

AIAB Education Summit

BIM Education - Sustainability

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HKIA RAIA Registered Architect*

HKUSPACE

– Adjunct Lecturer

Community College

– Associate Professor

Chu Hai College of Higher Education

Faculty of Science and Engineering


Department of Architecture



珠海學院
CHU HAI COLLEGE
OF HIGHER EDUCATION

Courses	Building Technology II	Holistic Approach to Sustainability
Targeted student and year	Architectural Students Year 2-4 Bachelor of Architecture	Architectural Students Year 4-5 Bachelor of Architecture
Type of class	Elective	Elective
Credit	2 Credits	4 Credits
Duration	14 Classes x 1.5 hours (1 semester)	28 Classes x 1.5 hours (2 semesters)
Teaching Expectation	Application of BIM into Design works and understanding of how building comes together	Advanced application of BIM on Building Performance and associated
Course Since	2006	2012

ChuHai Course Outline

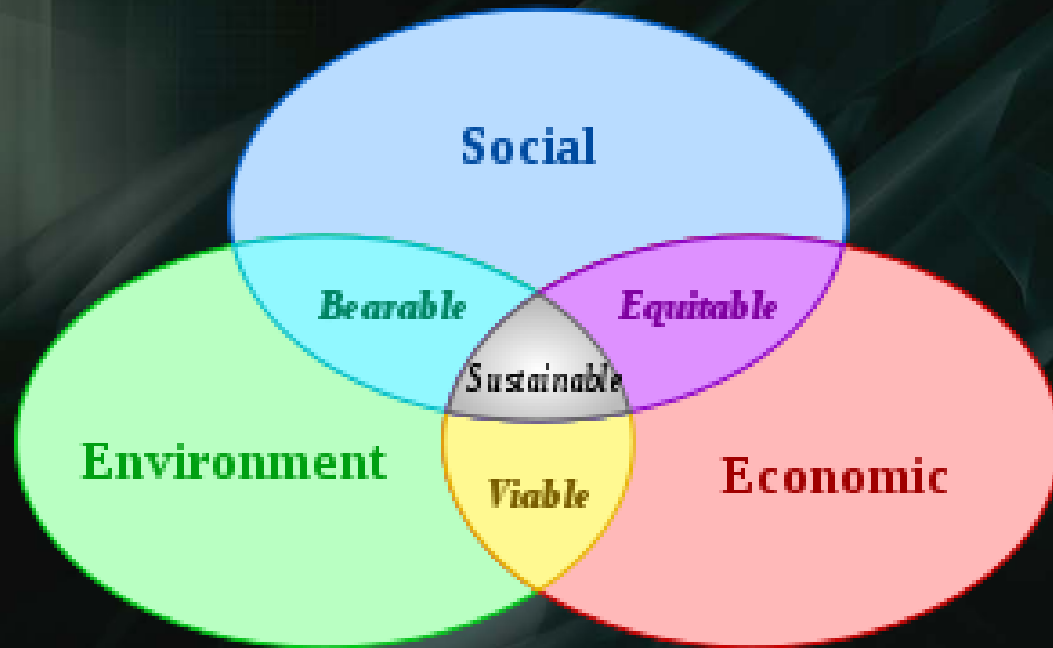
Building Technology	Holistic Approach to Sustainability
Introduction to BIM	Fundamental of Sustainability
Early Design Conceptual Design	Review of Development Control and Development potential
Revit Operations/ modelling	Project Vasari – Analytical approach
BIM in Construction of Wall/ Window/ Doors/ stair	Collaborations -Clash detection – reduce error and resources
BIM in Construction stair	Solar Control and Sun shading
Construction of Curtain Wall System	Wind control
Rendering and Material	Conceptual Design – building bulk
Revit Family Building	BIM and Sustainability
	HKBEAM / LEED
	Power and energy conservation - MEP
	Production of HKBEAM platinum project
	BIM in Pre-fabrication
	Green wall and Green roof
	 Autodesk Industry Advisory Board

BIM & SUSTAINABILITY

4 Modules:

1. Development Control and Development potential
2. Analytical approach
3. Collaborations
4. Production of HKBEAM platinum project

1. Development Control and Development potential



1. Development Control and Development potential

The building is not for residential use.

