Visit: Ping Shan Tin Shui Wai Leisure and Cultural Building
Materials and Textures

[Teacher notes]
Contents

Preamble

Teaching plan .................................................................................................................. i

Visit: Ping Shan Tin Shui Wai Leisure and Cultural Building — Materials and Textures

1.1 Planned itinerary for the visit .................................................................................. 01
1.2 Background Information ....................................................................................... 02
1.3 Features along the Route ....................................................................................... 04
1.4 Check points .......................................................................................................... 05
   1 North Elevation ..................................................................................................... 05
   2 West Elevation ..................................................................................................... 06
   3 Roof Terrace ........................................................................................................ 07
   4 2/F Terrace .......................................................................................................... 10
   5 G/F Lobby ............................................................................................................. 11
   6 Library .................................................................................................................. 12
   7 Ping Shan Heritage Trail ...................................................................................... 12
Exercise (group and individual): Materials, textures and spatial quality .................. 13

Summary, Key words and Further reading .................................................................. 15

Appendix: List of materials ......................................................................................... 17

Disclaimer

Create Hong Kong of the Government of the Hong Kong Special Administrative Region provides funding support to the project only, and does not otherwise take part in the project. Any opinions, findings, conclusions or recommendations expressed in these materials/events (or by members of the project team) do not reflect the views of the Government of the Hong Kong Special Administrative Region.

© 2012 Hong Kong Institute of Architects
Topic 08
Visit: Ping Shan Tin Shui Wai Leisure and Cultural Building — Materials and Textures

Major teaching areas

Visual Arts

Visual Art Appreciation and Criticism in Context

- Formal knowledge
- Types of image and image development strategies
- Modes of presentation
- Knowledge of history and ways of seeing
- Knowledge in context

Learning objectives

- To get first-hand experience of how material and texture express architectural design via on-site exercises
- To learn how to appreciate and criticize architectural space based on composition, material and texture
- To discover some of the popular material used in modern architecture
- To view in context and explore how material and texture can create dialogue between modern architecture and heritage context

Interdisciplinary teaching areas

Design and Applied Technology

- Strand 2 Technological Principles
- Strand 3 Value and Impact

Teaching plan

<table>
<thead>
<tr>
<th>Lesson</th>
<th>Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visit</td>
<td></td>
</tr>
<tr>
<td>Ping Shan Tin Shui Wai Leisure and Cultural Building</td>
<td>Planned itinerary of the field trip</td>
</tr>
<tr>
<td></td>
<td>1.1</td>
</tr>
<tr>
<td></td>
<td>1.2</td>
</tr>
<tr>
<td></td>
<td>1.3 &amp; 1.4</td>
</tr>
<tr>
<td></td>
<td>Exercise</td>
</tr>
<tr>
<td>Exercise</td>
<td></td>
</tr>
<tr>
<td>Exercise</td>
<td></td>
</tr>
</tbody>
</table>
1.1 Planned itinerary for the visit through Ping Shan Tin Shui Wai Leisure and Cultural Building

Pre-Trip Introduction (20 min)
- Background Information of the building
- Objectives and on-site exercise introduction
- Planned route
- Points to note (e.g. equipment needed, meeting point, etc)

Visit (1.5-2.5 hours)

Visit 1: North elevation of the building
- 10 min
Visit 2: West elevation of the Ping Shan Tin Shui Wai Leisure and Cultural Building
- 20 min
Visit 3: West Rail Transport Hub
- 20 min
Visit 4: 6/F Roof Terrace
- 20 min
Visit 5: 2/F Terrace
- 20 min
Visit 6: 4/F Lobby
- 20 min
Visit 7: 20 min
Visit 8: *Library
- 40 min

*Optional check points

External Reference
How to get there: Ping Shan Tin Shui Wai Leisure and Cultural Building:
1 Tsui Sing Road, Tin Shui Wai, Yuen Long
1.2 Background Information

Ping Shan Tin Shui Wai Leisure and Cultural Building

The Ping Shan Tin Shui Wai Leisure and Cultural Building, or Ping Shan Leisure and Cultural Building, is a multi-purpose leisure and cultural complex located between Ping Shan and Tin Shui Wai. It is the first Government building named a ‘leisure and cultural building’ in Hong Kong. The architectural form of the complex was inspired by the Chinese treasure cabinet and makes reference to the traditional architectural elements of the nearby Ping Shan heritage site. The complex consists of two blocks: an indoor recreation centre and a public library.

