



"

:

..:

/ /

:

"

."

## Terminals' Modern Technological Approaches and Contemporary Airports" "Design

### ABSTRACT :

It is not hidden the role of technology in modern and contemporary airport terminals design, the have a large number for airports in which technology represent a second half of the twentieth century metaphor for contemporary culture that modified the mechanism of thinking, designing and ways in contemporary airport 'production. This research aims to determine and its applications terminals design .

Then the design of airport terminals \_which considered one of the most important building type\_ is not only related to the ideas of functions performance or buildings shapes as separated processes to produce this challenging building type, which is charged by functional encumbrances and is a airport symbolic building . There is inclusive overlapping between design issues of contemporary terminals, and the new technology. which distinguished the new approaches of contemporary airport architecture, and has led to formulate a research problem considered about **the gab of knowledge in distinguishing the role of the new technological approaches for contemporary airport terminals, the "and its nature and its effect on design process**, the hypothesis formulated from this problem is: **compatibility of contemporary technology fundamentals and contemporary airport terminals main systems, that produces new approaches affected and the integration of its design issues by the use of the technological dimension as a method of thinking and producing and as a tool "for expression**

:

: \_\_\_\_\_



:

:

:

:



\_\_\_\_\_

:

\_\_\_\_\_

:

:



: (Edwards,2005,153)

- 
- 
- 
- 

mega structure"

:( Sebestyen,2003,p80)

: wide-span structure (a

(  
structural and envelope systems

( )

(Blow,1991,p127)

“ shape”

capsule

- 

- 
- 
-

( / "U " :  
"tent structure" )

( ) (Gepford,2004,p12) ( ) •  
: " pylons" •

telfoncoated fibreglass

glider wing

snow load

V

(Robbin, 1996,p72) ( )

: space structure (c)

"trees "

( ) /Stuttgart

"truss systems"

(umbrella )

/

(Sebestyen,2003,p81)

Membranes (b)

"flat skeletal grid"

: tension structure :

( )

( )

"plates"

)

(Sebestyen,2003,p85)



/

3d )

(space truss

.(Blow,1996,p152)

( )

.(Scodeck,2000,p12-14)

)

.( ..

.

..

: lighting •

:

(

tactile "

"element

" spaceless "

(Eizenman,1984,p70)

. (De Neufville,2003,p132)

"way finding "

:

: (objects ) •

. (Dempsey,1999,p213)

(  
:(services)  
:"lighting" (a

—  
—  
.(Edwards,2005,p97)

: structure •

)

( .

. (Ibid,p98)

. (Ashford,1991,p292)



(5).

/

"

%

"canyon

.( Edwards,2005,p166)

-

-

%

( )\_

❖

(6)

.(Bunchanan,1994,p76)

(HVAC air heating (b

:,ventilation cooling)

(Fordham,1995,p )

/

:

/

/

(Edwards,2005,p167)

/

(7)

macro

micro

(Edwards,2005,p168)

: "fire safety"

(c

" "

(Wang,2010,p240)

" stacks "



(Robbin,1991,p58 )



:(Edwards,2005,p165)



(Dempsey,2003,p224)



:(Robbin,1991,p40)

(Ibid,p66)

system

(d

:Telecoms

( )

. (Bachman,2003,p40)

. (Wang,2010,p43)

.(Edwards,2005,p165)

co2

..  
.(Wang,2010,p49)

\_\_\_\_\_.  
:\_\_\_\_\_

(a

:

.(Wang,2010,p235)



)

.(Frampton,1995,p20)

.(  
/

:(Edwards,2005,p271)

*“The tectonic is the Gestalt of the age  
and the terminal is the perfect vehicle  
for its expression”*

( tectonic

ideal

( - )

(9)

.(Edwards,2005,p270)

/

(8)

) (b

(

:

(

(

/

**.(Bachman,2003,p145)**

. (12)

(

:

roof profile

(

/

:

(

(13)

**.(Buchanan,1997,p9)**

Inchon air transportation centre/Seoul

ribs

. (10) **(Charleson,2005,p133)**

(

Terry Farrell &partners

)

(

double skin

(11)

/

**.(Pearman,2004,p167)**



( )

**(Ibid,p258)**

double glazing

\_\_\_\_\_

( )

**(Edwards,2005,p256)**

Inchon

\_\_\_\_\_:

)

(

spaceless

"

"mega structure



) :

(

:

( )

..

