

2013 地下空间与现代城市中心国际论坛

2013 International Forum on Underground Space and Modern Urban Center

中國上海2013年7月18日 <http://ifuschina.com/index.asp> 18, 19 July 2013, Shanghai, China

加强地下空间与地上自然景物和人造美景 的相互和谐连接方案的讨论

***** (上海珍珠黄金梦 - 见第三部分) *****

<http://icee.hku.hk/activities/HKU100exhibition/doc/20110316g-GR02/KPC.pdf>

A discussion on the synergistic and harmonious integration of underground space with prime and sustainable features aboveground

***** (The Pearl-Gold Dream of Shanghai – See Part 3) *****

<http://icee.hku.hk/activities/HKU100exhibition/doc/20110316g-GR02/KPC.pdf>

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鳴謝



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Acknowledgment: Support of University Development Fund, HKU; & Initiative on Clean Energy & Environment

<http://icee.hku.hk/index/index.html> ; <http://icee.hku.hk/activities/HKU100exhibition/doc/20110316g-1/KPC.pdf>

又背景地圖和照片取材自谷歌、天地圖、和維基百科和其他来源。

Background images: courtesy of Google.com, Wikipedia, Wikimedia, <http://www.tianditu.cn>, other sources;

VIDEOS <http://www.youtube.com/channel/UCBeEJ2vJ2KTfPEUoIoL-IWg>

<https://plus.google.com/photos/111208623575822383534/albums?banner=pwa> ; <https://plus.google.com/106385508503573893596/posts>

加强地下空间与地上自然景物和人造美景 的相互和谐连接方案的讨论

A discussion on the synergistic and harmonious integration of **underground space** with prime and sustainable features aboveground

大多数人以为地下空间是从自然界中分离的。其实地上一定程度的自然光，阳光，天空的感觉，自然风，雨，绿化，是可以适当地引入地下空间的，把地下空间的质量大大地提高。本文讨论一些把地下空间与地上自然景物和人造美景的相互和谐连接方案，其中包括把「**黄金比例**」(Golden ratio) 应用在城市布局，和小区的地上与地下空间的相互和谐连接设计。

Underground space is conceived by most people as separated from nature. Bringing the good virtues of nature, predominantly natural light, sunshine, sky vision, wind, rain, greenery, suitably in certain way and proportion into underground space in a sustainable way would greatly enhance the quality of underground space. This paper discusses some proposals on the synergistic and harmonious integration of underground space with prime and sustainable features aboveground, including using **Golden Ratio** in urban design and city planning.

加强地下空间与地上自然景物和人造美景 的相互和谐连接方案的讨论

A discussion on the synergistic and harmonious integration of underground space with
prime and sustainable features aboveground

1

香港发现「世界-地理-几何-黄金比例」奇观与
在澳门、珠海、深圳、广州的相关奇观发现
黄金比例...及..地理-几何...奇观, 日晷...
城市布局的再思

2013 Geo-Geometric Golden-ration discoveries in
HKSAR , Macau SAR, Pearl River Delta, Guangzhou –
Proposed underground development concepts in
HKSAR and Macau SAR
Geo-geometric wonders...,. Golden Ratio ...
City-scale Sundials
Rethinking of city Layout principles

2

从勒·柯布西耶学习怎么样去加
强地下空间与地上自然景物和
人造美景的相互和谐连接

To learn from Le Corbusier on
integration golden ratio, and
nature into spaces above
ground and below ground

3

上海世博会地区的特色区
佈局的再思

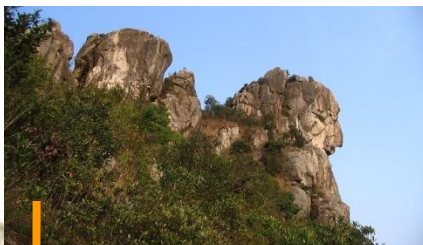
The Characteristics of the
World Expo Site, Shanghai
Rethinking of District Layout
principles

珍珠黃金夢嶺南

一·珍珠生「萬」「華」奇景

(張國斌 | 紫荊論壇 2013年7月)

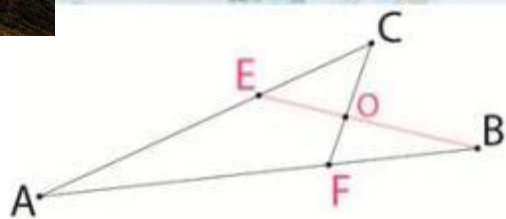
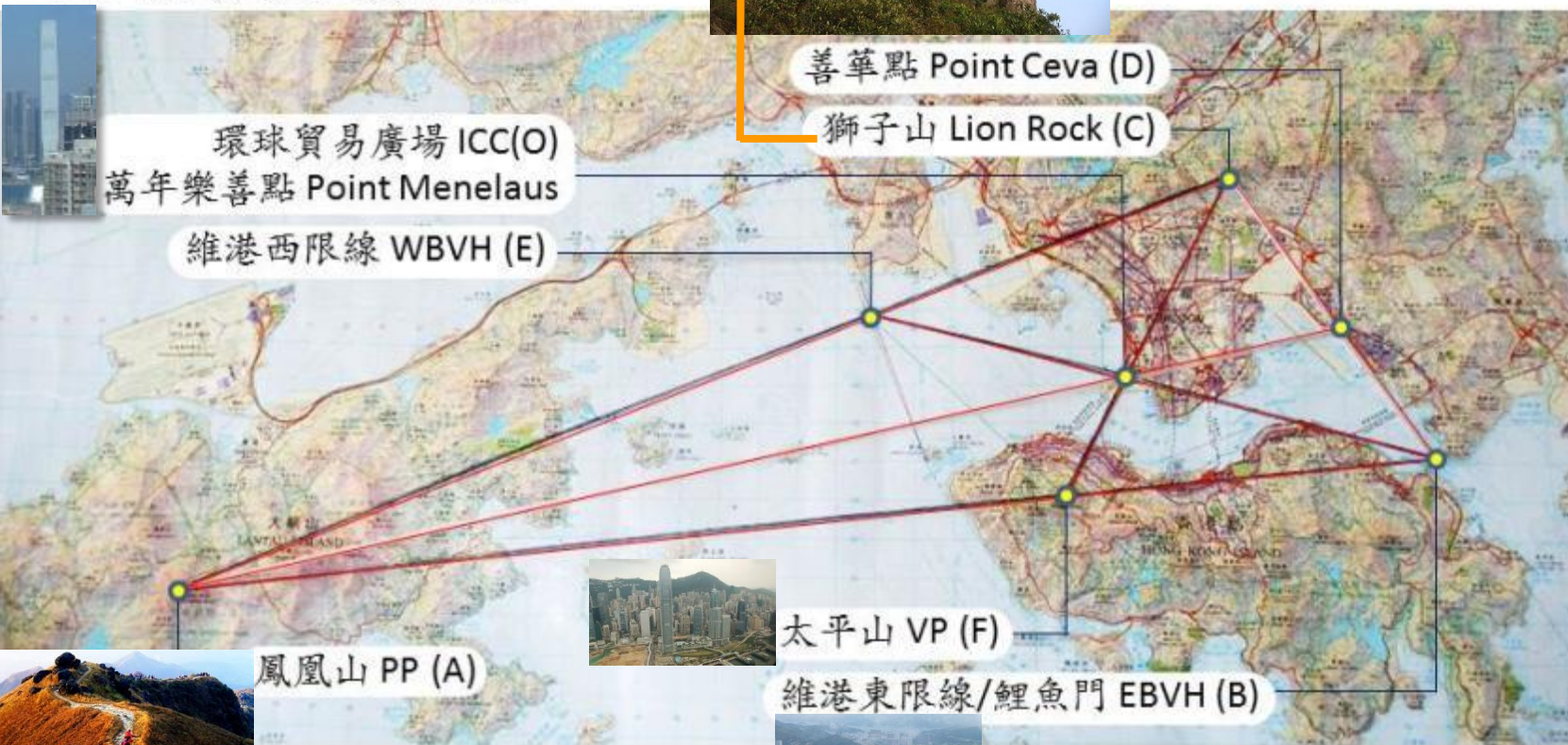
獅子山, 495米高
Lion Rock, 495 m high



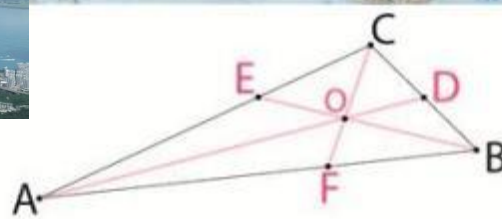
The Pearl-Gold Dream of South China

Fig. 1 The Geo-Geometric Wonder of HKSAR

圖1. 香港發現地理幾何奇觀



萬年樂善氏定理 Menelaus Theorem (~AD 100)
 $(AB/BF) \times (FO/OC) \times (CE/EA) = 1$
 或 $AB \times FO \times CE = BF \times OC \times EA$



善華氏定理 Ceva Theorem (AD 1687)
 $(AF/FB) \times (BD/DC) \times (CE/EA) = 1$
 或 $AF \times BD \times CE = FB \times DC \times EA$

The Pearl-Gold Dream of South China

Fig. 2 The Right-Angled Golden Ratio Spiral of The Geo-Geometric Wonder of HKSAR

近年达文西密码的热议，带动了普世对黄金比例 (符号用希腊字母Φ代表)的讨论。Φ =Golden ratio

圖2. 香港的發展歷程切合「黄金比例直角螺旋」

$$\Phi = \frac{1 + \sqrt{5}}{2} = 1.6180339887498948.....$$

Φ = Golden ratio
= 黄金比例

Φ 的平方是= Φ x Φ = 2.618

Φ 的倒數是= 1/Φ = 0.618

Φ 的平方根是= √Φ = 1.272

<http://www.contracosta.edu/legacycontent/math/pentagrm.htm>



Golden ratio analysis
黄金比例分析

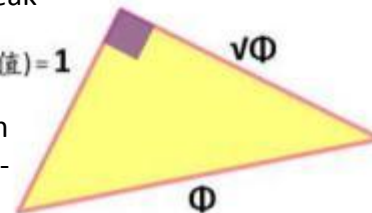


Mona Lisa by Da Vinci
蒙羅麗莎像, 达文西 (1452-1519)
www.goldenmeanalipers.com

金色三角形是起步的「黄金比例直角三角形」，箭咀向外螺旋與香港發展切合。

起步距離(暫給予數值)=1

The golden Ratio right-angled triangle



<http://gondolaproject.com/2012/03/>

珍珠黃金夢嶺南

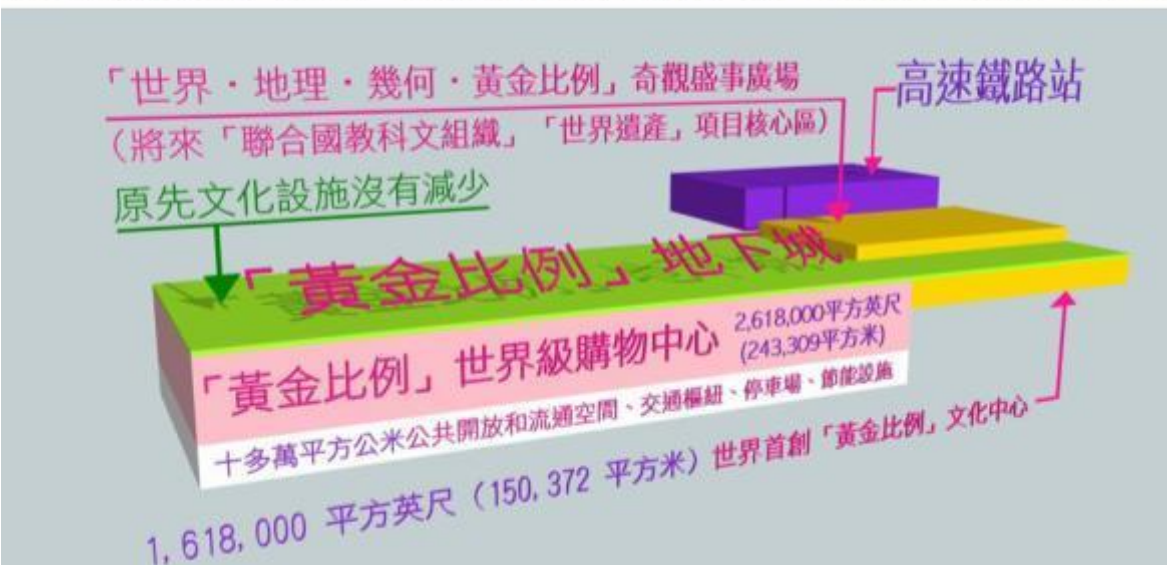
二 · 「黄金無限數」香江

(張國斌 | 紫荆論壇 2013年7月)

三·地勢坤和上下寶

2.618百萬呎「黃金比例雙乘數」地下優質商場時值不少於800億港圓，年租估值約80億港圓，連同1.618百萬呎「黃金比例」地下文化中心和百多萬呎地下交通設施及「金金APM綫」，總建造費用少於400億港圓。投資數年回本，確是黃金事業。

圖3. 香港西九文化區宜增建「黃金比例雙乘數」地下商場和「黃金比例」文化中心和廣場

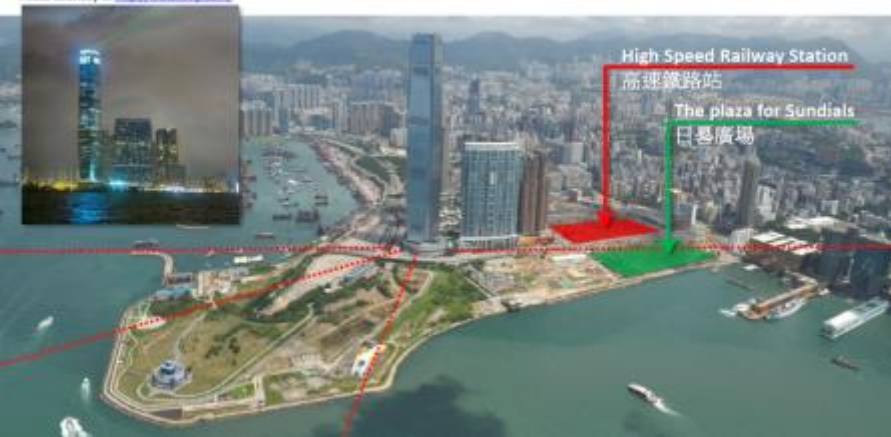


「GOLD鐵」站旁的「黃金比例雙乘數」2.618萬呎地下商場，位於海港城和「GOLD鐵」站之間，滿足每天十萬「GOLD鐵」客和其他遊客所需；其旁其上皆是多元化「黃金比例」文化設施，優美公園和原有的大量西九文化設施，又融入「黃金比例數」事物之中，實為美輪美奐之最，必成為香港本地及國際旅遊業的「黃金引擎」。

For details of Underground development proposals for West Kowloon and KaiTak in HK 西九龍文娛藝術區(地下城部分);東九龍啟德區(地下城部分) 更多細節:

<http://icee.hku.hk/activities/HKU100exhibition/doc/20110316f-1/KPC.pdf>

ICC at night
Photo Courtesy of <http://www.hku.com/>



The Pearl-Gold Dream of South China

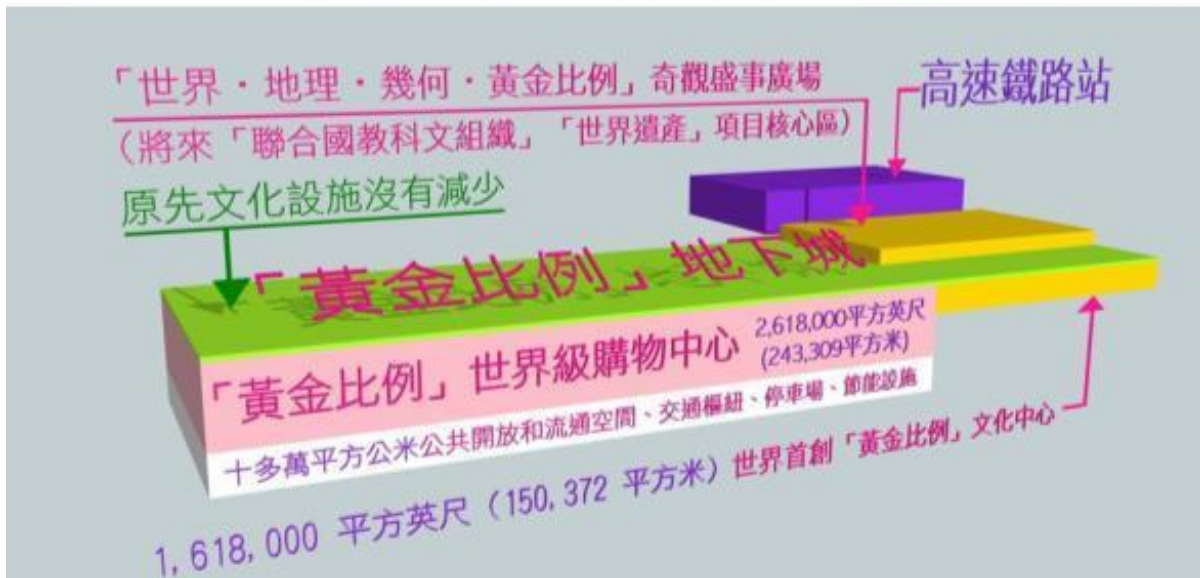
Fig. 3 The Harmonic Synergy of Underground and Aboveground development

珍珠黃金夢嶺南

三·地勢坤和上下寶

(張國斌 | 紫荊論壇 2013年7月)

圖3. 香港西九文化區宜增建「黃金比例雙乘數」地下商場和「黃金比例」文化中心和廣場

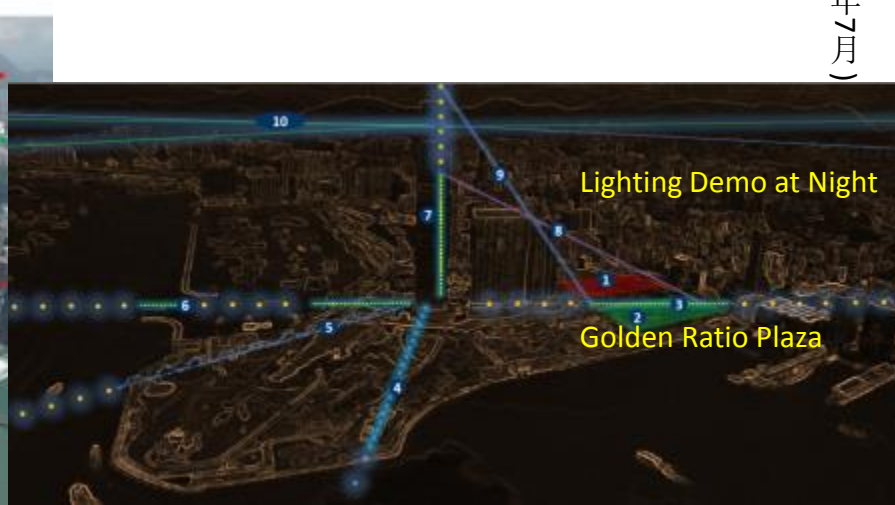
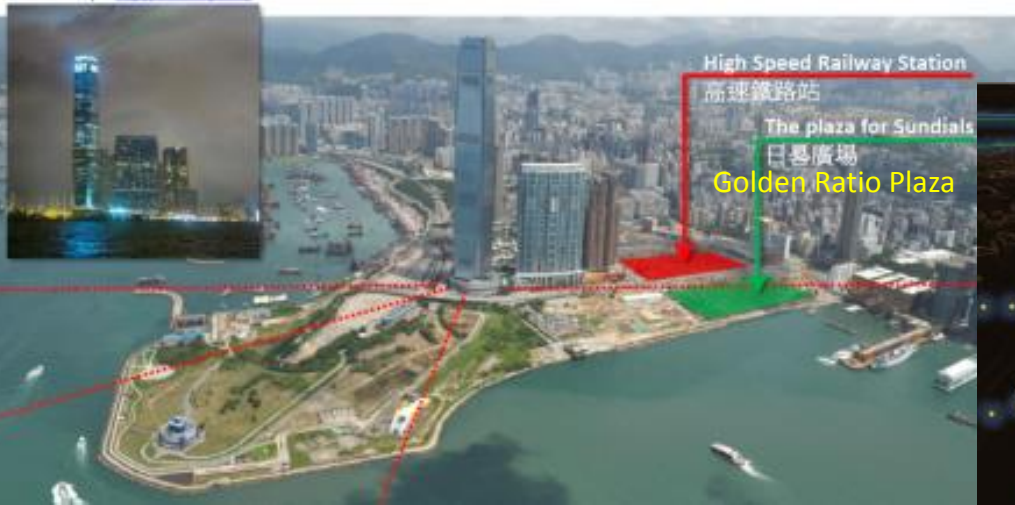


* 2.618 (Φ x Φ) Million Square Foot
Underground Shopping Mall → Current asset of HK\$ 80 Billion
* 1.618 (Φ) Million Square Foot
Underground Cultural Centre, Traffic Hub, & under-harbour "APM" Shuttle to Queensway Super Traffic Hub

For details of Underground development proposals for West Kowloon and KaiTak in HK →

<http://icee.hku.hk/activities/HKU100exhibition/doc/20110316f-1/KPC.pdf>

ICC at night
Photo Courtesy of <http://www.ihk.com/>



The Pearl-Gold Dream of South China Fig. 4 The Harmonic Synergy of Underground & Aboveground development

珍珠黃金夢嶺南

四 · 天行健應日月星

(張國斌 | 紫荊論壇 2013年7月)

圖4: 地勢均和上下寶的原理在西九文化區的實踐

仿龍天際高廈ICC



In winter afternoon, sunlight reflection from ICC will shine on the 6th line of Geo-Geometric Wonder of HJKSAR (Fig. 1)

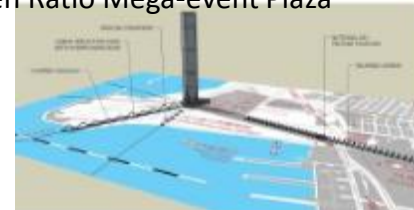


「仿龍天際高廈ICC」把冬天下午的陽光，向著太平山方向反射在這條「幾何奇觀」線條上。(見圖1)

萬年樂善銀龍海陸日晷 (ICC), 於2012年6月28日的投影紀錄 [拍攝於 [Sky 100](#)] The Silver Dragon Sundial at 28 Jun, 2012



Casting solar shadow of ICC onto The Golden Ratio Mega-event Plaza



三月廿一日的電腦模擬日影 Silver Dragon Sundial Simulation for 21 Mar <http://www.youtube.com/watch?v=OVr-VKoRIOE&list=UUBeEJ2vJ2KTfPEUoIoL-IWg>

The Pearl-Gold Dream of South China : The Harmonic integration with the sun, the moon, and the stars



在西九龍文娛藝術區之內：三合一晷系統的概念設計圖：萬年樂善 - 銀龍海陸日晷
 Proposed design of The Trio-Sundial System in West Kowloon Cultural District
<http://www.youtube.com/watch?v=sHdhwmT4Cc&list=TLb-wVuYe5msk> ;
<https://plus.google.com/111208623575822383534/posts>

電腦模擬日影片段 ▶

<http://youtu.be/DiZeU3-ZiRo>



金鳳來儀 The Golden Solar shadow of Lantau Peak in Spring Festival

<http://youtu.be/BRYwmYakAB>



七月一日銀龍賀回歸 Celebration at 1 July by ICC Sundial

<http://youtu.be/jP1oVDvGNvI>



七月一日上下午銀龍投影於「幾何奇觀」軸線 The video of ICC Sundial, 1 July

<http://youtu.be/iFoovWH-s9E>



春秋分公平正義影子線 The ICC sundial video at Equinox days of 21 Mar, 23 Sept

Schematic Diagram of Trio-Sundial System in West Kowloon Cultural District, HKSAR

西九文化區三合一晷系統示意圖

for details and Chinese description, see
<http://icee.hku.hk/activities/HKU100exhibition/doc/20110316d-3/KPC.pdf> and
<http://icee.hku.hk/activities/HKU100exhibition/doc/20110316g-1/KPC.pdf>

Solar shadow path of south-west corner of ICC casting onto WKCD on 23 June Summer Solstice 夏至
 (lines developed from actual site photos)

Solar shadow path of south-east corner of ICC casting onto Mega-event Plaza on 21 June Summer Solstice 夏至
 (lines developed from actual site photos)

Golden Phoenix Sundial: Phoenix Mountain 鳳凰山 (or Lantau Peak, 934m tall) on Lantau Island, 26km to West Kowloon Cultural District, casting "Golden Phoenix" shadow onto Mega-event Plaza on Chinese Spring Festival 春節, before moon rise

Proposed 8-hectare Mega-event Plaza within West Kowloon Cultural District

Solar shadow path of Kowloon Bauhinia casting onto Mega-event Plaza on 21 March/ 23 September Spring/ Autumn Equinox Day 春/秋分

Lai-Chack Sundial 114.91m [377ft.] tall *377 is the 15th number in Fibonacci sequence

0m

1500m

四 · 天行健應日月星
 珍珠黃金夢嶺南

(張國斌 - 2013年7月)

The Pearl-Gold Dream of South China : Fig. 5 Multiple Golden Ratio Geometries in HK, Macau, Zhuhai

圖5. 港珠澳現多胞胎「黃金比例」地理幾何奇觀

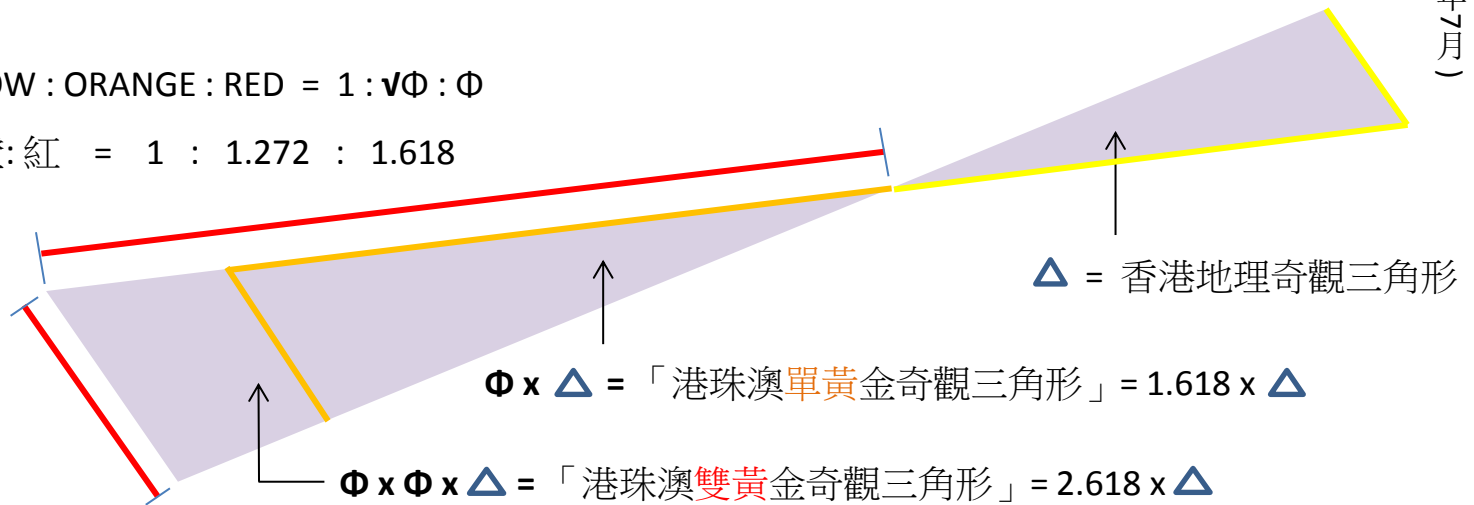


五·黃金數連港珠澳
珍珠黃金夢嶺南

(張國斌 - 2013年7月)

LENGTH SCALE YELLOW : ORANGE : RED = 1 : $\sqrt{\Phi}$: Φ

長度比例 黃:橙:紅 = 1 : 1.272 : 1.618



The Pearl-Gold Dream of South China : Fig. 6 The Golden Ratio Geo-geometric wonder of Macau