1. Indoor recreation centre
   - Sports hall and swimming pool
2. Public library
   - Second largest in Hong Kong
   - The only library with an outdoor reading area in Hong Kong
   - Atrium introduces natural lighting to multiple levels of the library

Architectural Merit

The Ping Shan Tin Shui Wai Leisure and Cultural Building won several architectural awards in recognition of its design and cultural merit. The jury for the 2011 Hong Kong Institute of Architects Medal of the Year commented:

1. a sense of harmony is delivered through the disposition of massing and the detailing of materials;
2. the materials employed various degrees of transparency and permeability in response to different functions and orientations; and
3. the inter-connected atrium and courtyards at various levels facilitate natural lighting at lower floors.

Key Facts

- **Name**: Ping Shan Tin Shui Wai Leisure and Cultural Building, or Tin Shui Wai Municipal Services Building
- **Location**: 1 Tsui Sing Road, Tin Shui Wai
- **Function**: Indoor Recreation Centre and Library
- **Type**: Mid-rise development
- **Number of floors**: 10 main levels, 1 basement
- **Gross Floor Area**: 17,011 m²
- **Site Area**: 5,474 m²
- **Design Date**: 2007
- **Construction Start**: 2009
- **Completion Date**: 2011

Architectural Awards

- Civil Engineering Papers of the Year Awards 2010
- Hong Kong Institute of Architects Medal of the Year 2011

Design Team

Architectural Services Department, HKSAR Government

1. Library facing west
2. Atrium in library
3. Entrance of the indoor recreation centre
4. Indoor swimming pool
West elevation of the Ping Shan Tin Shui Wai Leisure and Cultural Building

**Design Concepts**

**Key idea**

A municipal building with local identity:

1. As a place for gathering (sense of place — genius loci)
2. As a “THOROUGHFARE (通道)” to connect the West Rail transport hub to the Ping Shan heritage Trail
3. Bringing in elements from Chinese tradition and the nearby Ping Shan walled village
   - The overall form as a Chinese treasure cabinet (百寶格)
   - The entrance to the library as a semi-open space — a place for urban living
   - A vertical courtyard/light well inside the library
4. Echoing the context to emphasize the natural beauty of this traditional area
   - Chinese bricks
   - Timber screens
   - Fair-faced concrete
   - Glass
5. Local architectural elements
   - Local innovation — scissors staircases
   - Traditional Chinese architecture - elevated courtyard in the library fosters relationships between users
6. Forming a hub for human interaction
   Since both the sports activities and the library are inward looking/semi-private activities, several design moves help to link up the external spaces:
   - The external corridor along the arena
   - The glass path next to the swimming pool (on first level)
   - The outdoor reading space in the public library

**Sense of place — genius loci**

In ancient Roman religion, a genius loci was the protective spirit of a place. In contemporary usage, genius loci refers to a location’s distinctive atmosphere or sense of place.
### 1.3 Features along the Route

<table>
<thead>
<tr>
<th>Proposed Route</th>
<th>Visual Arts Points of interest</th>
</tr>
</thead>
</table>
| 1. North elevation of the building (from the Tin Shui Wai West Rail Exit C) | • Meeting point  
• Background of the Ping Shan Tin Shui Wai Leisure and Cultural Building  
• Relationship of architecture and the context |
| 2. West elevation of the building (facing Ping Ha Road) | • Group A on-site exercise area  
• Analysis of composition and façade design |
| 3. 6/F Roof terrace | • Group B on-site exercise  
• Connection between heritage and urban architecture through the use of materials and textures |
| 4. 2/F terrace | • Group C on-site exercise  
• Study of the use of materials and textures for semi-open leisure space |
| 4. G/F lobby | • Group D on-site exercise  
• Study of the use of materials and textures for indoor administration space |
| 5. *Library | • Natural lighting |
| 6. *Ping Shan Heritage Trail | • Understand the social and cultural context of Ping Shan  
• Traditional Chinese architecture  
More information can be found in Visual Arts Topic 2: ‘Chinese Calligraphy, Painting and Architecture’.