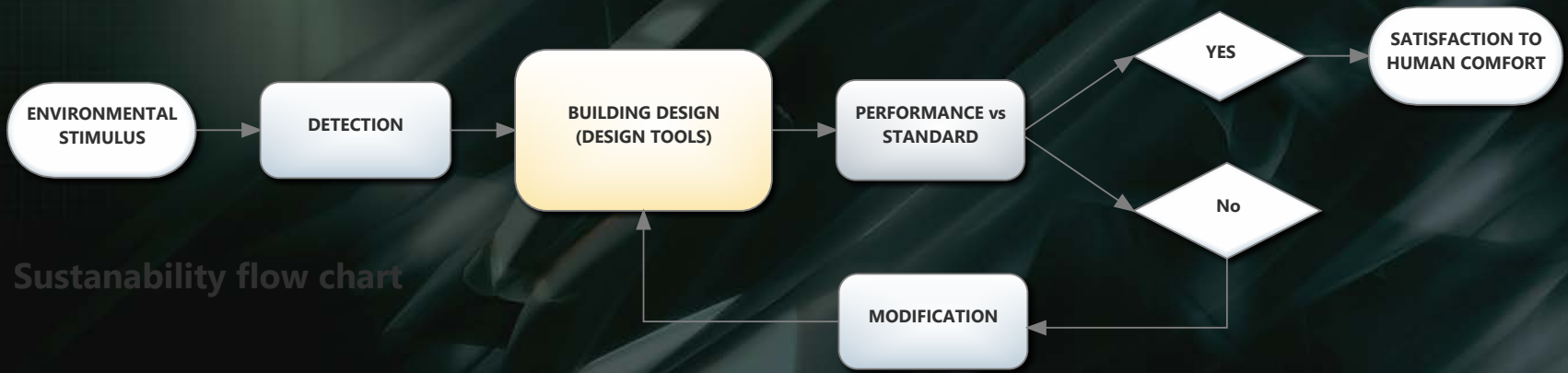


Required

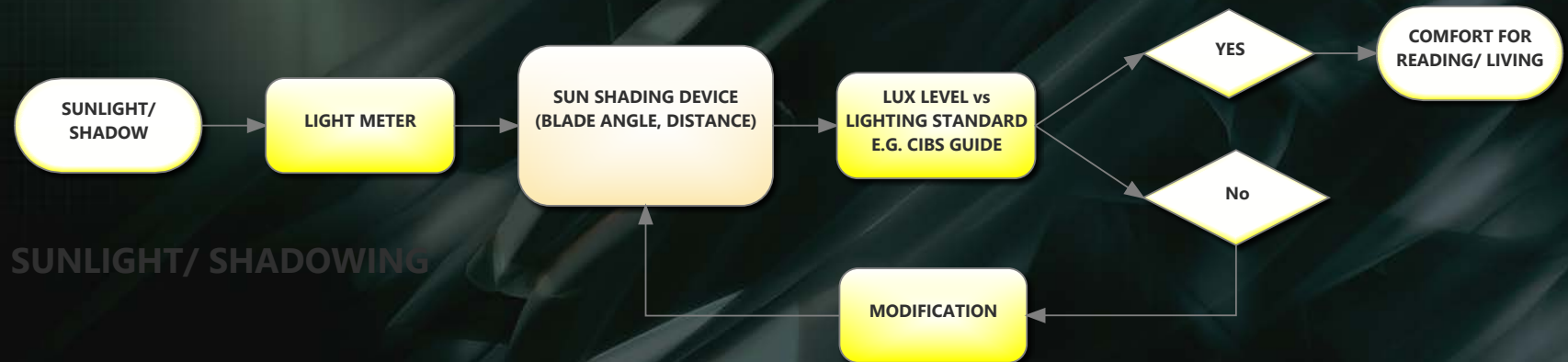
COMMERCIAL

Column 1 Uses always permitted	Column 2 Uses that may be permitted with or without conditions on application to the Town Planning Board
Ambulance Depot Commercial Bathhouse/ Massage Establishment Eating Place Educational Institution Exhibition or Convention Hall Government Use (not elsewhere specified) Hotel Information Technology and Telecommunications Industries Institutional Use (not elsewhere specified) Library Off-course Betting Centre Office Place of Entertainment Place of Recreation, Sports or Culture Private Club Public Clinic Public Convenience Public Transport Terminus or Station Public Utility Installation Public Vehicle Park (excluding container vehicle) Recyclable Collection Centre Religious Institution School Shop and Services Social Welfare Facility Training Centre Utility Installation for Private Project	Broadcasting, Television and/or Film Studio Flat Government Refuse Collection Point Hospital Mass Transit Railway Vent Shaft and/or Other Structure above Ground Level other than Entrances Petrol Filling Station Residential Institution