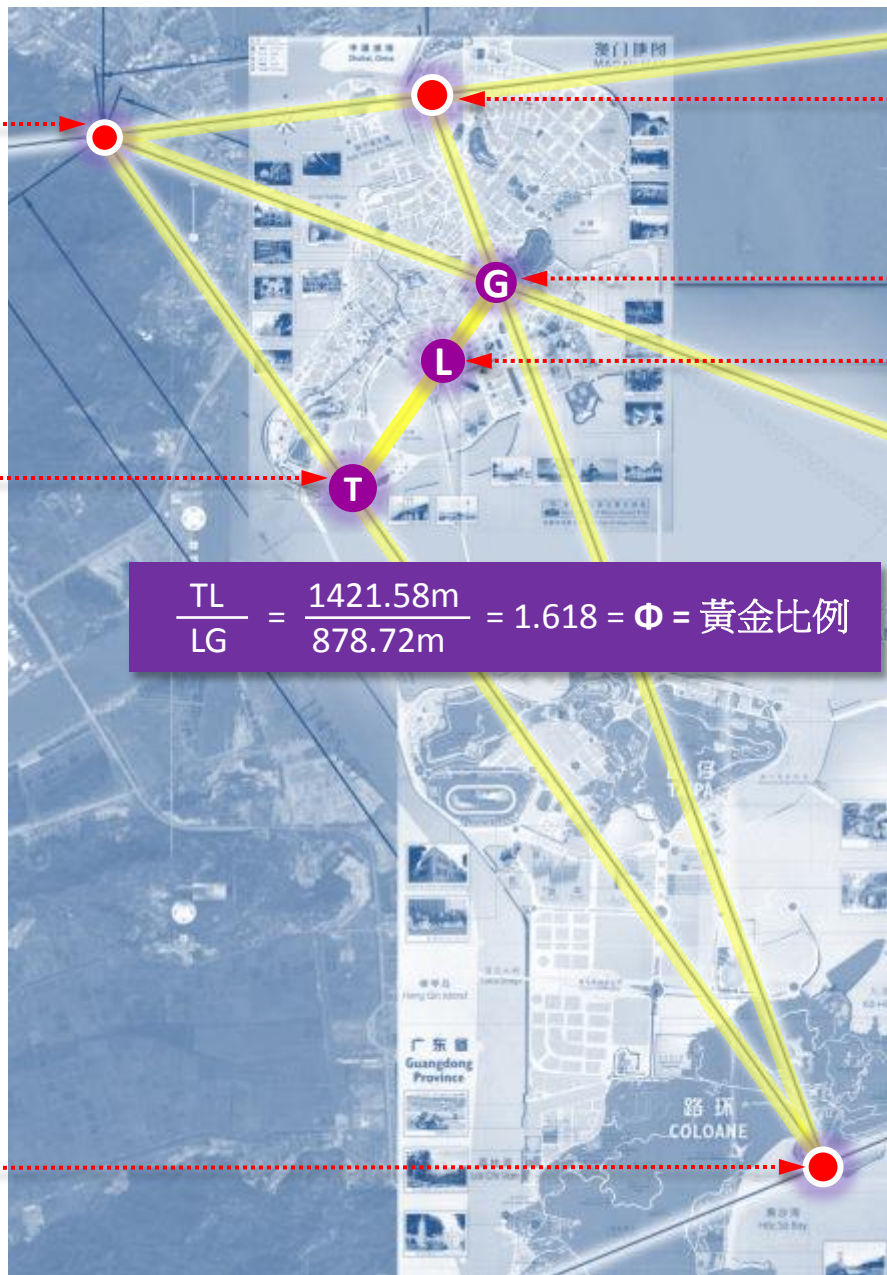
圖6. 澳門「黃金比例」地理幾何「千禧燈塔水陸日晷」盛蓮公園奇觀

珠海竹仙洞高球場
Zhuhai Master Golf
Zhuxiandong Club



澳門旅遊塔
Macau Tower (T)

路環寶鼎渡假村
Westin Resort



澳門蓮花廣場
Lotus Plaza

東望洋燈塔



Guia Light House & Fort (G)

葡京酒店

Hotel Lisboa (L)



五·黃金數連港珠澳
珍珠黃金夢嶺南

「黃金比例矩形螺旋」
Golden Rectangle Spiral



(張國斌 - 2013年7月)

珍珠黃金夢嶺南

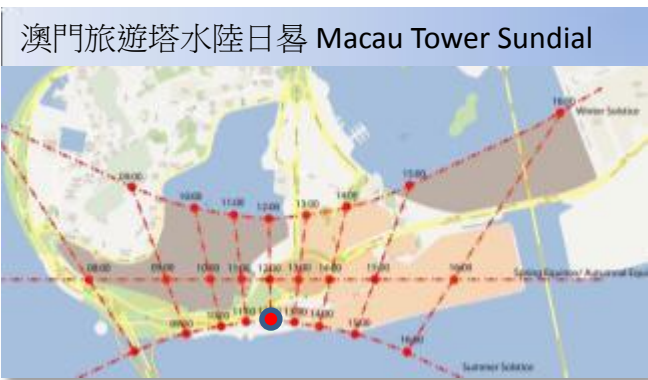
五·黃金數連港珠澳

(張國斌 - 2013年7月)



「黃金比例·水陸日晷·盛蓮水陸公園」，在互聯網上供全球欣賞，更使公園遊人賓客樂而忘返，年年再次來旅遊。

在公園之地下空間可發展「黃金比例地下城」，包括大型交通樞紐、公路網、停車場、車站、地鐵站；又建面積1.618百萬平方英尺的「黃金比例(即 $\Phi=1.618$)地下商場」，與及地下和地上結合的「世界黃金比例」文化中心(World Golden Ratio Cultural Centre)。



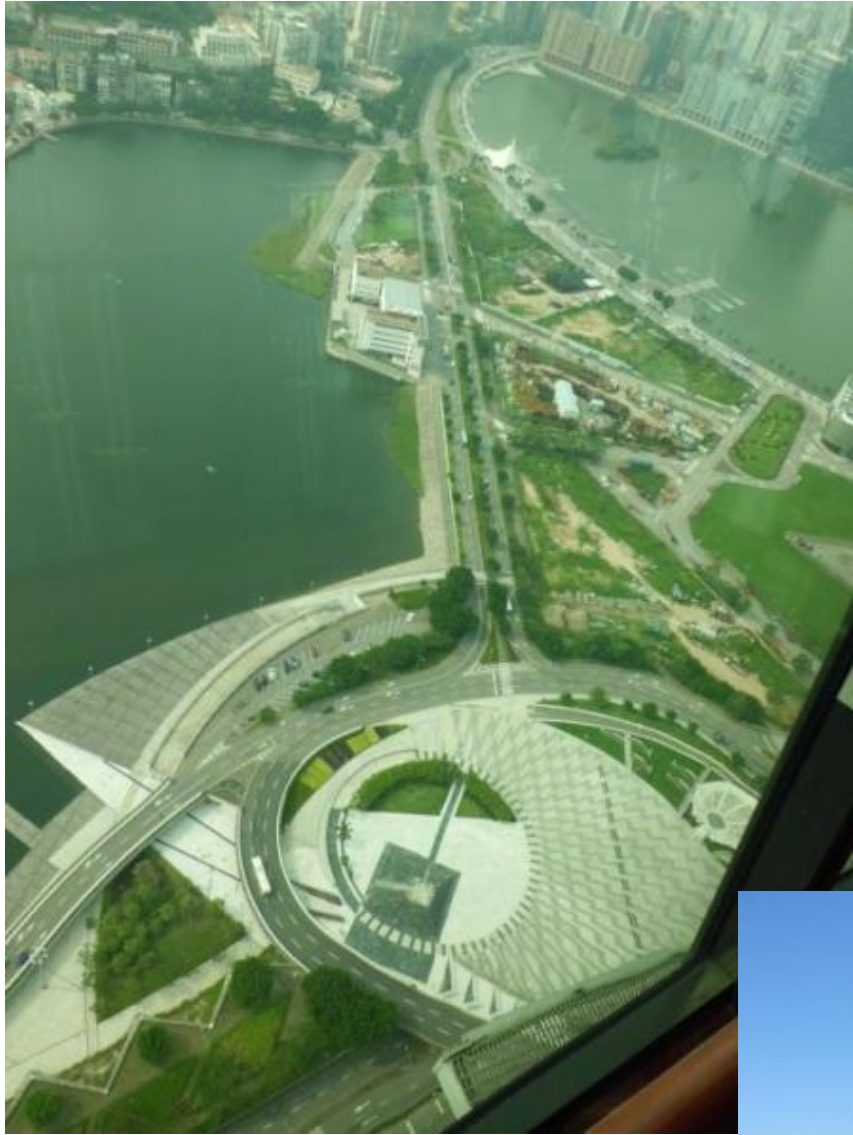
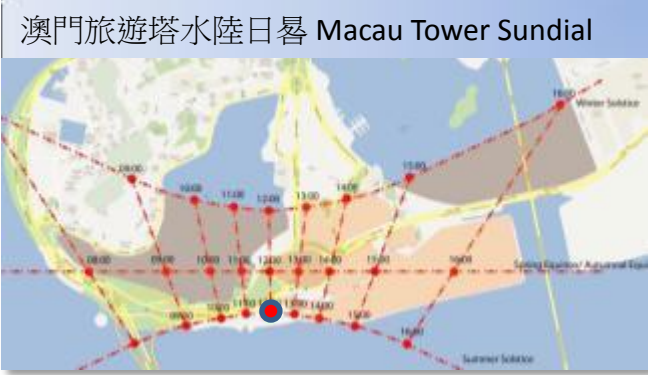
10月1日国庆节澳門旅遊塔水陸日晷(Macau Tower Sundial) 電腦模擬影像短片

<http://www.youtube.com/watch?v=oSeFdY7HdQQ> ; <https://plus.google.com/111208623575822383534/posts>

The Pearl-Gold Dream of South China : The Golden Ratio Geo-geometric wonder of Macau

The “Golden-Ratio Lake-land Tower Sundial” : a Great work of culture, for tourism attraction world wide.

Underground Golden Ratio 1.618 Million square foot shopping mall, and cultural centre, & traffic hub, near the tower region : a cultural and economic booster.



五·黃金數連港珠澳
珍珠黃金夢嶺南

(張國斌 - 2013年7月)

10月1日国庆日澳門旅遊塔水陸日晷(電腦模擬影像短片 Macau Tower Sundial videos at 1 Oct , National Day

<http://www.youtube.com/watch?v=oSeFdY7HdQQ> ; <https://plus.google.com/111208623575822383534/posts>

Macau Tower 澳門旅遊塔

珍珠黃金夢嶺南

六·三角黃金匯珠江

(張國斌 | 紫荊論壇 2013年7月)

圖7. 「黃金比例」泛珠江

Golden Ratio Triangles and Spirals

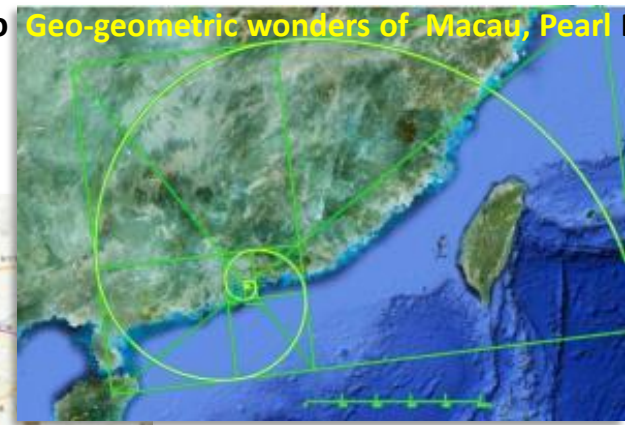
黃金比例的三角形和螺旋

藍色虛線行在水路的中間

Dotted blue line runs at the middle of the waterway

三角形的中綫恰好把珠江水道均分成東西兩半

The pink middle line of the triangle divides the water area into 2 equal parts



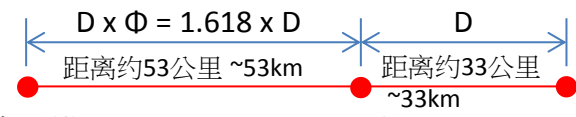
「黃金比例」矩形順時針螺旋
Golden Rectangle Clockwise Spiral



順時針螺旋，中心區是深圳西邊的前海區
Centre of Spiral is Qianhai, Shenzhen West



逆時針螺旋，中心區是珠江口的湛澳擔杆島自然保護區
Centre of Spiral is Zuhai Qi'ao Dangan Island Nature Reserve



珠海澳門橫琴
Zhuhai, Macau, Huangqin

鳳凰山(大嶼山)
Phoenix Peak (Lantau Peak)

獅子山(香港, 九龍)
Lion Rock (Hong Kong & Kowloon)



圖8. 五羊城雙塔賀國慶：「廣州雙子塔日晷」賀國慶

十月一日國慶日，廣州東塔、西塔投放在公園的日影
 Solar shadow of East Tower, West Tower, Guangzhou, casting onto the Park
 On 1 October, National Day of China：東塔 East Tower - 上午 11:00 to 11:35
 西塔 West Tower - 下午 12:35 to 13:35

七·五羊雙塔賀國慶
 珍珠黃金夢嶺南

（張國斌 | 紫荊論壇 2013年7月）

廣州西塔 440米高
 Guangzhou West Tower, 440 m tall



廣州東塔 530 米高
 Guangzhou East Tower, 530 m tall



2048年世界「五福奥运会」：2048 “Pentapolis” Olympics in HK-Macau-Zhuhai-Shenzhen-Guangzhou 港、澳、深圳、珠海四特区和广州市(五羊城) 合办2048 「五福奥运会」

从香港发现的「地理几何文化奇观」，赋与「黄金比例无限数」的应用，加上港、澳、广州多个各具特色的日晷，映照海陆之特色，真叫我们体会『天行健，地势坤』的古贤易经真理。

位于「香港地理几何奇观」主线上，又和应香港湾仔金紫荆布局的西九文化区旁的丽泽中学，以易经『丽泽兑，君子以朋友讲习』命名；其校徽更有「黄金比例五角黄金星」，与国旗的五星相似。再回想在「辛亥革命」前一年1910年10月1日下午三时，广九铁路九龙段通车。昔日铁路总站，今日留作纪念的原来总站钟楼，离创校于1929年的丽泽中学的「黄金比例」的「黄金比例五角黄金星」，好像香港已早在1910年10月1日，和1929年10月1日，预祝国庆。

兼且，其实丽泽中学步行距离百年铁路总站钟楼约880米，却与GOLD铁(即高铁)总站和站前的『西九「黄金比例」文化盛事大广场只有200米的距离；而ICC「银龙日晷」的七月一日下午庆回归的日印欢印于盛事大广场之上，并向着丽泽「黄金比例星」方向前进(即「香港地理几何奇观」主线方向)，欢庆回归纪念。

顺着以上一切举世无双、天造地设的优美布局，高铁总站前西九文化区最宜建设一个「黄金比例」贺国庆、庆回归盛事广场，广场又可与地下空间合成「黄金比例」地上地下连合的文化中心；地下并建设「黄金比例商场」和「金金APM电动车线」连接到金钟超级交通枢纽，一举多得；更把原先西九文化设计布局，摆放在一个世界顶级的「黄金比例」文化绿化盛事多元化的环境里，并能把太平山、狮子山、凤凰山、维多利亚港、古铁路总站、百年钟楼等地理、文化等拥有「传世之宝」价值的景物适切理顺，展示全球，申请列榜于联合国文教组织作香港「传世之宝」。(或译「世界遗产」榜UNESCO World Heritage Inscription.) (图3, 4)

GOLD铁(高铁)站前的西九文化区「黄金比例」盛事广场是整个布局的建筑核心,并可成为2048年世界「五福奥运会」的盛事开幕礼和闭幕礼的主场地，由港、澳、深圳、珠海四特区和广州市(五羊城)，四个特别行政区域和一个城市合办2048奥运会，以「五福临门」主题设计吉祥物,庆祝2047年香港回归五十年，预祝澳门2049回归五十年，更与全球万族分享中华文化复兴，携手共创盛世禧年！