*Optional

The Ping Shan Tin Shui Wai Leisure and Cultural Building is located in a rich social and cultural context.
North Elevation

Relationship of Architecture and the Context

Design concepts
As a “THOROUGHFARE (通道)” to connect the West Rail transport hub to the Ping Shan heritage Trail

[Discussion]

1 Ping Shan is a very traditional area. What are the impacts of introducing a modern style of architecture here?
2 What are the social and cultural impacts of the newly designed municipal building on the existing surroundings?

Possible perspectives

1. Aesthetic Impacts
   • ‘Fitting in’ approach
   • ‘Contrasting the new with the old’
   • Harmony (in terms of form, scale, material, etc)

   The principle of building in context
   • Geography and history
   • Pattern of existing development and circulation routes through and around it
   • Important views from/to the building
   • Scale of neighbouring buildings
   • Selection of building materials
   • New views and juxtapositions adding to the variety and texture of the setting.

2. Social Impacts
   • Atmosphere/ urban image
   • Sense of community/social cohesion — safe, comfortable, accessible public space, green space attracting residents to an area and encouraging greater use, and hence achieving greater social cohesion

Cultural Impacts
   • Visionary building/ wow-factor/ civic pride — aesthetic appeal and a high quality of design providing inspiration and stimulation
   • Character/ identity — restoration of historic sites rejuvenating an area and giving it a unique sense of identity
   • Mixed-use/ diversity — varied environments offering a range of mixed uses and experiences. Mixed-use development helps regeneration by increasing an area’s vibrancy, attracting businesses and residents and creating jobs.

Diagram showing the building’s location between urban development and a heritage site
**Analysis of Composition and Façade Design**

**Design Concepts**

**Forming a hub for human relationships**

Since both the sports activities and the library are inward looking/semi-private activities, the design links up the spaces with external areas:
- The external corridor along the arena
- The glass road next to the swimming pool (on first level)
- The outdoor reading space in public library

**Composition**

**Indoor Recreation Centre (IRC) Block**
- A more solid and enclosed form to echo its nature and functions
- Mainly inward-looking

**Library Block**
- Expression of openness with south-facing façade to maximize open views and daylighting
- Mainly outwardly oriented

**Façade Design**
- The main façade design (west elevation) is inspired by the Chinese treasure cabinet
- Recesses and projections of building masses correspond to internal functions and incorporate terraces that connect the outdoor and indoor environments.
- Symbolizing and re-interpreting this traditional artefact in a contemporary way
- Different materials and textures on the masses representing the ‘treasure’ (the functions) kept inside the building

**Façade**

A facade or façade is generally the most important exterior side of a building, usually, but not always, the front. The word comes from the French language, literally meaning “frontage” or “face”. In architecture, the façade of a building is often the most important from a design standpoint, as it sets the tone for the rest of the building.
Connection between Heritage and Urban Architecture

Site map of the Ping Shan Tin Shui Wai Leisure and Cultural Building in relation to the Ping Shan heritage area. © Architectural Services Department

View from roof terrace: Ping Shan Heritage (left) and West Rail transport hub and New Town development (right) © Allen Mok
Application of Materials and Textures connecting the Old and the New