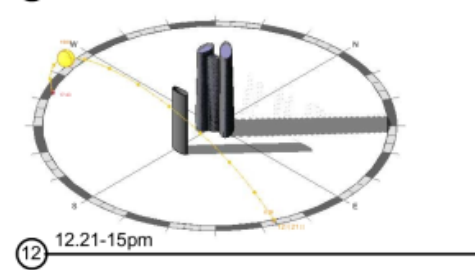
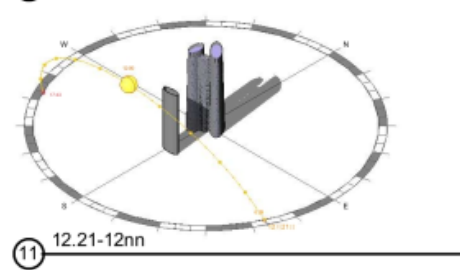
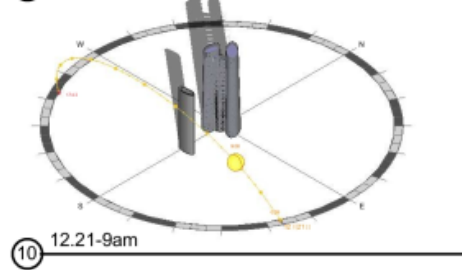
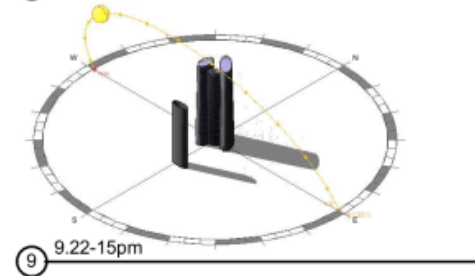
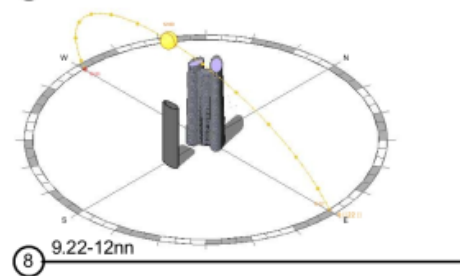
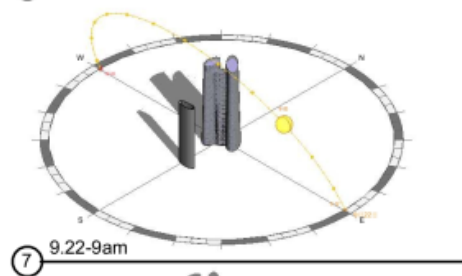
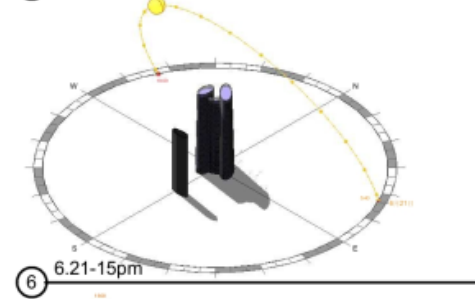
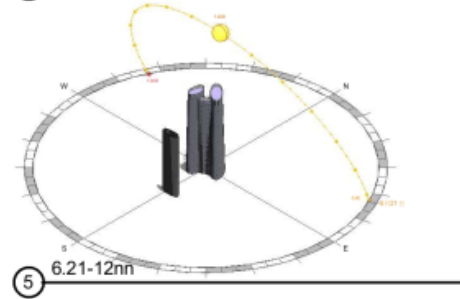
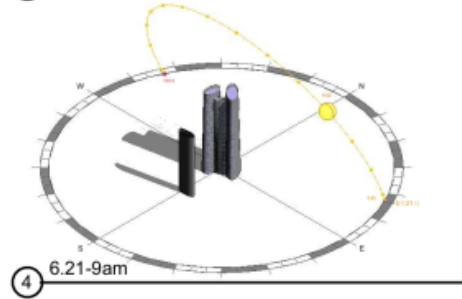
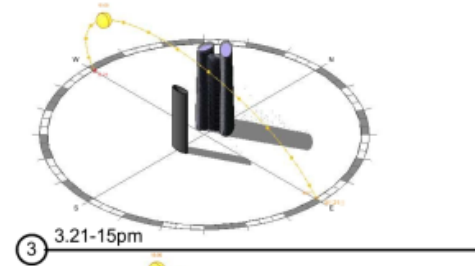
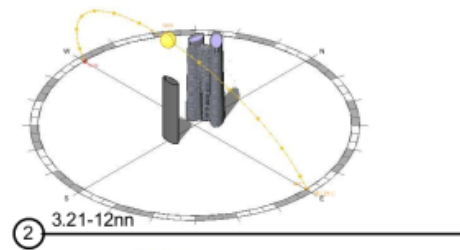
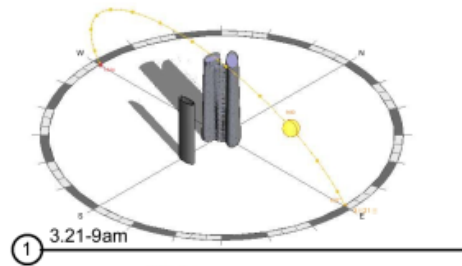
2. Analytical approach



2. Analytical approach

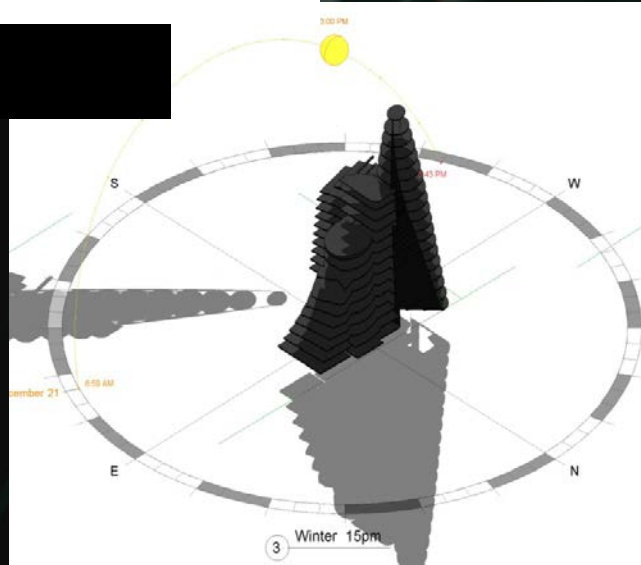
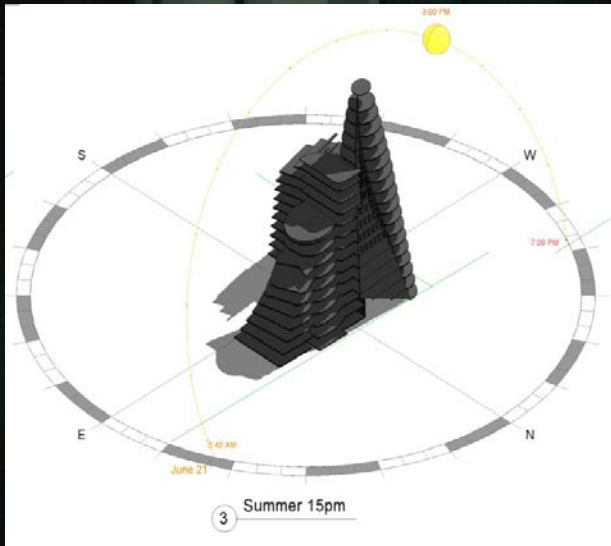


2. Analytical approach



The building needs most of the shadings on the southern façade, during the day time. Major concern about the summer sun at Jun 21, the sun is directly facing to the southern side of the building, and that façade need to be shaded and try limiting the sun light going into the building.