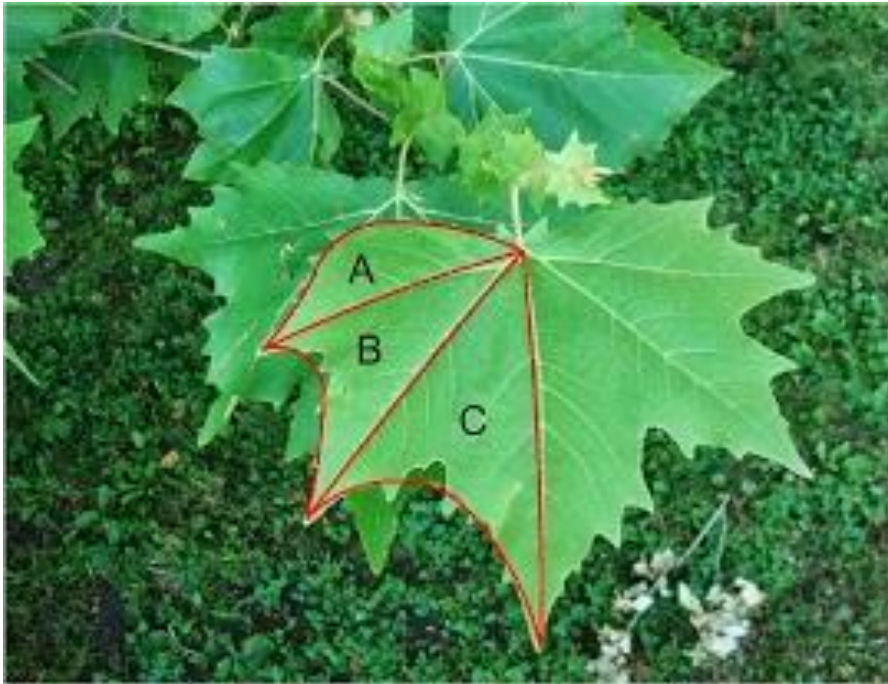
加强地下空间与地上自然景物和人造美景 的相互和谐连接方案的讨论

A discussion on the synergistic and harmonious integration of underground space with
prime and sustainable features aboveground

2

从勒·柯布西耶学习怎么样去加强地下空间与
地上自然景物和人造美景的相互和谐连接

To learn from Le Corbusier on integration golden
ratio, and nature into spaces above ground and
below ground



$C/B = B/A = \Phi = 1.618 =$
黄金比例=golden ratio



自然景物和人造美景和谐连接:
黄金比例 1.618... , ...太阳, 天空, 大地... , 地下空间的价值

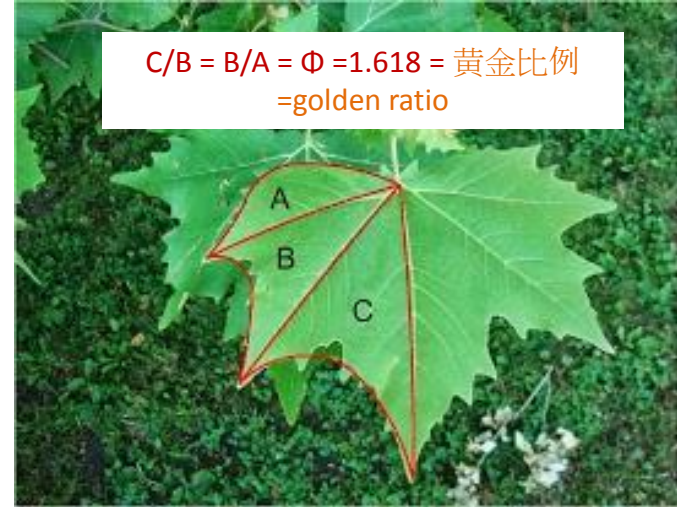
Synergistic and harmonious integration
of prime and sustainable **features** and
Nature:

Golden Ratio, 1.618...is everywhere, in
every living things ,

...The sun , sky, earth... , Value of
underground space.,
Greenery, ...



自然景物.. **The nature ...**



大自然的Φ, 黄金比例
-golden ratio

悠悠乎与颢气俱... 洋洋乎与造物者游... (始得西山宴游记 - 唐·柳宗元)

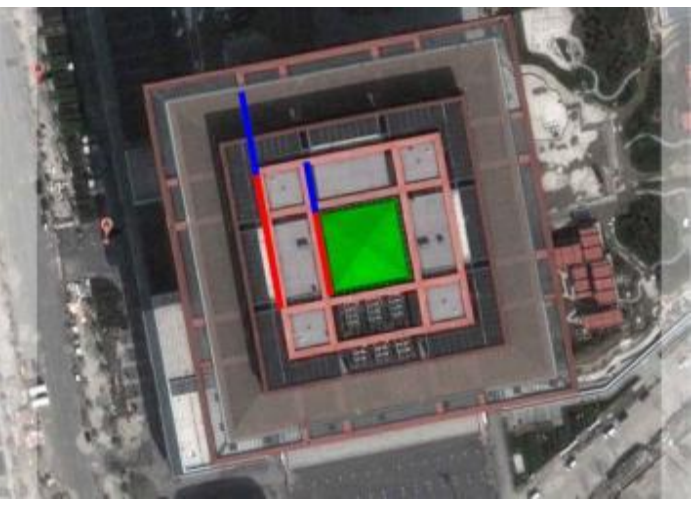




上海電視塔日晷, 10月1日國慶日 Shanghai TV Tower Sundial , 1 October

http://www.youtube.com/watch?v=A_CH1yWL6uU&list=UUBeEJ2vJ2KTfPEUoloL-IWg

人為景物...
Man-made...



RED/BLUE = 1.618 =
「黃金比例」 -
golden ratio in
China Pavilion,
World Expo Site,
Shanghai ,
上海世博会址 - 中国馆的
「黃金比例」



薩沃耶別墅(法國)

勒·柯布西耶(1887 – 1965), 「現代建築的旗手」 設計
建築內部應用「黃金比例」佈局

Villa Savoye, France

by **Le Corbusier** (1887-1965), pioneer of Modern Architecture
Golden ratio [1.618 : 1] in the building layout

<http://www.socialdesignmagazine.com/en/site/architettura/le-corbusier-ville-savoie.html>



佈局 -> 花園 (開放式/半開放式綠化空間) -> 室內空間 -> 屋頂花園 (綠化屋頂)



Traffic → Garden (Open, semi-open green space-nature) → interior → roof garden (green roof-nature)

薩沃耶別墅(法國)

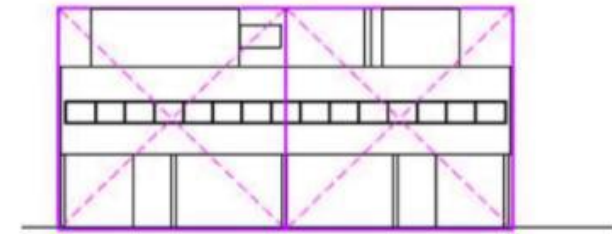
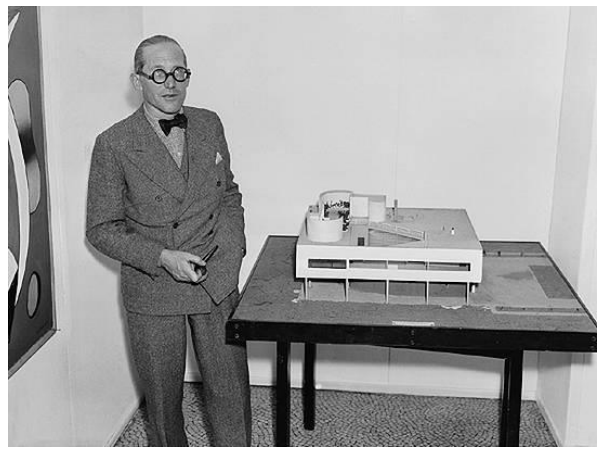
勒·柯比意 (1887 – 1965),

「現代建築的旗手」 設計

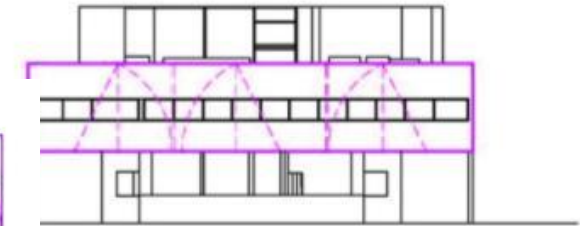
Villa Savoye, France

by Le Corbusier (1887-1965),
pioneer of Modern Architecture

Golden ratio [1.618 : 1] in the building layout
建築設計方案充滿「黃金比例」



NORTH EAST ELEVATION



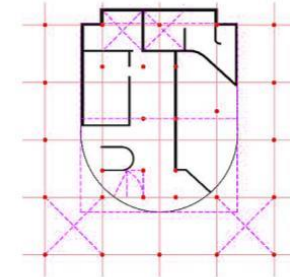
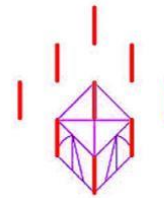
SOUTH EAST ELEVATION



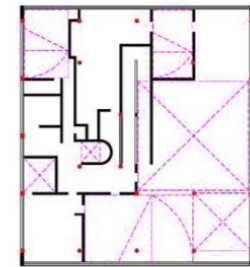
GOLDEN RECTANGLE



ROOT 5 RECTANGLE

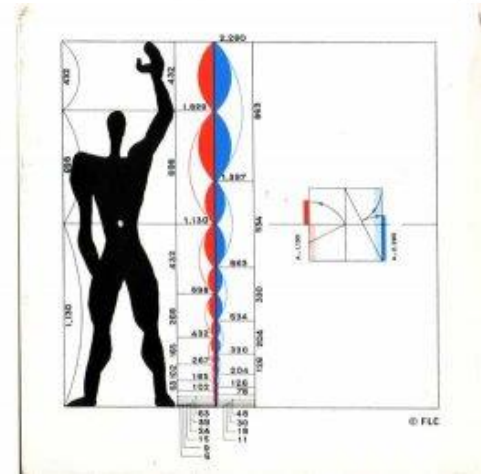


GROUND FLOOR PLAN



FIRST FLOOR PLAN

LE MODULOR
ESSAI SUR
UNE MESURE HARMONIQUE
A
L'ECHELLE HUMAINE
APPLICABLE
UNIVERSELLEMENT
A
L'ARCHITECTURE
ET A
LA MÉCANIQUE



Source courtesy: <http://webtice.ac-guyane.fr/kapel/spip.php?article79>

薩沃耶別墅(法國)

勒·柯比意 (1887 – 1965),

「現代建築的旗手」 設計

Villa Savoye, France

by Le Corbusier (1887-1965), pioneer of
Modern Architecture

Golden ratio [1.618 : 1]
in the building layout

建築設計方案充滿「黃金比例」
1.618 : 1

$$A = E ; B = F$$

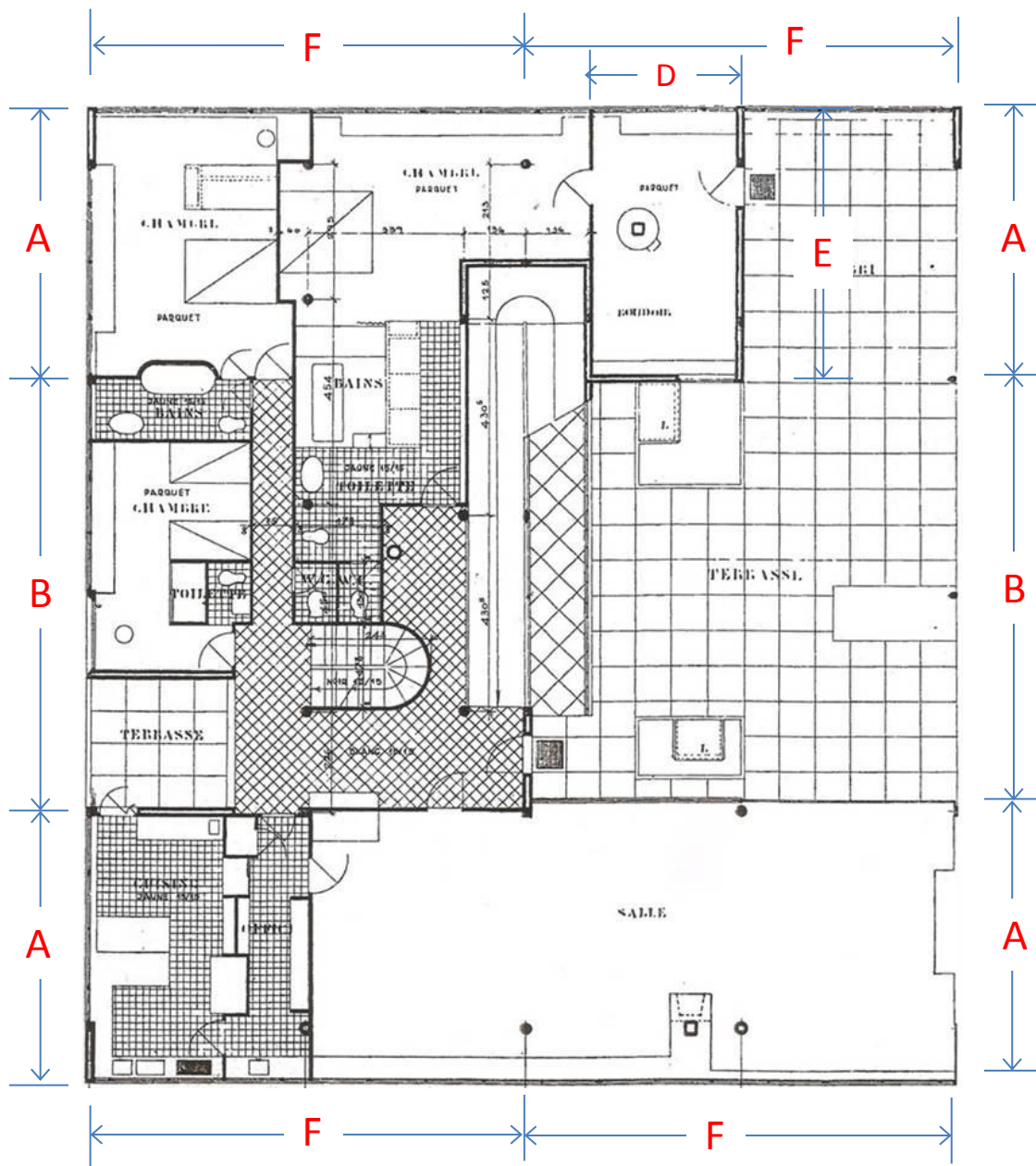
$$B/A = 1.618 = \Phi$$

$$(B+A)/B = 1.618 = \Phi$$

$$E/D = 1.618 = \Phi$$

$$(B+A)/F = 1.618 = \Phi$$

$$F/A = 1.618 = \Phi$$



薩沃耶別墅 與 香港上海匯豐銀行總行 相稱的建築空間

Villa Savoye & HSBC Tower, a spatial analogy

香港上海匯豐銀行總行
HSBC Tower



綠化屋頂(尚未有)
Green Roof (yet to be provided)