<table>
<thead>
<tr>
<th>Visions</th>
<th>Key Materials (see Appendix)</th>
<th>Look &amp; Feel</th>
<th>Architectural Language/Symbolic Meanings</th>
</tr>
</thead>
<tbody>
<tr>
<td>As a place of gathering for the community</td>
<td>Chinese brick</td>
<td>Sturdiness</td>
<td>Creating a modern fusion of East and West</td>
</tr>
<tr>
<td>Creating a leisurely and relaxed feeling</td>
<td></td>
<td>Stability</td>
<td>Complements the spirit of cultural heritage in Ping Shan</td>
</tr>
<tr>
<td>Bringing in elements from Chinese tradition and the nearby Ping Shan walled village</td>
<td>Timber</td>
<td>Traditional Chinese building materials</td>
<td>Emphasis on the natural beauty of this traditional area</td>
</tr>
<tr>
<td>Echoing its context</td>
<td></td>
<td>Degrees of transparency and permeability</td>
<td></td>
</tr>
<tr>
<td>Forming a hub for human relationships</td>
<td></td>
<td>Sense of nature and warmth</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Metal frame</td>
<td>Native</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Steel lattices</td>
<td>Traditional Chinese building materials</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Degrees of transparency and permeability</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Modern</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fair-faced concrete</td>
<td>Minimal and original</td>
<td>Creating balance between modern and suburban texture</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Simple and clean</td>
<td>Matching the urban touch of Tin Shui Wai</td>
</tr>
<tr>
<td></td>
<td>COR-TEN steel</td>
<td>Honest and raw</td>
<td>Downplay the harsh precision of modern materials</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Modern</td>
<td>Emphasis on the natural beauty of this traditional area</td>
</tr>
<tr>
<td></td>
<td>Glass</td>
<td>Degrees of transparency and permeability</td>
<td>Creating a sense of well-being and an inviting atmosphere</td>
</tr>
</tbody>
</table>

Appendix
Lists of materials can be found in the Appendix.
How do you see materials and textures being used differently in this building, compared to other works of contemporary architecture?

Possible perspectives

- More contrast and combination of different textures
- Different textures of the same materials create harmony and variety (e.g. the different surface textures of fair-faced concrete in this building)
- Material is left exposed and raw, without artificial decoration
- Pattern, rhythm and permeability are used as textural elements
- Texture creates pattern and rhythm
- Natural sunlight and shadow as intangible texture
- Soft landscape such as trees and flower beds
- New views and juxtapositions adding to the variety and texture of the setting

Teaching Tips

More information about environmental concerns in architecture can be found under Design and Applied Technology Topic 5: ‘Sustainable Architecture’.
Study of the Use of Materials and Textures for Semi-Open Space

Functions of the space
- Leisure and resting
- A space connecting the indoors and the outdoors

Atmosphere of the space
- Open and close to nature
- Comfortable and welcoming
- Informal and tranquil
- Modern form of Chinese courtyard

Materials used
- White plaster wall
- Fair-faced concrete
- Timber screen
- Natural sunlight
- Plants

Application of Materials and Textures
- White plaster wall
- Fair-faced concrete to represent the integrity of traditional Chinese architecture
- Timber screen giving warmth and permeability to the view outside
- Natural sunlight to give a sense of welcoming
- Plants to enhance the tranquillity of the space
- Simple overall colours but rich in textures
- Mixture of materials to provide harmony and fullness of the space
Study of the Use of Materials and Textures for Indoor Space

Functions of the space
- Administration
- Welcome the visitors
- Entrance to other spaces

Atmosphere of the space
- Bright and clear
- Formal
- Relatively enclosed

Materials used
- White ceiling
- Floor tiles
- Glass

Application of Materials and Textures
- Artificial materials for more formal spaces
- Glasses of different transparencies for privacy
- Artificial light over natural light for a place of information
- Simple and modern finishes as a contrast to the nearby heritage site
- Landscape to soften the formality of the space
**Library**

South elevation of the library block

**Library Block**
- Expression of openness with south-facing façade to maximize open view and day lighting
- Mainly outwardly oriented
- A vertical courtyard/light well at the library as an element brought in from traditional Chinese architecture
- Introducing natural sunlight to the reading areas

**Ping Shan Heritage Trail**

The Ping Shan Heritage Trail was opened to the public in 1993 as the first heritage trail featuring historical architecture. With a length of approximately 1 km, the trail runs across the Ping Shan Heung starting at the Hung Shing Temple and passing several traditional Chinese buildings such as Ching Shu Hin, Kun Ting Study Hall, Yu Kiu Ancestral Hall, Tang Ancestral Hall, Yeung Hau Temple, Sheung Cheung Wai and Tsui Shing Lau. (Source: Education and Manpower Bureau)

**External Reference**
Features and information on the Ping Shan Heritage Trail can be found at:

Ping Shan Heritage Trail

**Teaching Tips**
More information on appreciation of Chinese architecture can be found in Visual Arts Topic 1 ‘Chinese Calligraphy, Painting and Architecture’.
[Exercise]
Materials, textures and spatial quality

Divide students into four groups. Each group will be assigned to one of the four checkpoints below:
A. West elevation
B. Roof terrace
C. 2/F terrace
D. G/F lobby

Fill in the corresponding worksheet. Each checkpoint has its own points of interest.