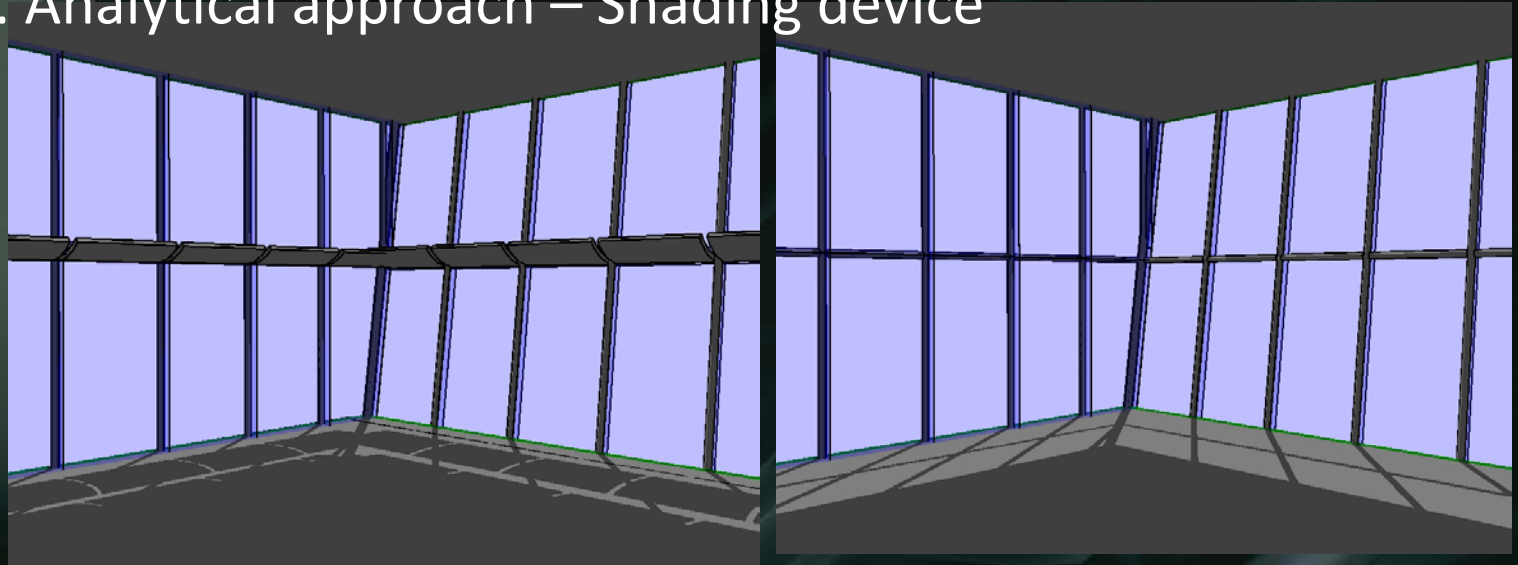
2. Analytical approach



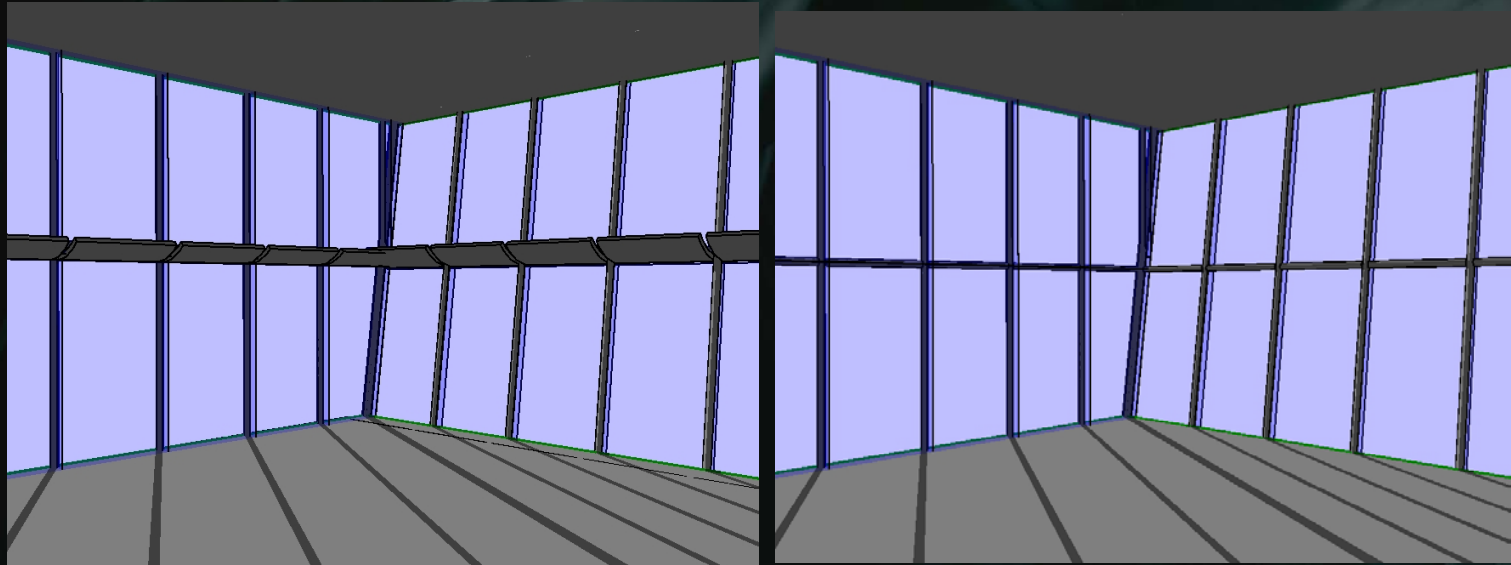
Natural Daylight –Windows for natural daylight to minimize artificial lights use