室內空間
Interior Space

薩沃耶別墅
Villa Savoye



花園/半開放式空間
Garden/Semi-open Space



薩沃耶別墅 與 香港大學 相稱的建築空間

Villa Savoye & HKU, a spatial analogy

綠化屋頂
Green Roof

室內空間
Interior Space

花園/半開放式空間
Garden/Semi-open Space



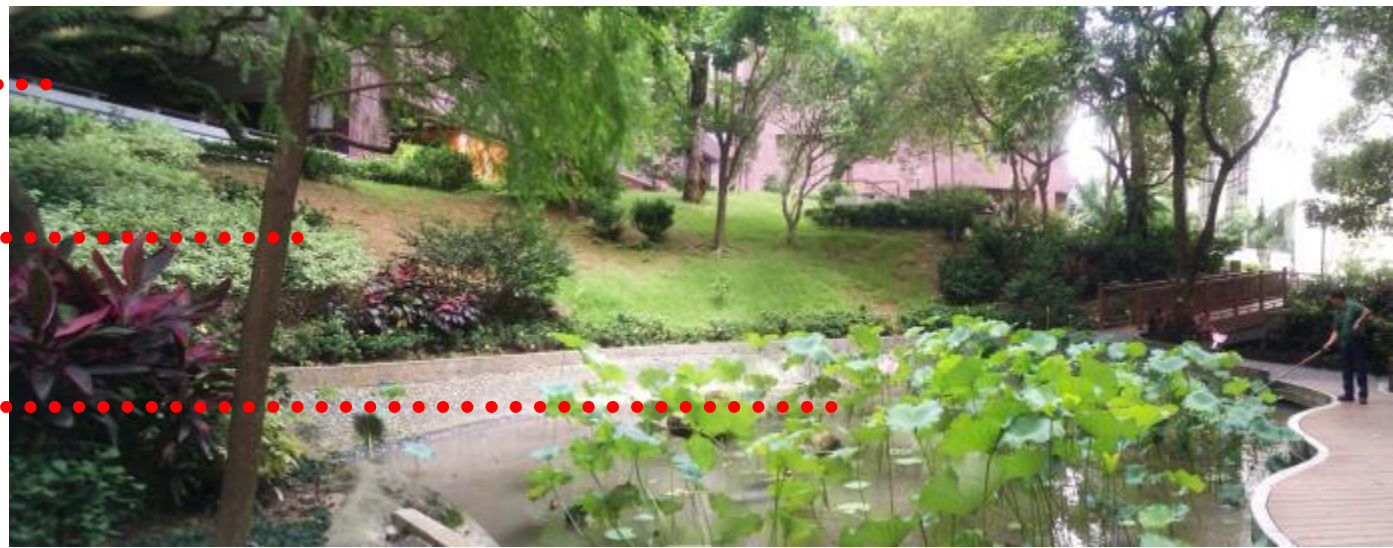
薩沃耶別墅
Villa Savoye

香港大學荷花池
Lotus Pond, HKU

綠化屋頂
Green Roof

室內空間
Interior Space

花園/半開放式空間
Garden/Semi-open Space



薩沃耶別墅 與 香港大學 及 香港上海匯豐銀行總行 相稱的建築空間

Villa Savoye, HKU & HSBC Tower, a spatial analogy

薩沃耶別墅
Villa Savoye



香港大學荷花池
Lotus Pond, HKU



香港上海匯豐銀行總行
HSBC Hong Kong



綠化屋頂
Green Roof

室內空間
Interior Space

花園/公共空間
Garden/Public Space

綠化屋頂
Green Roof

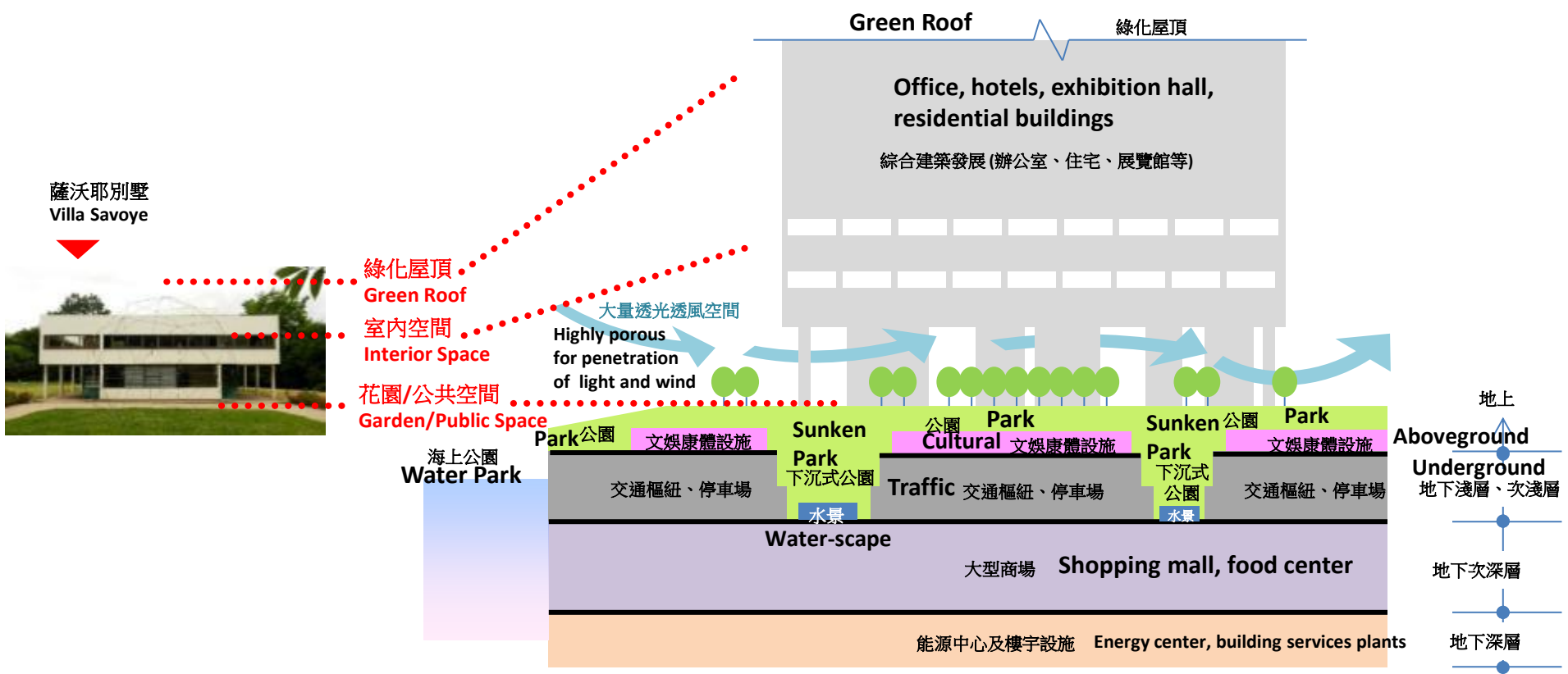
室內空間
Interior Space

花園/公共空間
Garden/Public Space

Villa Savoye, France, by Le Corbusier (1887-1965), pioneer of Modern Architecture

勒·柯比意, 「現代建築的旗手」 設計的薩沃耶別墅(法國)

Traffic → Garden (Open, semi-open green space-nature) → interior → roof garden (green roof-nature)



薩沃耶別墅
Villa Savoye



Villa Savoye, France, by Le Corbusier (1887-1965), pioneer of Modern Architecture

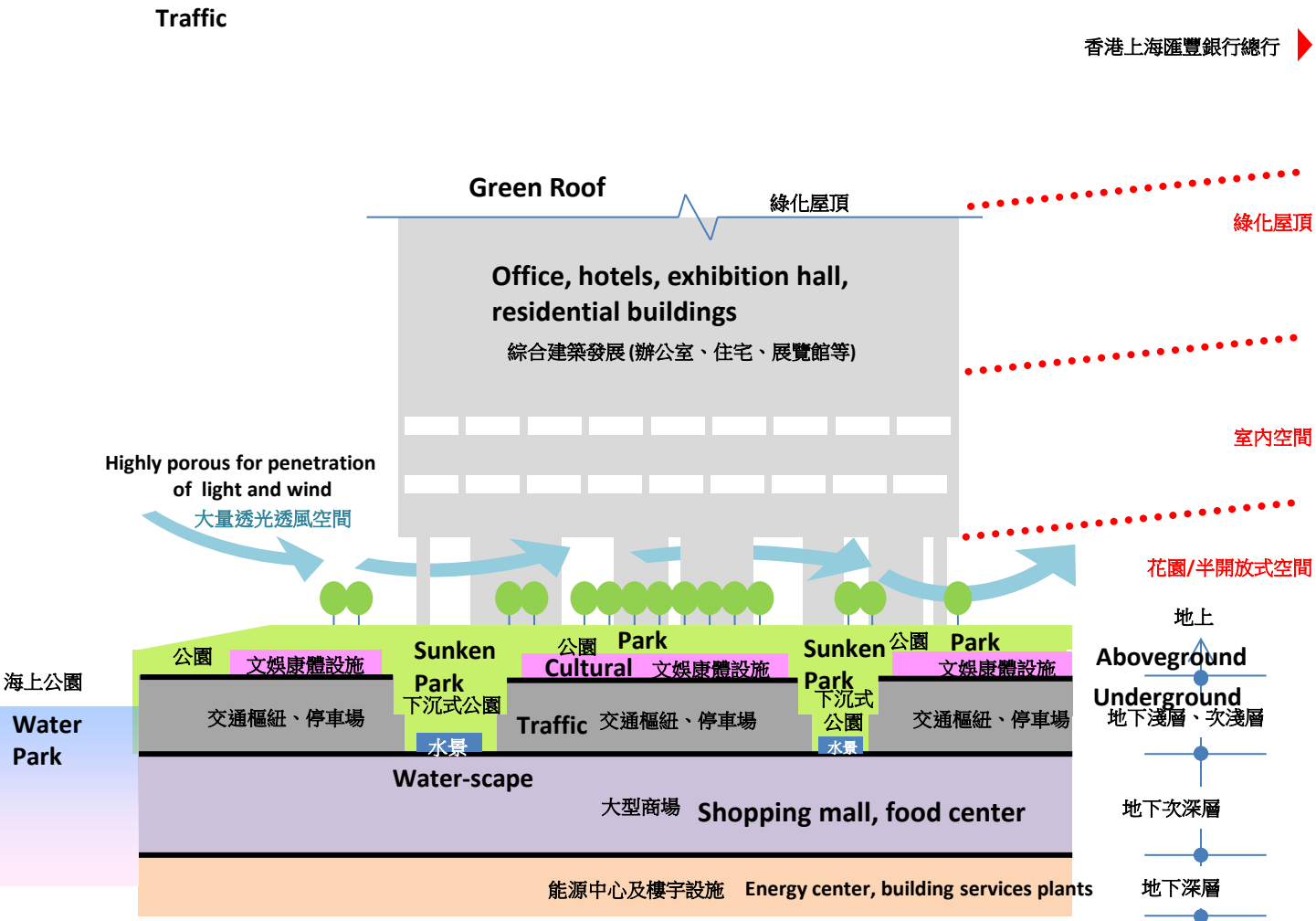
勒·柯比意, 「現代建築的旗手」 設計的薩沃耶別墅(法國)

Traffic → Garden (Open, semi-open green space-nature) → interior → roof garden (green roof-nature)

Traffic

Roof Garden 屋頂花園

香港上海匯豐銀行總行 ▶



海上公園

Water Park

Villa Savoye, France, by Le Corbusier (1887-1965), pioneer of Modern Architecture

勒·柯比意, 「現代建築的旗手」 設計的薩沃耶別墅(法國)

Traffic → Garden (Open, semi-open green space-nature) → interior → roof garden (green roof-nature)

溫室种植园 花园

[20-25度的室內空氣, 含二氧化碳1200 ppm]

室外空气 0-32 度

Greenhouse – Garden

[carbon dioxide of 1200 ppm from interior air at 20-25 degree C]
outside air 0-32 degree C

自然光
Natural Light

人造光
Artificial Light

Roof Garden 屋顶花园

花園/半開放式空間
Garden/Semi-open Space

Roof Garden 屋顶花园

香港上海匯豐銀行總行 HSBC ▶

綠化屋頂
Green Roof

室內空間
Interior Space



加强地下空间与地上自然景物和人造美景 的相互和谐连接方案的讨论

A discussion on the synergistic and harmonious integration of underground space with
prime and sustainable features aboveground

3

*****上海珍珠黄金梦 *****

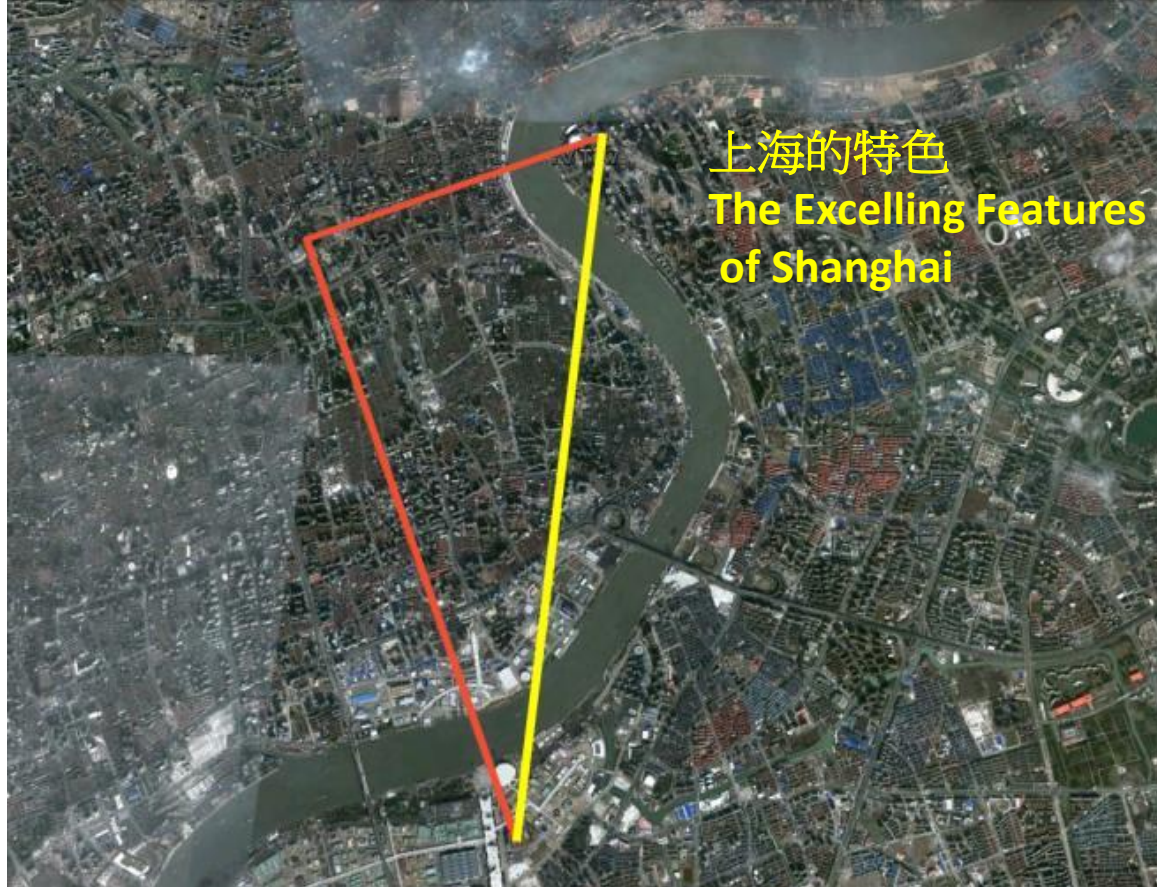
上海世博会地区的特色区佈局的再思

*****The Pearl-Gold Dream of Shanghai *****

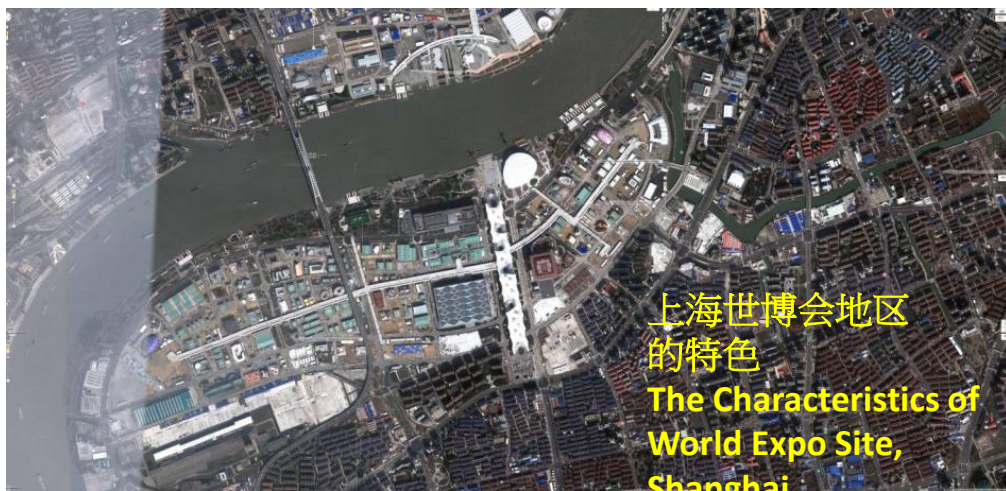
The Characteristics of the World Expo Site,
Shanghai Rethinking of District Layout principles