:

:

-

static

-

.( )

-

.( )

)

.( ..

Ashford, Norman, 1991 "Airport Engineering", John Wiley and Sons, USA

Aviation Symposium, "Sustainable Design of Airports", China/USA, 2009.

Bachman, Leonard, 2003, "Integrated Buildings: The Systems Basis of Architecture" ., John Wiley and Sons, USA

Blow, Christopher J, 1991, "Airport terminals " , Butterworth Architecture.

Blow, Christopher, J, 1996 "Airport terminals," . Butterworth Architecture

Buchanan ,Peter ,Renzo piano workshop ,complete works volume 111 , new york ;phaidon press inc.,1997  
(report

Charleson, Andrew W., 2005 "Structure as architecture", Architectural Press, UK.

De Neufville, Richard, 2003 "Airport system: planning, design, and management". McGraw-Hill Professional, USA

Dempsey, Paul Stephen, 1999, " Airport planning and development", McGraw-Hill Professional, USA

Edwards, Brian, 2005, " The Modern Airport Terminal: New Approaches to Airport Architecture " , Second Edition, Taylor & Francis, E & FN .Spon, London



Rush, Richard, 1986, "the building systems integration handbook", John Wiley and Sons, New York, USA

Sebestyen, Gyula, and Pollington, Chris, New Architecture and Technology, Architectural Press, UK

Wang, Shengwei, 2010, "Intelligent Buildings and Building Automation", Spon Press, London

" ( )"

<http://images.google.com/>.  
[www.SOM.com](http://www.SOM.com).

Eizenman, Peter, 1984, "The Futility of object", London, the institution of civil Engineers

Fordham, 1995, "Servicing the spaces ", The Architectural Review, May 1995

Frampton, K, 1995, "Studies in Tectonic Culture": The Poetics of Construction in Nineteenth and Twentieth Century Architecture, MIT

Press, Cambridge

Gepford Stephanie, 2005, "

SUVARNABHUMI AIRPORT", Air Transportation World

Pearman, Hugh, 2004, "Airports: A Century of Architecture", Laurence King Publishing

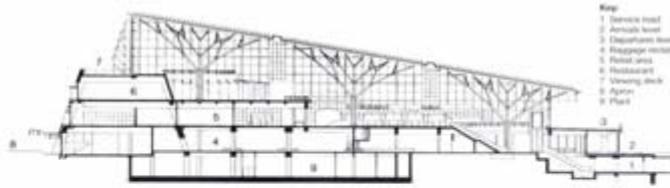
Robbin, Tony , 1996, "Engineering a New Architecture", Yale University Press



الشكل (١) مبنى مطار بانكوك الثاني/تاييلند،

المبنى مغطى بشكل "capsule"

(Gepford,2004,p14)

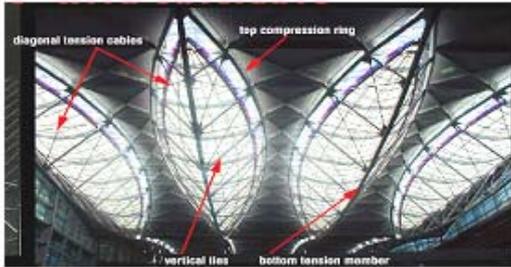


الشكل (٢) نظام الهيكل الإنشائي بشكل اشجار،مطار

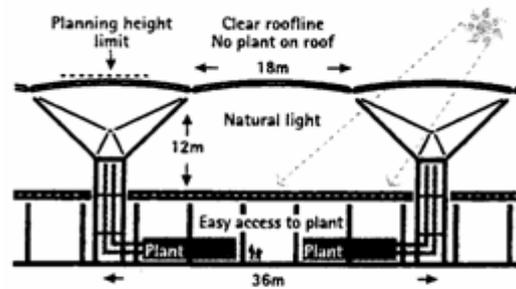
شتوتنكارت/المانيا(Edwards,2005,217)



الشكل (٣) نظم الخيام في مطاري ١) مطار الملك  
عبد العزيز، السعودية، ٢) مطار دنفر/الولايات  
المتحدة [www.google.com](http://www.google.com)