2. Analytical approach – Shading device

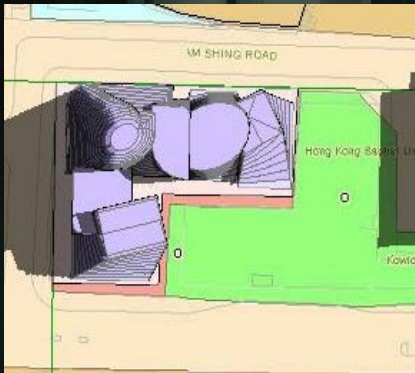
Summer



Winter



2. Analytical approach



Summer 10am

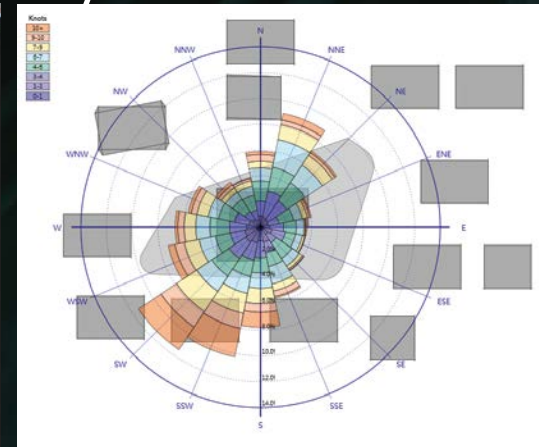
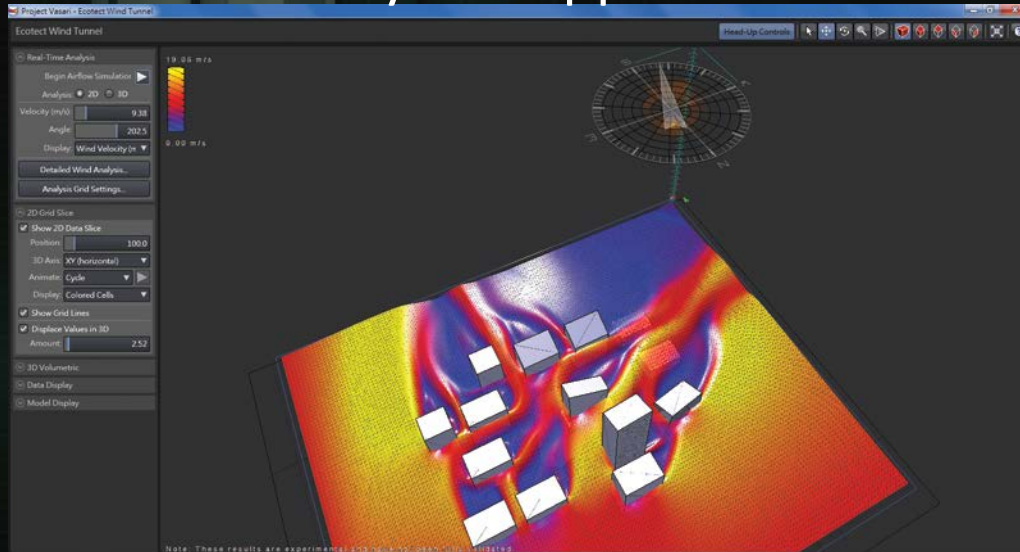