上海珍珠黄金梦

The Pearl-Gold
Dream of Shanghai



上海的特色
The Excelling Features
of Shanghai



上海世博会地区的
特色
The Characteristics of
World Expo Site,
Shanghai

黃金風光在上海：上海「東方明珠塔水陸兩岸」日晷

7月19日的日晷視頻

Shanghai has a legend :

<http://www.youtube.com/watch?v=8mHceteNu1o&feature=c4-overview&list=UUBeEJ2vJ2KTfPEUoloL-IWg>

The Oriental Pearl Tower Sundial, Shanghai

Sundial video, 19 Jul



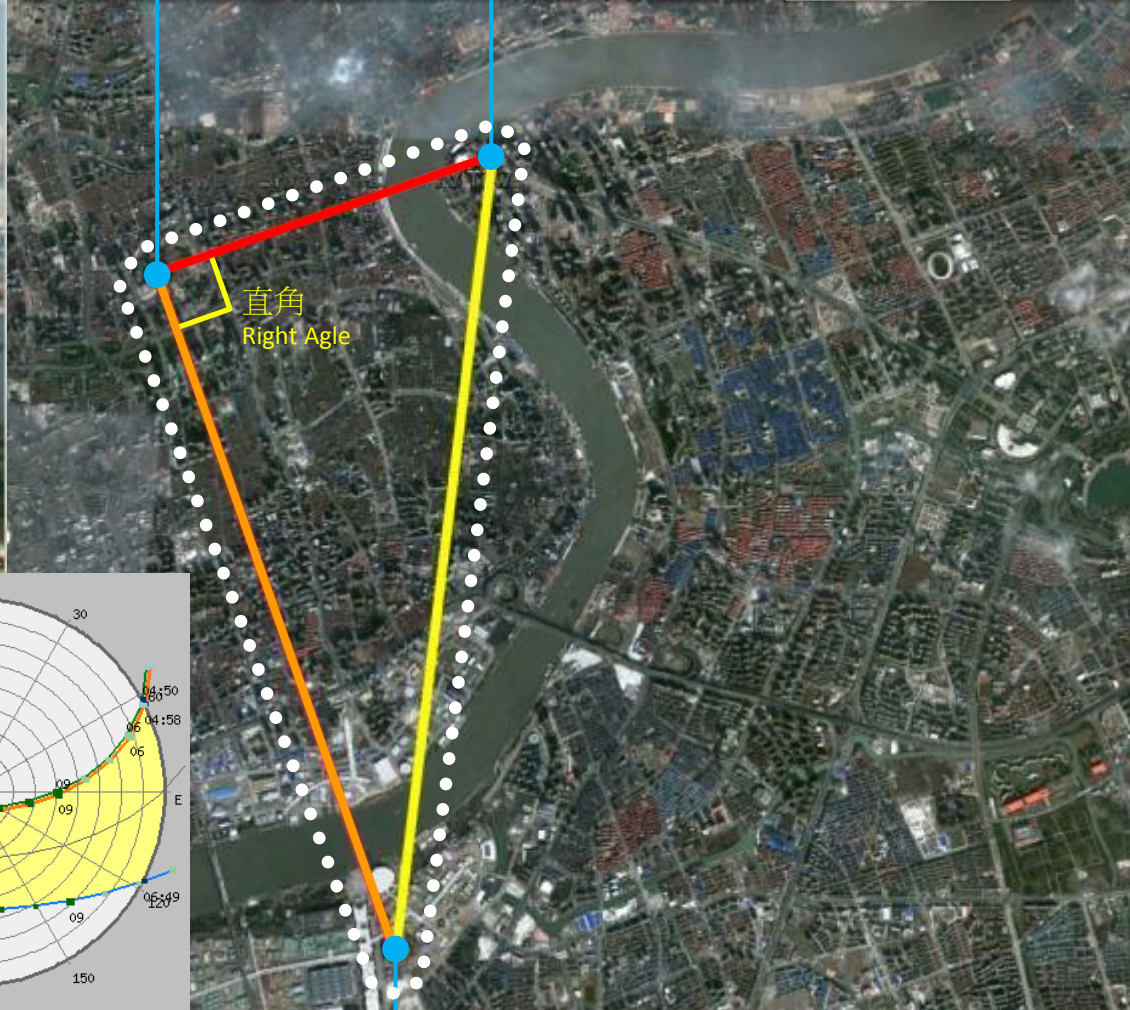
人民公園 (百花池?)
People's Park



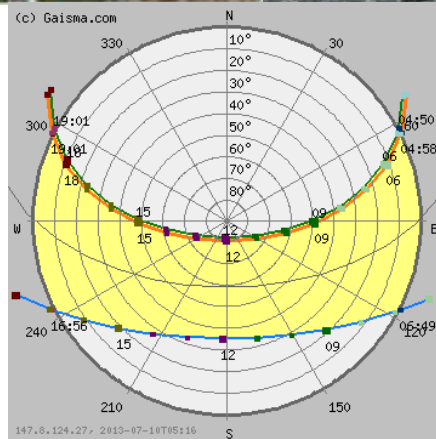
東方明珠塔
Oriental Pearl Tower



www.beijingtoursguide.com



冬節午前滬陽暖
黃浦江畔抱明珠



*By yon bonnie banks,
Oh Huangpu River,
The eye of heaven shines,
And embraces The Oriental Pearl,
In a sunny warm winter day,
a warm winter time before noon.*

上海日照角度圖表 Solar chart of Shanghai

Image courtesy : <http://www.gaisma.com/en/dir/001-continent.html> ;

<http://www.beijingtoursguide.com/attractions/oriental-pearl-tv-tower.html>

中國國家館
China Pavilion



冬季上午
Winter morning

黃金風光在上海：上海「東方明珠塔水陸兩岸」日晷

The Oriental Pearl Tower River-land Sundial, Shanghai

冬季下午
Winter afternoon



夏季上午
Summer morning

東方明珠塔
Oriental Pearl Tower

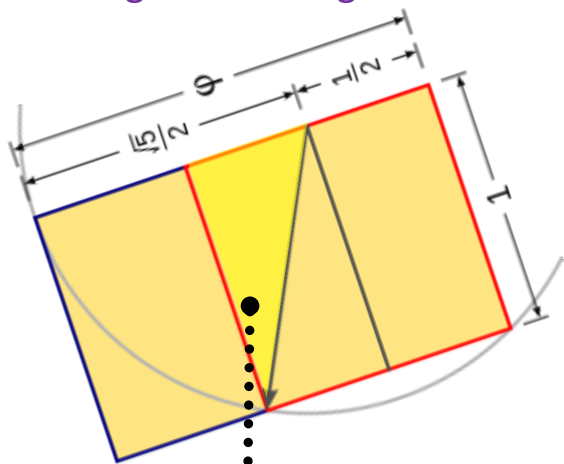
夏季中午
Summer noon

夏季下午
Summer afternoon



黃金風光在上海：上海發現「世界-地理-幾何-黃金比例」奇觀

Shanghai has a legend : Discovery of The Geo-Geometric-Golden-Ratio World-Wonder of Shanghai



基础「黄金比例」三角形
The fundamental golden ratio triangle

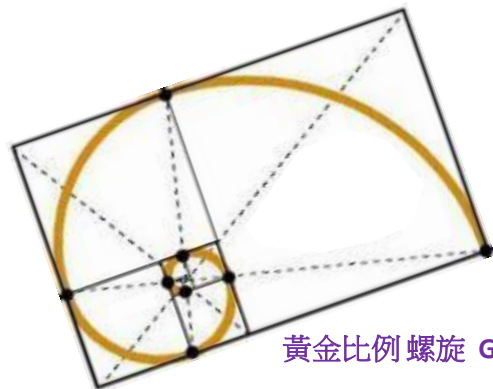
長度比例

$$A / B = 1/2 ; C = (\sqrt{5})/2 ;$$

$$(A+C) / B = 1.618 = \phi$$

= 黃金比例

= Golden Ratio



黃金比例螺旋 Golden Ratio Spiral



人民公園 (百花池?)
People's Park



東方明珠塔
Oriental Pearl Tower

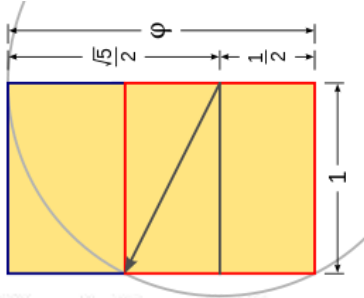


中國國家館
China Pavilion



黃金風光在上海：上海發現「世界-地理-幾何-黃金比例」奇觀

Shanghai has a legend : Discovery of The Geo-Geometric-Golden-Ratio World-Wonder of Shanghai



← 基础「黄金比例」三角形 導致繪製其他「黄金比例」三角形

The “ fundamental golden ratio triangle” will lead to →

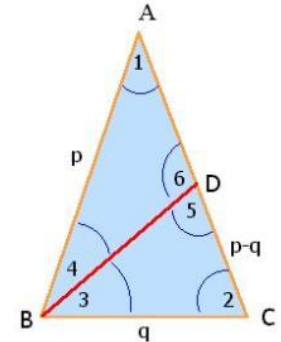
Construction of the Golden Triangle

http://www.iesystems.com/mathisfun/p/f_c_construction_of_golden_triangle_img.jpg

Start with an isosceles triangle ABC. Draw a segment BD to form two other isosceles triangles ABD and DBC.

- 1) angle 5 = angle 2
- 2) angle 3 + angle 4 = angle 2
- 3) angle 5 = angle 3 + angle 4
- 4) angle 5 = angle 1 + angle 4
- 5) angle 1 = angle 3
- 6) angle 1 = angle 4
- 7) angle 2 = angle 3 + angle 4
- 8) angle 2 = 2 x angle 1
- 9) angles 1 + 2 + 3 + 4 = 180
- 10) angles 1+1+1+1+1 = 180
- 11) angle 1 = $180^\circ/5 = 36^\circ$ and angles 2 and 5 = 72°

- 1) Triangle DBC is isosceles
- 2) Triangle ABC is isosceles
- 3) Things equal to the same thing ...
- 4) Exterior angle 5 = sum of remote interior angles 1 and 4
- 5) from 3), 4) above
- 6) Triangle ABD is isosceles
- 7) Triangle ABC is isosceles
- 8) from 5), 6) 7) above
- 9) degrees in a triangle
- 10) from 5), 6), 8) above



$$\phi = (1 + \sqrt{5})/2 = 2\cos(36 \text{ degree}) = 1.61803398875$$

Since triangles ABC and DBC are similar, the ratio of corresponding sides is:

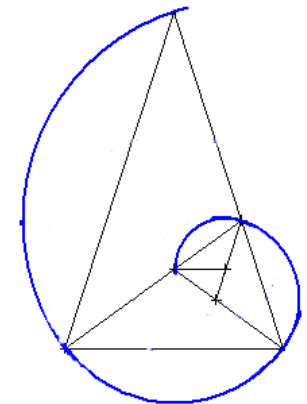
$$\frac{p}{q} = \frac{q}{p - q}$$

This results in the quadratic equation $(p/q)^2 - (p/q) - 1 = 0$

The solution is
$$\frac{p}{q} = \frac{\sqrt{5} + 1}{2}$$

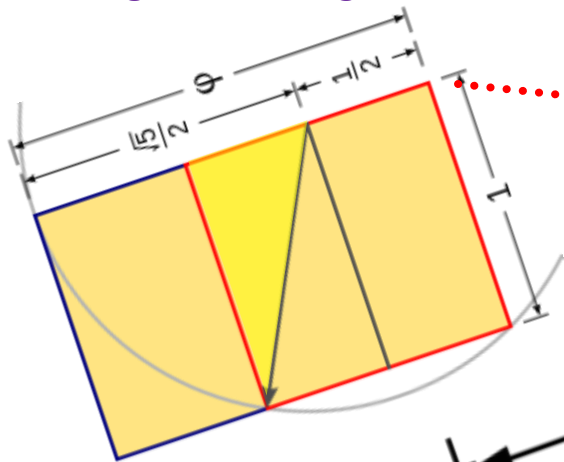
Therefore, the ratio of side p to side q is 1.6180339...

