaysia. Aside from just designing theatre as theatre, it is important to consider innovation in designing a theatre. As what Louis Khan stated in his book Silence and Light, a library design should not depend on the space provided for the library, the design of the library should be a meeting place between people and book. Therefore, artistic performance space in Malaysia can be improved by building form design and space layout design. Example of Cloud gate theatre space that are designed in a way that people are close to the natural surrounding outside. This view merged in the emotion of the space into the dancer and touch by the heart spectators. This suggest that, artistic performance is all about feeling from soul, senses and nature.

As Malaysia is located in tropical region, tropical sustainability will be a good approach to design the Artistic performance theatre. Biomimicry is an approach use to mimic the behaviour and characters of biological animal, inserts, or plants, as approach to improve the building structure technology and building sustainability. Artistic performance space does gain not much of income for the show, but have to bay for high annual maintain fees for acoustic features such as acoustic panels, seat materials and etc. When the building getting old, the energy consumption will increase even if there is no change in temperature in our country. Therefore by using biomimicry

approach, one can extant the building life more and save the energy needed in the first place. In Malaysia Tropical climate context, it involved the important studies of mechanism that used for water efficiency and sustainable properties, insulation and conserving heat, and used for communication with the external and the attraction of their colour by taking suitable inspiration from polar bears, penguins, and etc. Esplanade theatre will be the best study model to show it outcomes that reduce energy consumption of it building by 30% and reduce artificial lighting by 55%. Where the skin of it building act as insulator and shading device that isolating indoor and outdoor environment, yet natural light can go thought the interior spaces. Two rounded space frames that cover with triangulated glass elements and sunshades for providing outdoor view and solar shading envelope. By mimic the low-energy ways in which biology works, that avoiding heat gain with shading envelope to help cool down the building inside. This is because heat is transfer with radiation, evaporation, conduction and convection. By studies hot regions organisms, that avoid radiative gain by staying away from sun to minimise absorbing heat through conduction. This how been an issue for the existing theatres in Malaysia, where the maintenance is a problem and costly due to form of building itself.

CHAPTER 8.0

CONCLUSION

Since 2500-years ago, artistic performance space has been developed and examined, until today the advancement of both design and technology, the theatre design has become more complex. Nevertheless there is still space for improvement in contemporary architecture. We need to be careful not to inject modern thinking into design end, which will then create standard theatres that are no different than paper or fast food architecture in Malaysia.

From the case studies done in this thesis, the existing factors that contribute to the success and failure of performance space has been analysed. They can be easily observed from both internal and external layout in the selected case studies. The factors can be summarized into a few groups i.e. Architecture typology and building form; specification and materials; space usage and functions; accessibility and connectivity.

Within the limited choice of architecture typology of stage types, the artistic performance spaces form should not reflect from the limited choice. Even these requirements are very strict, still the designer have the freedom to do anything in respecting every one of the constraints. Only then designer could work intelligently by creating architecture and manage the conflicts.

Toyo Ito Metropolitan performance space is an example of unprecedented study of building form exploration within the confined technical auditorium typology.

Specification and materials from seating, lighting, acoustic, balconies, control of echoes and other aromatics set-up are the strict requirements in artistic performance spaces design. Mostly, it involve the collaboration with each individual experts, to improve the quality standard needed for the performance spaces. But somehow designer could play the role in changing and challenge the limit of engineering and technology for the performance spaces. It can be done turning the typical requirements into innovative strategies, just like both Toyo Ito Metropolitan performance space and Cloud Gate Performance centre had done.

Accessibility and connectivity direct to the artistic performance space will be the bonus to determine the success of venue. It allow the user to move freely without any difficulty to reach to the artistic performance space. One of the example that can be study from the National Theatre and concert hall of Taipei, where landscape and plaza created not only to allow the building merge with its surrounding but to improve the relationship with the surrounding peoples too. Within the margining between people, performance space and landscape, it connected to many public transportation and populated districts.

Space usage and functions of any artistic performance centre, influence the overall user experiences of the particular area. Even without a direct connection of access and connection by any public transportation. By having varieties of functions and usage allow the public user to use either for educational or third space uses. In the meantime, it also cultivating the public user to introduce new programme that create vibrancy for the space. Example, Cloud Gate Performance centre that is located outside the city centre area, but still can became important landmark of that area that full of memories.

The presence of artistic performance spaces in any urban settings, will bring impact to development and growth of the local economy. Artistic performance space can to be a standalone or iconic building that not only to attract peoples from the public level, but create a multi-functional venue for them to use. It can be a place of celebration and node for the people with different level to interact and create vibrancy. Even if the iconic building might be design as a private place and hidden but easy to reach, will turn to a culture destination. Artistic performance space can also be a memorial place, where it integrate with existing significant memorial building, which helps to create the awareness and promoting culture and history to the people at that area. More importantly, the integration of artistic performance space, act as catalyst to improve the surrounding environment and setting.

These bring in the thinking, on what can be done to improve the design of artistic performance space into self-sustaining iconic landmark building in Malaysia. In this tropic region most of the issues of sustain abilities can be improved by mimicking the biological life. To approve the level of maintaining for long term use and reduce the energy supply, the artistic performance can use the unique local elements. With this limitation, it allow us to further improvise on the designer perspective in expressing ideas, and dancer interpreting their ideas and concept effectively.

In conclusion, artistic performance space is much more than just a theatre box which only concentrate on their aspect of lighting or auditorium, but as an iconic and landmark that built people together and improve the urban setting. However, due to the limited time and resources in this research, there still gaps in this research that can be further proposed as a new topic of seedy. Such as interaction of architecture spaces with human behaviour and exploration of building form towards human experience and tropical context.

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