Summer 3pm

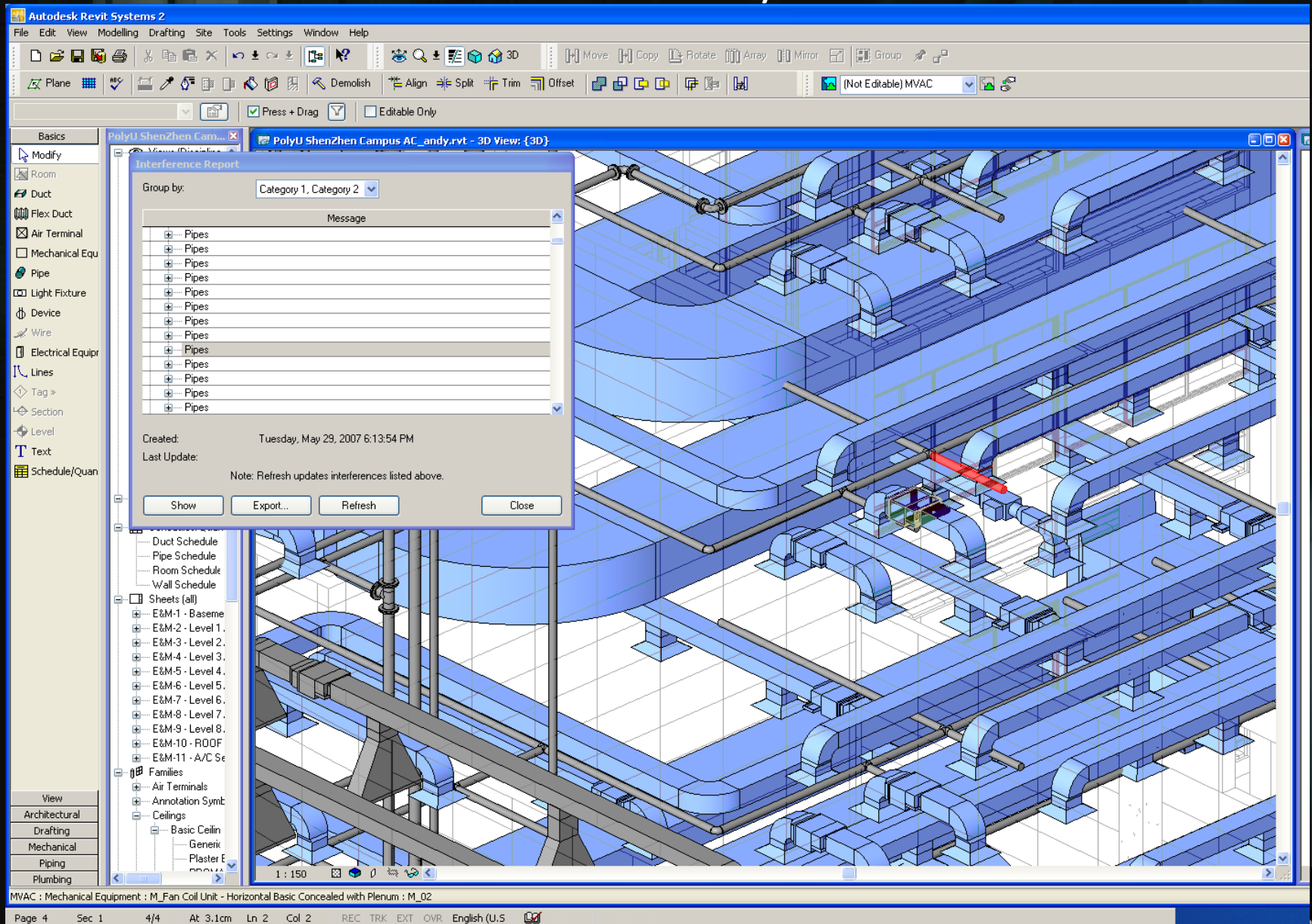


PV Panel

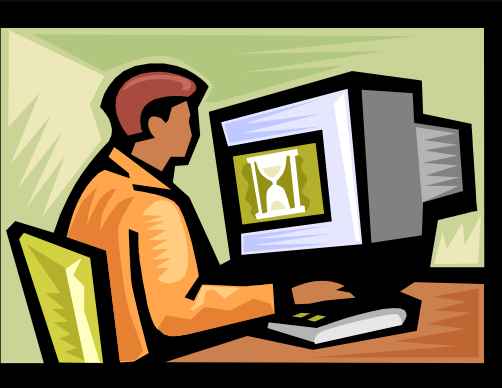
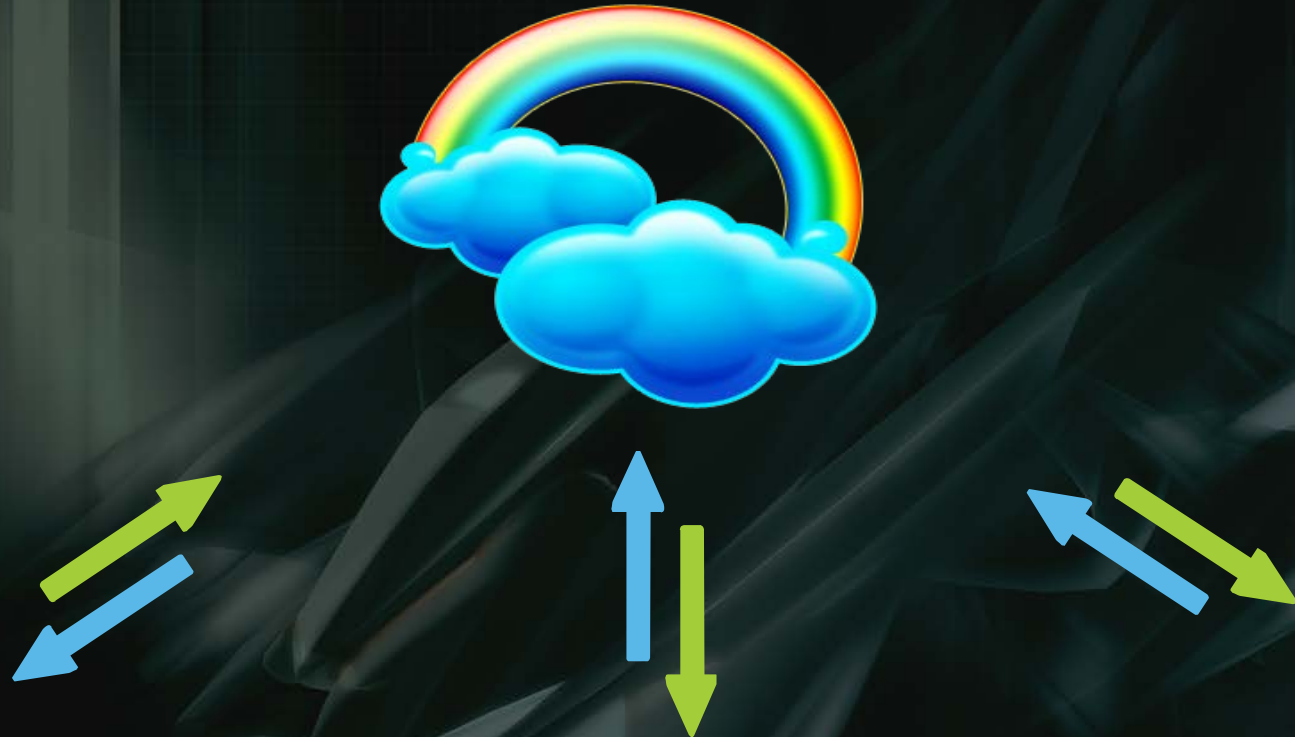
2. Analytical approach – Wind Analysis