This number is called the Golden Mean and is denoted by the Greek letter phi ϕ



黃金風光在上海：上海發現「世界-地理-幾何-黃金比例」奇觀

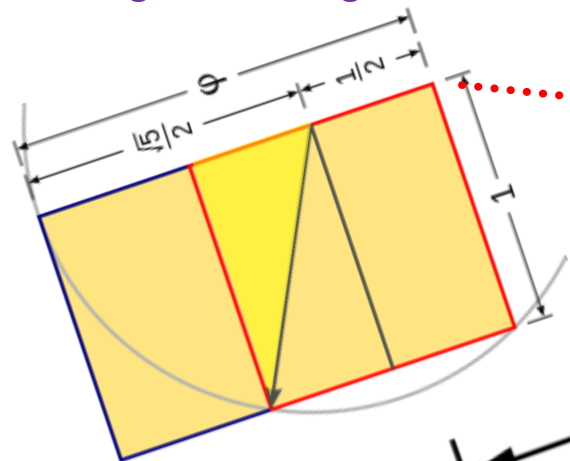
Shanghai has a legend : Discovery of The Geo-Geometric-Golden-Ratio World-Wonder of Shanghai



中國國家館
China Pavilion

黃金風光在上海：上海發現「世界-地理-幾何-黃金比例」奇觀

Shanghai has a legend : Discovery of The Geo-Geometric-Golden-Ratio World-Wonder of Shanghai



把人民公園、東方明珠塔、世博區的中國館「三點」，用直線連起來，竟奇妙地構成「黃金比例」圖形中的「基礎黃金直角三角形」，實在是驚世的「黃金比例」城市地理幾何奇觀。

兼且人民公園代表著上海人民，優秀的文化傳統、本質和基楚。東方明珠塔代表著上海人民，致力惟推動改革開放，資訊飛越，帶動祖國現代化的一個引擎。世博區的中國館象徵著上海貢獻祖國，與國際接軌，善結全球萬族，共創人類幸福未來。

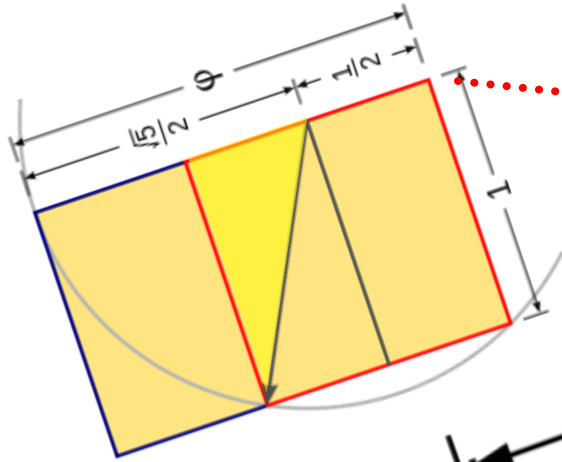
這個驚世的「黃金比例」城市地理幾何奇觀更又同時完整地把上海一切優越本質、成就、貢獻都表徵出來，是奇觀中的奇妙，舉世無雙。

中國國家館
China Pavilion



黃金風光在上海：上海發現「世界-地理-幾何-黃金比例」奇觀

Shanghai has a legend : Discovery of The Geo-Geometric-Golden-Ratio World-Wonder of Shanghai



東方明珠塔
Oriental Pearl Tower



人民公園 (百花池?)
People's Park



中國國家館
China Pavilion



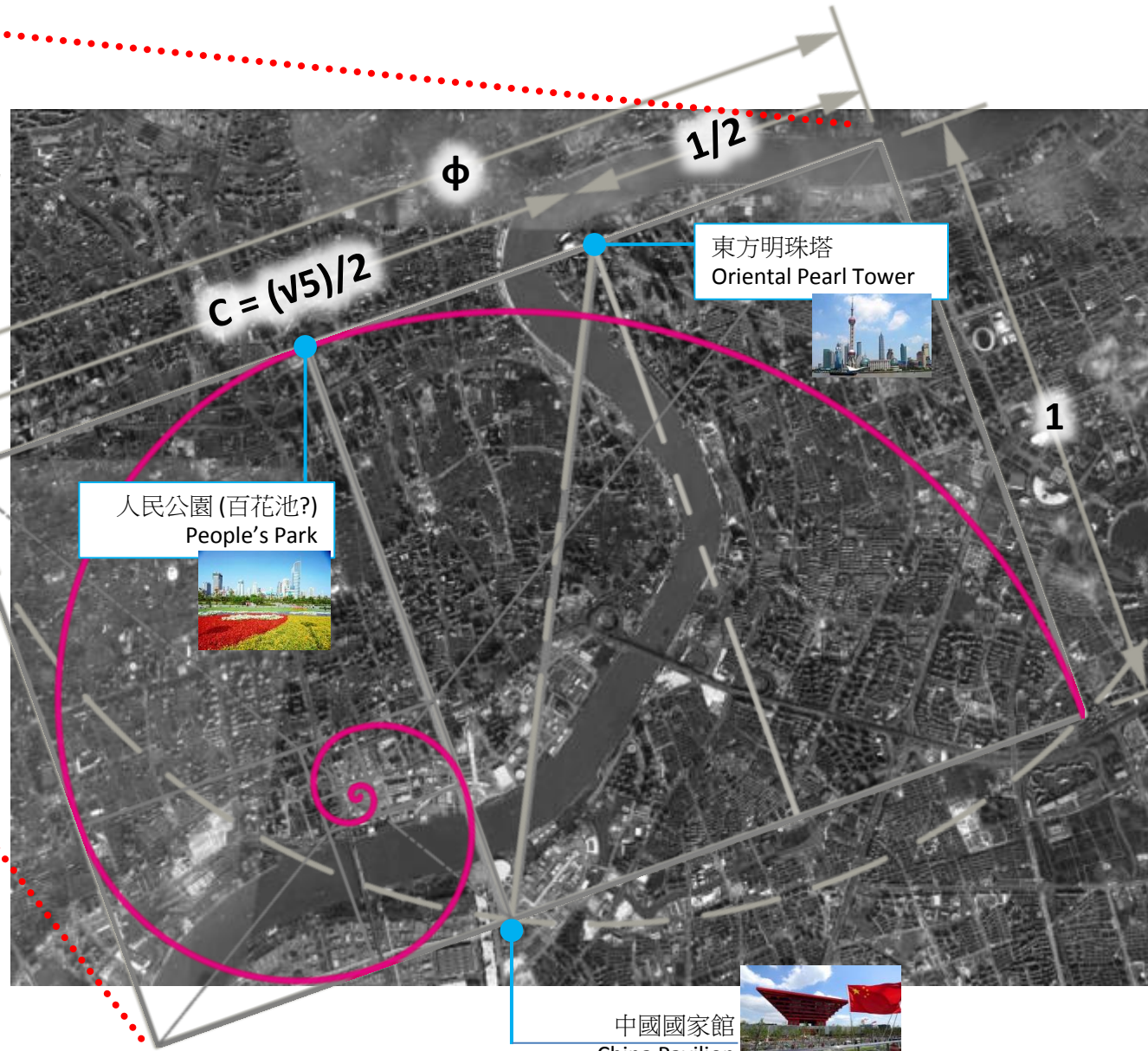
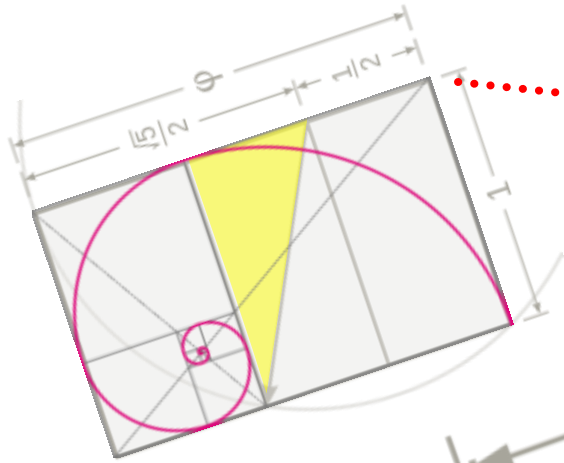
The unique Golden Ratio Right-angled triangle of Shanghai will be form by connecting People's Park, Oriental Pearl Tower, and China Pavilion, Expo site.

People's Park signifies the super rich cultural quality of Shanghai people; Oriental Pearl Tower is the symbol of modernization and IT advancement; & the China Pavilion promotes international friendship and joint endeavors.


All these are further excelled by The golden ratio Geo-geometric world-wonder UNIQUE to Shanghai.

黃金風光在上海：上海發現「世界-地理-幾何-黃金比例」奇觀

Shanghai has a legend : Discovery of The Geo-Geometric-Golden-Ratio World-Wonder of Shanghai



東方明珠塔
Oriental Pearl Tower



人民公園 (百花池?)
People's Park



中國國家館
China Pavilion



大上海-黃金比例螺旋 1
Greater Shanghai -
Golden Ratio Spiral 1

黃金風光在上海：上海發現「世界-地理-幾何-黃金比例」奇觀

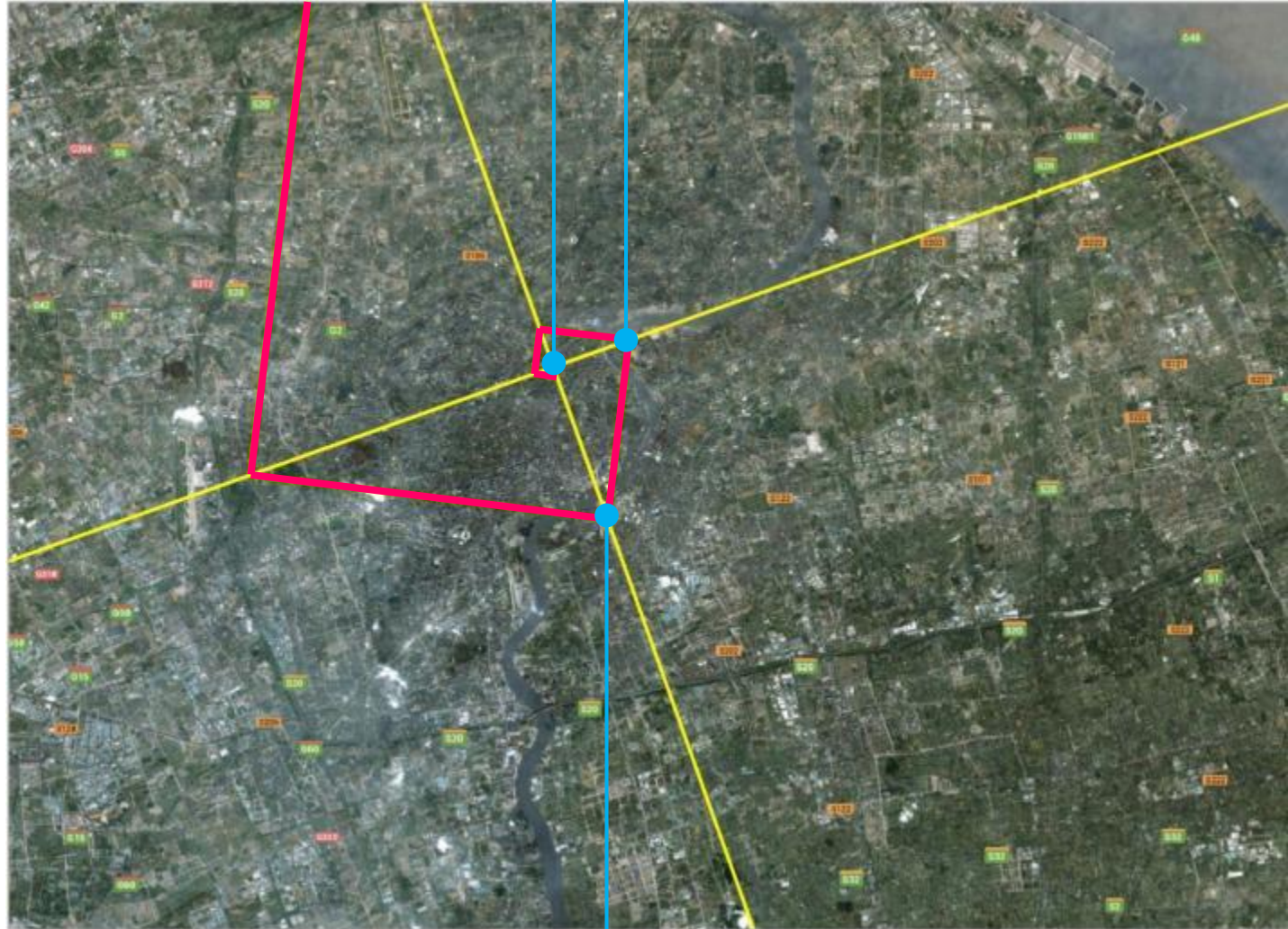
Shanghai has a legend : Discovery of The Geo-Geometric-Golden-Ratio World-Wonder of Shanghai



人民公園 (百花池?)
People's Park



東方明珠塔
Oriental Pearl Tower



大上海-金比例螺旋 2
Greater Shanghai -
Golden Ratio Spiral 2



中國國家館
China Pavilion

黃金風光在上海：上海發現「世界-地理-幾何-黃金比例」奇觀

Shanghai has a legend : Discovery of The Geo-Geometric-Golden-Ratio World-Wonder of Shanghai



大上海-黃金比例螺旋3

Greater Shanghai - Golden Ratio Spiral 3

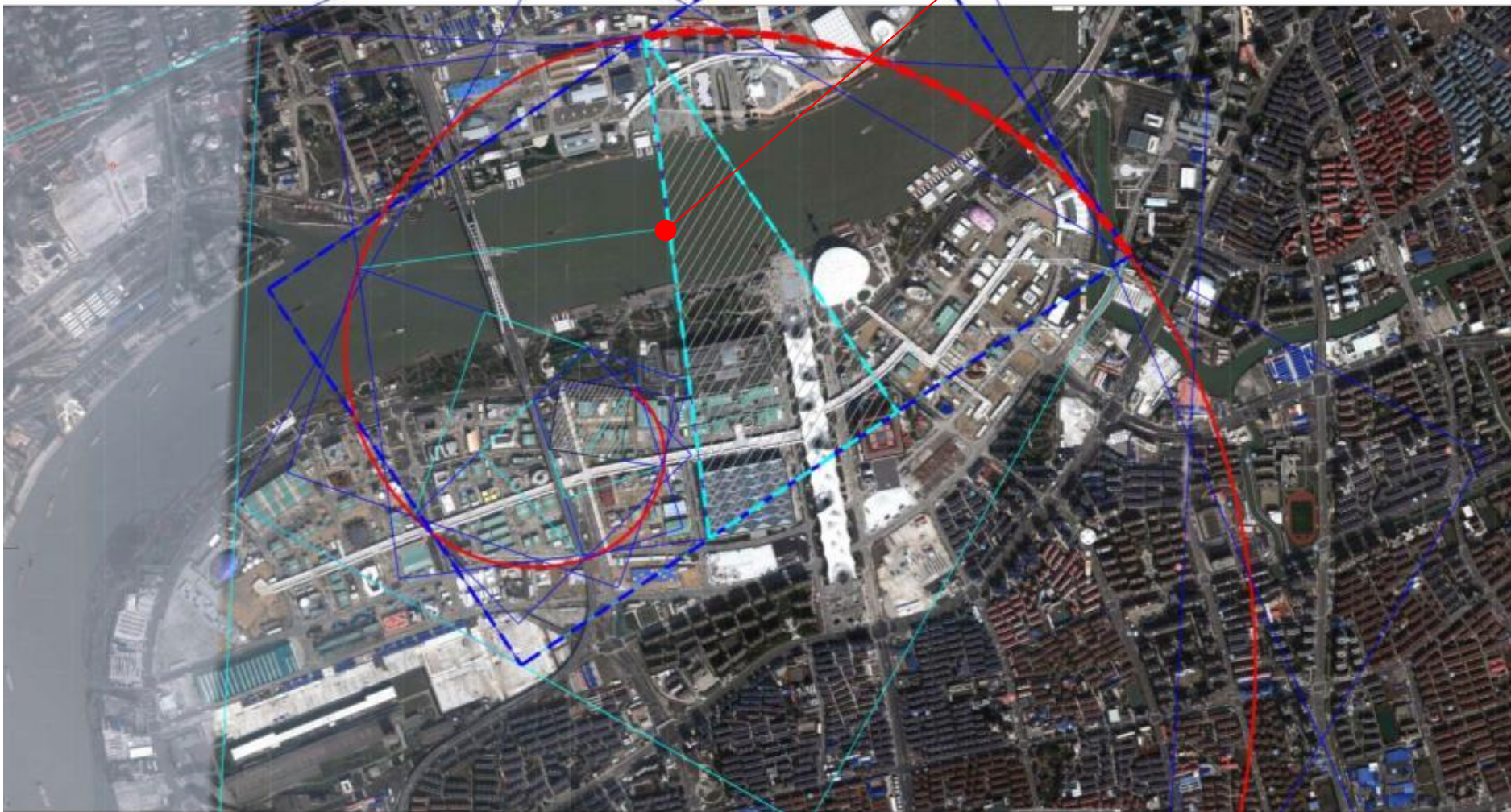
人民公園，東方明珠塔，世博區的中國館「三點」用直線連起來，形成「基礎黃金直角三角形」，以便進一步發展其他黃金比例幾何圖形