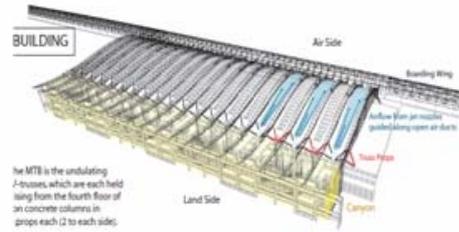
الشكل (٤) مبنى مطار سان فرانسيسكو، الولايات المتحدة، استخدام ٥ وحدات من نظام المسننات  
الفضائية [www.SOM.com](http://www.SOM.com)



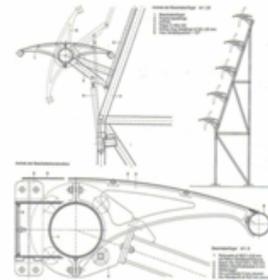
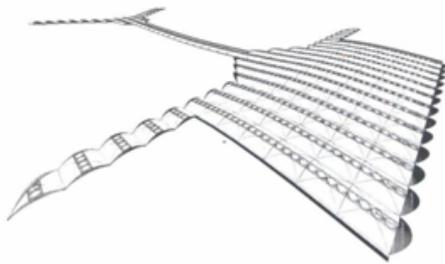
الشكل (٥) تداخل الاضاءة الطبيعية والصناعية مطار  
ستاسبيد لندن (Edwards,2005,p117)



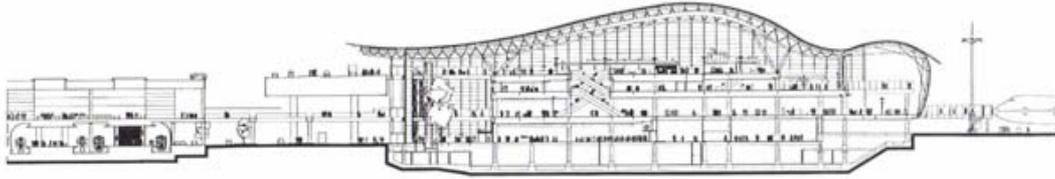
الشكل (6) اعتماد الاثارة السقفية في الجزء الوسطي  
canyon لمطار كنساي، واعتماد الاثارة الصناعية مع  
الطبيعية في جانب الطيران boarding wing  
(Bunchanan,1994,p77).



الشكل (7) تداخل نكات التهوية مع نظام التسقيف، يدفع الهواء بواسطة فوهات توجه حركة الهواء الى نكت  
هوائي مفتوح على طول جناح المغادرة (Bunchanan,1994,p76)



الشكل (8) الاجزاء المفصلية لنظام التظليل في مطار شتوتنكارت، المانيا ، السقف العائم لمطار هونغ  
كونغ/الصين. (التعبير التكنولوجي على مستوى الجزء والكل) (Edwards,2005,p268)



الشكل (9) مقطع مبنى مطار كنساي، اشبه بعمود فقري لاضلاع الديناصور، الفضاء الداخلي اشبه بفقرات متوازية (استعارة مجازية للتقنية العضوية) (Edwards,2005,p170)

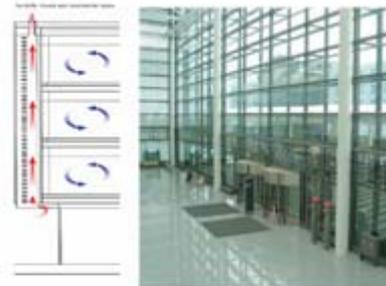


الشكل (10) استخدم الزجاج المحمي ولحبة مطار كنساي (Aviation Symposium,2009,p10)



الشكل (١٢) المناور الحدائقية مطار كوالالمبور، ماليزيا

[www.google.images](http://www.google.images)



الشكل (11) تقنية الزجاج المضاعف مطار ميونخ (Aviation Symposium,2009,p10)



الشكل (13) مفصل التمدد مطار كنساي (Buchanan,1997,p9)



الشكل (١٤) الشكل الانسيابي في التصميم الخارجي لمركز النقل (Edwards,2005,p257)



الشكل (١٥) التصميم الحدائقي (الحدائق الكورية) ضمن التصميم الداخلي لمركز النقل لتحسين البيئة الداخلية  
[www.google images](http://www.google.com/images)