3. Collaborations – Clash Analysis



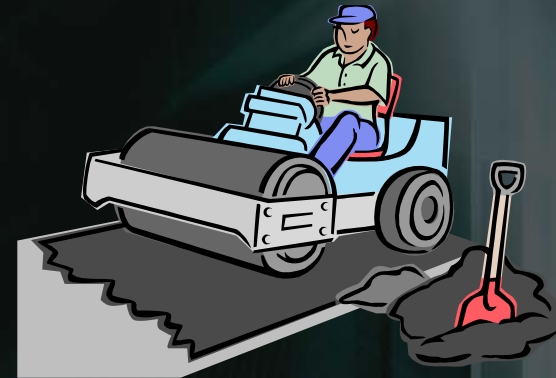
3. Collaborations – Cloud Based



OFFICE



COLLABORATION





SITE **A I A B**
Autodesk Industry Advisory Board

3. Collaborations – Cloud Based


Autodesk Design Review

Local Storage


 Sample Document >

 Recent Documents >

Autodesk Cloud

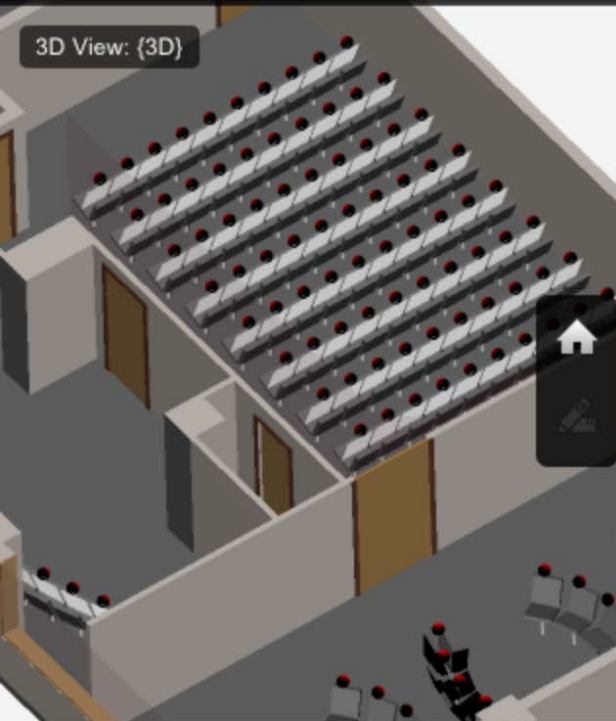
 Documents >


Help

 Using Design Re... >

Files 3D dwf without be...

3D View: {3D}



 Properties

Files 3D dwf without be...

