

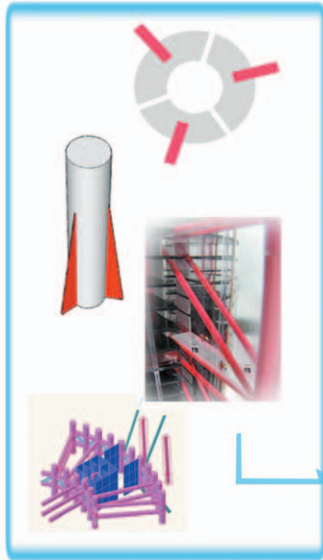
In the SKY Project

나성준 서정호 서정기

Concept & Structural Plan

Buttress

횡력에 대한 휨강성 보완
트러스 사용으로 투명한 공간 형성

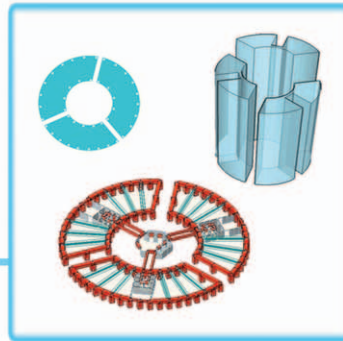


Outrigger



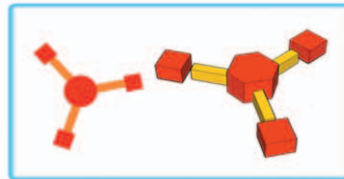
Hollow + Tube in tube

원통형보다 큰 휨강성 확보
횡력에 대한 취약한 축의 안정성 방지



Core

- 세개의 분산된 코어를 중심코어로 밀착화
횡력에 대한 효과적인 저항력 확보

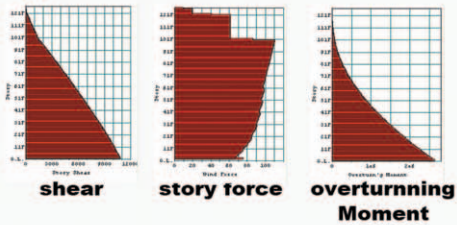


Instruction

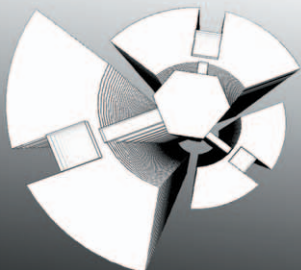
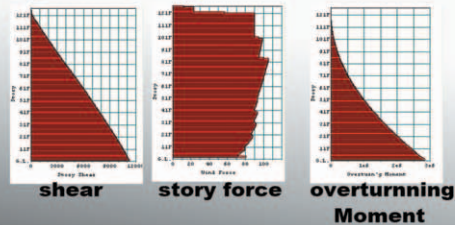
현장 위치 서울시 서초구 서초동 1320-3 외 30필지
 기준층 면적 3139.093 m²
 규모 125층 (A동 125층, B동 100층, C동 125층)
 계획 층고 기준 층고 4m
 높이 505m 세장비 = 5.272
 구조 시스템 Tube in tube+ RC core shear wall
 + Outrigger Belt truss + Mega System

Wind Loading

Wx



Wy



Load factor

- 설계하중
- 풍하중

100년 재현주기의 설계풍속 적용
 지역 : 서울특별시 서초구 서초동
 설계풍속 : 30m/sec
 노풍도 : A
 중요도계수 : 1.0

- 지진하중

예상되는 지진규모 6
 (50년간 10%의 발생확률)
 지역계수 : 0.11
 지반계수 : 1.2
 중요도계수 : 1.2 반응수정계수 : 3.0



Buttress에 의한 휨력의 저항효과

SCALE FACTOR: 1.00000001

ST: 풍하중

MODE: 1

FILE: 상수모형

DATE: 09/14/2007

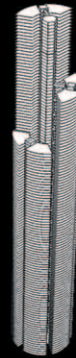
VIEW-DIRECTION: X: 0.000, Y: 0.000, Z: 0.000

Alt 1

Structural sys.
 Tube in tube + RC Core wall

Wind Load - displacement

$W_x = 1.3m$ (1/388.46) NG.
 $W_y = 1.5m$ (1/336.67) NG.
 eigen value period
10.2 sec (stiffness) NG.



SCALE FACTOR: 0.99999991

ST: 풍하중

MODE: 1

FILE: 상수모형

DATE: 09/14/2007

VIEW-DIRECTION: X: 0.000, Y: 0.000, Z: 0.000

Alt 2

Structural sys.
 Tube in tube + RC Core wall
 + pin wall

Wind Load - displacement

$W_x = 1.2m$ (1/420.8) OK.
 $W_y = 1.43m$ (1/353.15) NG.
 eigen value period
11.7 sec (stiffness) OK.



SCALE FACTOR: 0.99999991

ST: 풍하중

MODE: 1

FILE: 상수모형

DATE: 09/14/2007

VIEW-DIRECTION: X: 0.000, Y: 0.000, Z: 0.000

Alt 3

Structural sys.
 Tube in tube + RC Core wall
 + Mega system

Wind Load - displacement

$W_x = 0.9m$ (1/561.1) OK.
 $W_y = 1.1m$ (1/459.09) OK.
 eigen value period
11.3sec OK.

NATURAL PERIOD: 0.9684001

Mode 1

MODE: 1

FILE: 상수모형

DATE: 09/14/2007

VIEW-DIRECTION: X: 0.000, Y: 0.000, Z: 0.000

NATURAL PERIOD: 1.0178001

Mode 2

MODE: 2

FILE: 상수모형

DATE: 09/14/2007

VIEW-DIRECTION: X: 0.000, Y: 0.000, Z: 0.000

NATURAL PERIOD: 0.7128400

Mode 3

MODE: 3

FILE: 상수모형

DATE: 09/14/2007

VIEW-DIRECTION: X: 0.000, Y: 0.000, Z: 0.000