Peoples' Park, Oriental Pearl Tower, China Pavilion are connected in straight lines to form the "Basic Golden Ratio Right-angled Triangle", for further development of golden ratio geometries

上海世博会场馆区 - 黄金比例螺旋 A [基本直角三角形 ; 63.5度的圆弧, 半径= $\sqrt{5}$]

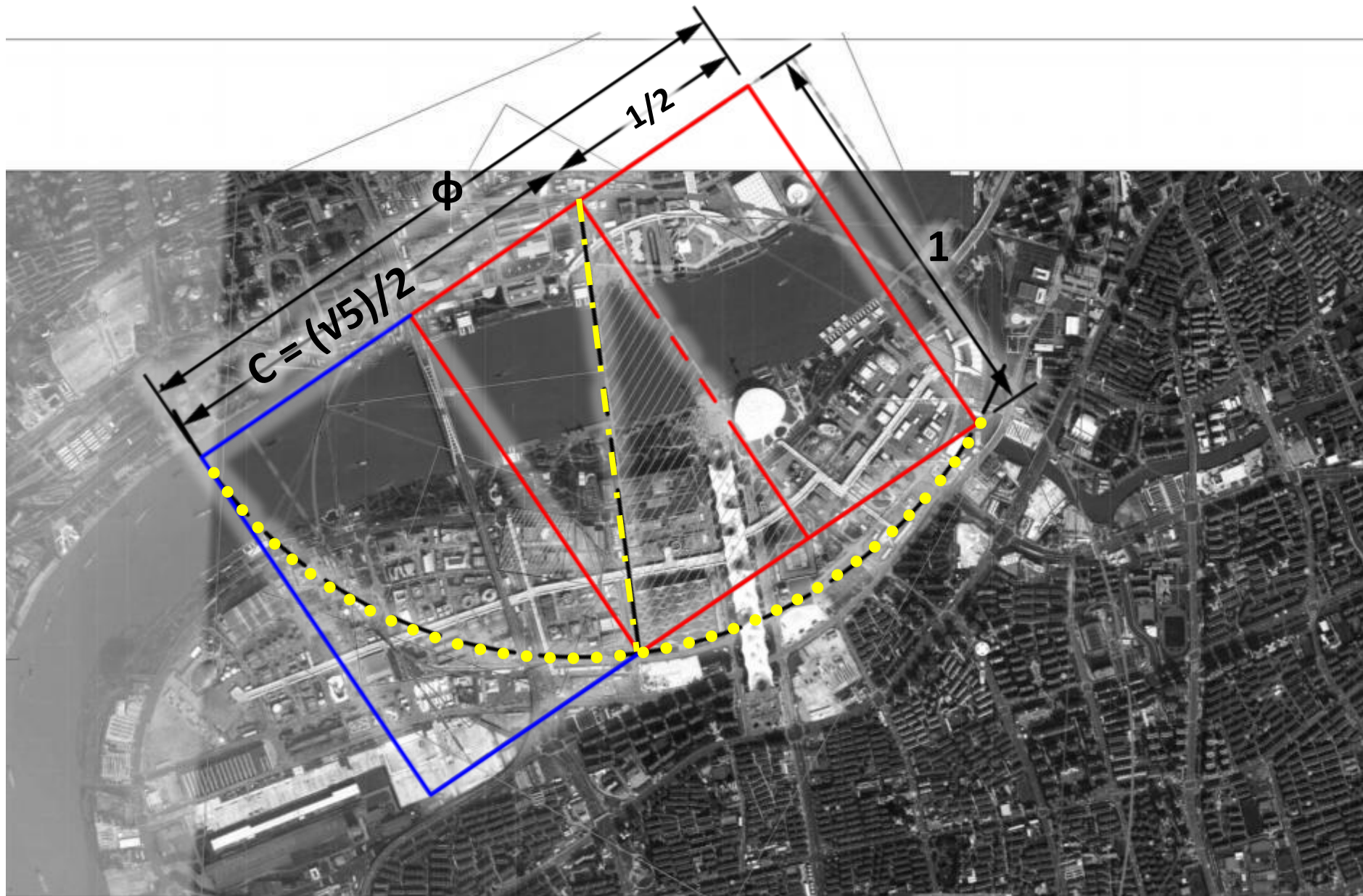
World Expo Site, Shanghai - Golden Ratio Spiral A [Basic right-angled triangle Square ; 63.5-degree arc , radius = $\sqrt{5}$]

黄金比例点 Golden ratio point



上海世博会场馆区 - 黄金比例螺旋 B [基本直角三角形 ; 90度的圆弧, 半径= $\sqrt{5}$]

World Expo Site, Shanghai - Golden Ratio Spiral B [Basic right-angled triangle Square ; 90-degree arc , radius = $\sqrt{5}$]



上海世博会场馆区 - 黄金比例螺旋 C [基本直角三角形 ; 90度的圆弧, 半径= 1]

World Expo Site, Shanghai - Golden Ratio Spiral C [Basic right-angled triangle Square ; 90-degree arc , radius=1]



RED/BLUE =
1.618 =
「黄金比例」

上海世博会址
-中国馆的
「黄金比例」

golden ration
in China
Pavilion,
World Expo
Site, Shanghai

上海世博会场馆区 World Expo Site, Shanghai

自然景物和人造美景和谐连接：黄金比例 1.618.....

是无处不在，每一个活的东西，日晷[太阳，天空，大地]，地下空间的价值

Synergistic and harmonious integration of prime and sustainable features and Nature: Golden Ratio, 1.618...is everywhere, in every living things, Sundial [The sun , sky, earth] , Value of underground space., Greenery, ...

世博区建筑物和景点的距离布局可考虑以「黄金比例」为主导设计原则。布局可形成多样化的「黄金比例」的线条、三角形、四边形、星形、多边形、立体形。

「黄金比例」主导设计原则也可应用在建筑物内外空间和形状设计上、甚至应用在地下空间里透入天空地上天然光的玻璃布局，让天空地上地下空间和谐连接。又可考虑建设「黄金比例」博览馆，展示世界各国「黄金比例」多元化的知识，实物，影音，电脑模拟，《萬國「黄金比例」风采耀浦江》。又和应筑物和景点的「黄金比例」主导设计原则，甚至仿建 Le Corbusier 以「黄金比例」为主导设计原则的Marseilles Unite D'Habitation, France 和 Villa Savoye , France, 依照原本图纸和法规仿建,作为展品。 [image courtesy : <http://litspat.medialoperations.com/>]

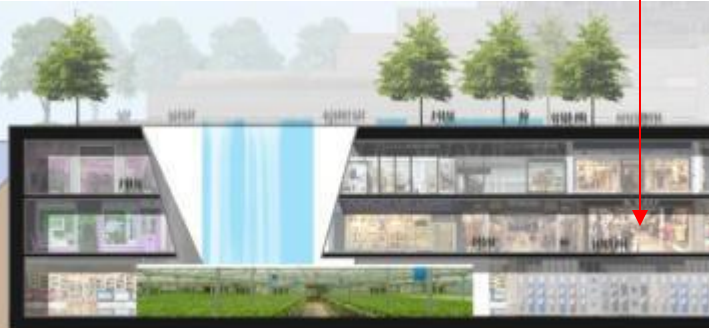
亦可考虑建设「黄金比例」1.618百万平方米大型「地下城」，是文化体育娱乐购物百货商场交通枢纽「地下城」。

上海世博会址 - 中国馆的「黄金比例」
Golden ration in China Pavilion, World Expo Site, Shanghai



RED/BLUE = 1.618 = 「黄金比例」

Marseilles Unite D'Habitation, France



上海世博会场馆区 World Expo Site, Shanghai

Synergistic and harmonious integration of prime and sustainable features and Nature: Golden Ratio, 1.618...is everywhere, in every living things , Sundial [The sun , sky, earth] , Value of underground space., Greenery, ...

World Expo can be designed with : Golden Ratio, 1.618 as the directive for distances between buildings, the form of buildings. Golden ratio triangles, gnomons, polygons, etc. , even golden ratio solid forms and biomimicry can be used for design buildings and spaces. Natural lighting diffusing into underground space through glass arranged in golden ratio spacing , will form a strong golden ratio configuring underground, serving a means of harmonious integrating of underground and aboveground environment.

Also a Golden Ration museum can be established, to show case world wide knowledge and designs using golden ratio, in physical means or virtual means. The buildings designed by Le Corbusier using golden ratio, such as Marseilles Unite D'Habitation, France and Villa Savoye , France, can be built in Expo Site, Shanghai, based on the original drawings designed by Le Corbusier. [image courtesy : <http://litspat.medialoperations.com/>]

Also desirable to build a golden ratio underground city of 1.618 million square meter, consisting of cultural, entertainment, shopping, sports facilities, traffic hub, food centers.

上海世博会址 -中国馆的 「黄金比例」
Golden ration in China Pavilion, World Expo Site, Shanghai



RED/BLUE = 1.618 = 「黄金比例」

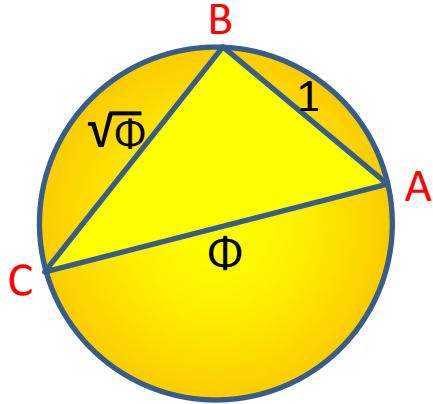
Marseilles Unite D'Habitation, France



上海世博会场馆区 World Expo Site, Shanghai

可考虑使用「黄金比例」直角三角形为建筑物和景点布局设计原则

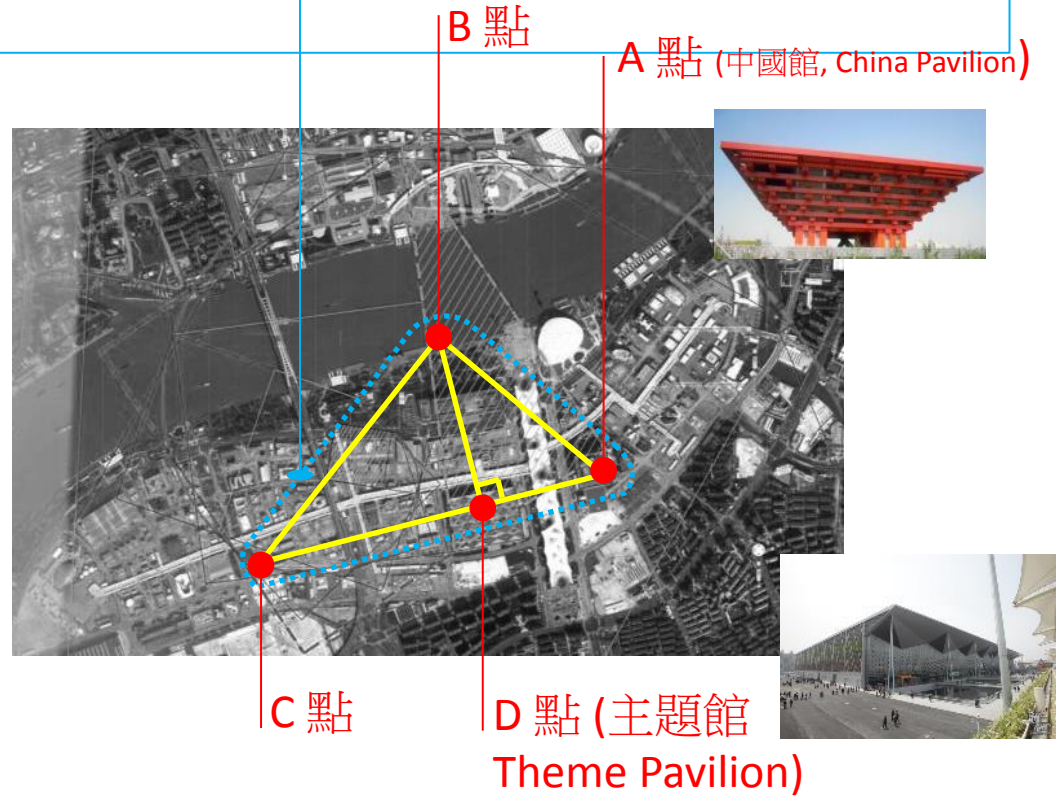
Possible use of golden ratio right angled triangle in layout of key buildings and facilities, and landscape



$CA/BA=CD/DA =$ 「黄金比例」 1.618

世博区建筑物和景点的距离布局可考虑以「黄金比例」为主导设计原则。布局可形成多样化的「黄金比例」的线条、三角形、四边形、星形、多边形、立体形.....

世博区可考虑建设「黄金比例」1.618百万平方米大型「地下城」，是文化体育娱乐购物百货商场交通枢纽「地下城」。Also desirable to build a golden ratio underground city of 1.618 million square meter, consisting of cultural, entertainment, shopping, sports facilities, traffic hub, food centers.



几何学有两个伟大的宝藏：第一个宝藏是「毕达哥拉斯定理」；另一个宝藏是：划分一条线到「极端比」和「平均比」。我们可以把第一个宝藏比作黄金；第二个宝藏呢，我们可以命名为「奇珍异珠」。

-- 約翰開普勒 (1571-1630)

德国数学家，天文学家，科学占星家

*Geometry has two great treasures:
one the Theorem of Pythagoras;
the other, the division of a line into extreme and mean ratio.
The first we may compare to a measure of gold;
the second we may name a precious jewel.*

-- Johann Kepler (1571-1630)

German mathematician, astronomer, scientific astrologer



「奇珍异珠」：「黄金比例」

The precious jewel : Golden Ratio



谢谢

Thank you very much