Capture the spatial quality of the assigned area through photography and sketching. Emphasis could be on:
- Massing and volume of space
- Pattern/rhythm/grids/modularity
- Layering
- Materials and textures

Equipment needed: camera, sketch book, drawing tools...

### Group A

**Check point** | West elevation of the building  
---|---
**Focus** | Analysis of Spatial Composition and Façade Design  
1. What materials, textures and colours can you find on the façade design?  
2. How does the façade design convey the design concepts of the building?  
3. How does the form relate to the functions?  
4. What do the different textures on the concrete and other materials used suggest?

### Group B

**Check point** | Roof terrace  
---|---
**Focus** | Connection between Heritage and Urban Architecture  
1. Can you categorize which materials represent the old and which represent the new?  
2. Can you describe the look and feel of these materials?  
3. What are the architectural purposes of applying these materials in the building?  
4. How can the choice of materials and textures convey the design concepts of the building?

### Group C

**Check point** | 2/F terrace  
---|---
**Focus** | Study of the Use of Materials and Textures for Semi-Open Space  
1. What materials can you find in the space?  
2. What are the functions of the space?  
3. What atmosphere is created through the chosen materials and textures?

### Group D

**Check point** | G/F lobby  
---|---
**Focus** | Study of the Use of Materials and Textures for Indoor Space  
1. What materials can you find in the space?  
2. What are the functions of the space?  
3. What atmosphere is created through the chosen materials and textures?
[Exercise]
Materials, textures and design concepts

Pick a key space in the Ping Shan Tin Shui Wai Leisure and Cultural Building you find the most interesting. Explain your choice and how materials and textures help express its design concepts.

Equipment needed: camera, sketch book, drawing tools...

### Highlighted Space

<table>
<thead>
<tr>
<th>Design concepts</th>
<th>As a place for gathering</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Explanation</strong></td>
<td></td>
</tr>
<tr>
<td>What key material and textures are used?</td>
<td>Frosted glass on the upper half and clear glass on the lower half</td>
</tr>
<tr>
<td>Where is the space?</td>
<td>G/F lobby area</td>
</tr>
<tr>
<td>How can it help expressing the design concept?</td>
<td>The different levels of transparency frame people’s circulation and turn it into a visual interest. The use of glasses creates interesting connection between ‘in and out’ and attracts people to come in.</td>
</tr>
</tbody>
</table>
Summary
The Ping Shan Tin Shui Wai Leisure and Cultural Building is an award-winning project showcasing how a community building can connect to the context and express a sense of spatial aesthetics through the richness of materials and texture.

Key words
Façade
Elevation
Form
Functions
Composition
Material
Texture

Further reading
1. Ping Shan Heritage Trail
2. Ping Shan Heritage Teaching Toolkits, Architectural Services Department
Appendix: List of materials

**Fair-faced Concrete**
Fair-faced concrete is cast on site with film face plywood. Different textures and patterns can be cast with corresponding moulding plates.

- Mixed with dark pigment
- Striped
- Wood-surfaced
- Smooth-surfaced

**Chinese Green Brick and Tiles**

**Timber**
Timber is used for screens, wall finishes, ceilings and floors.

**COR-TEN steel**
COR-TEN steel is a weathering steel. It is exposed to the weather for several years to form a stable rust-like surface. It is resistant to erosion and strong under tension.
Steel Lattices, Metal Frame and Mesh

Glass
Channel glass  Clear glass  Glass brick  Frosted glass

Acoustic Materials
Acoustic materials are used around the sports areas.

Softscape
Plants are introduced into the interior to create a relaxed and natural atmosphere.