Properties

Base Constraint
3/F

Base Offset
0


Room Bounding
Yes

Top Constraint
CEILING SOFFIT

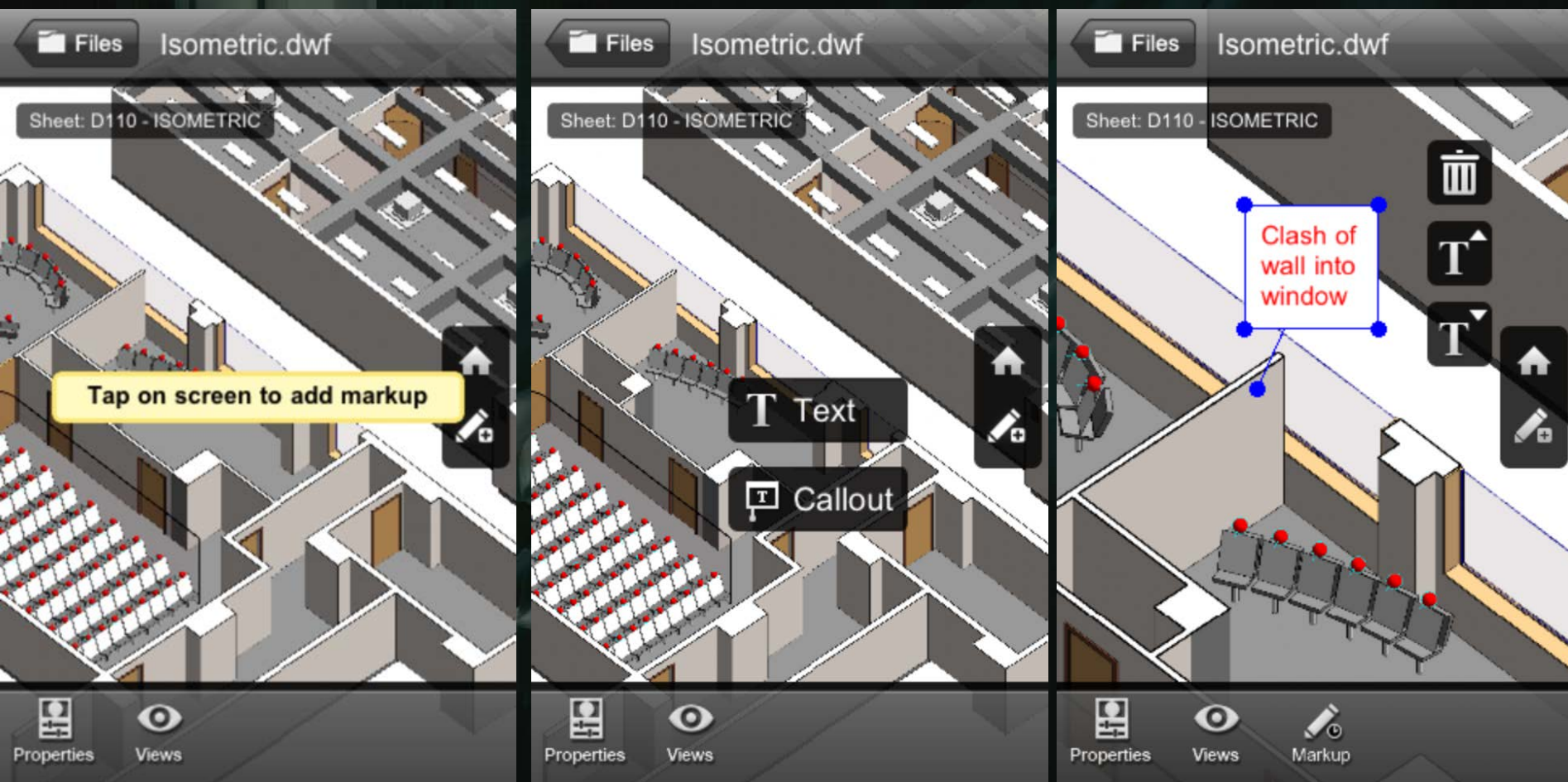
Top Offset
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Unconnected Height
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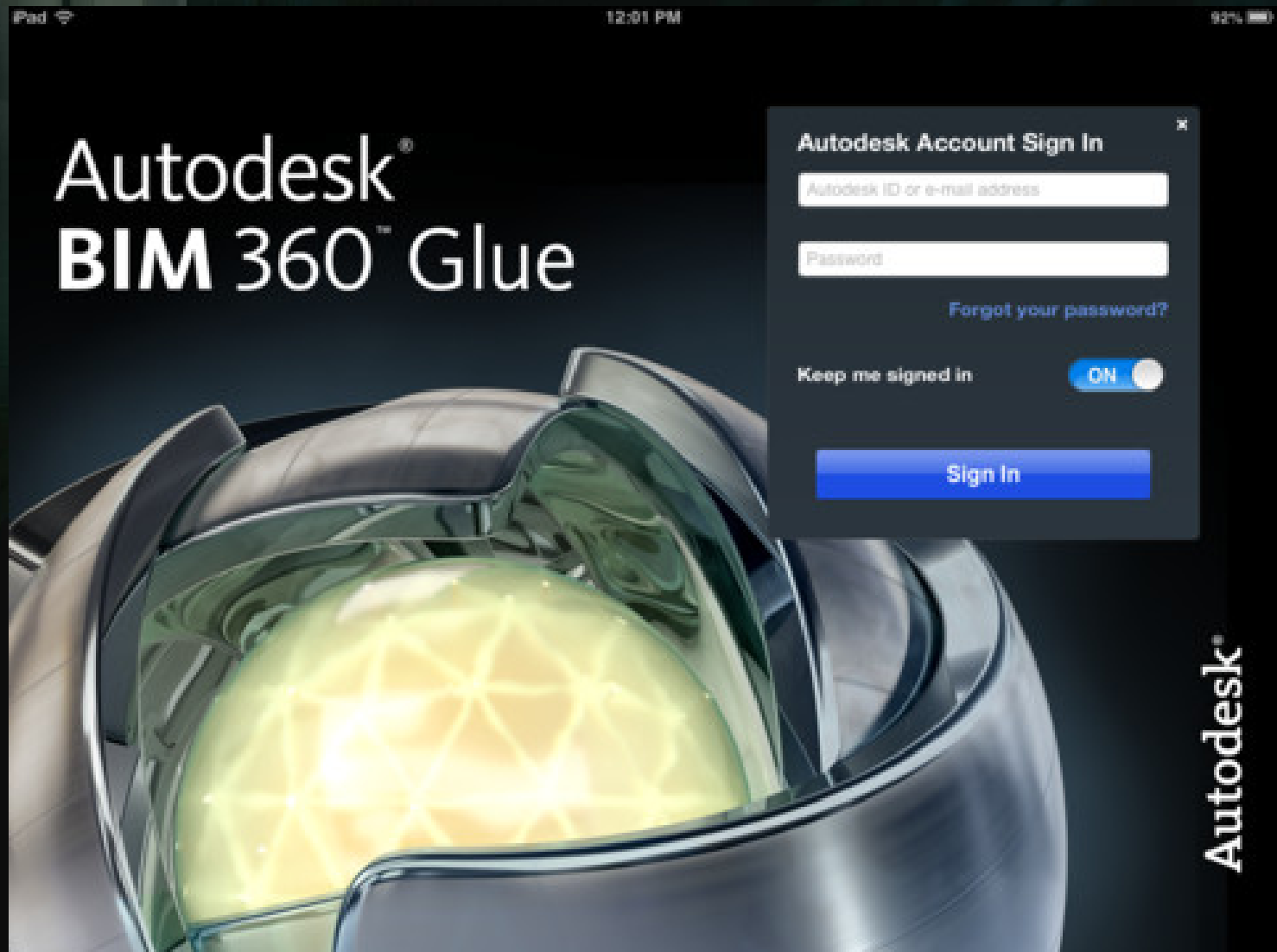
Construction

 Properties

3. Collaborations – Cloud Based



3. Collaborations – Cloud Based



Autodesk®

3. Collaborations

Autodesk® BIM 360 Glue

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Free

Category: [Productivity](#)
Released: Oct 08, 2012
Version: 1.0
Size: 59.4 MB
Language: English
Seller: Autodesk
© Autodesk Inc.
Rated 4+

Requirements: Compatible with iPad. Requires iOS 4.3 or later.

Customer Ratings

Current Version:
★★★★☆ 10 Ratings

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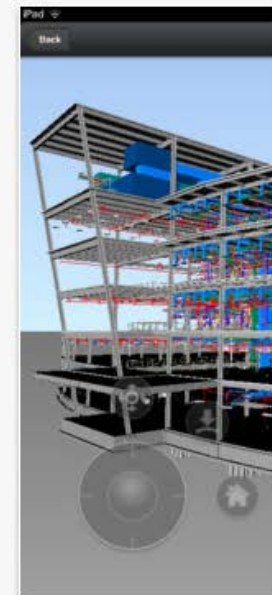
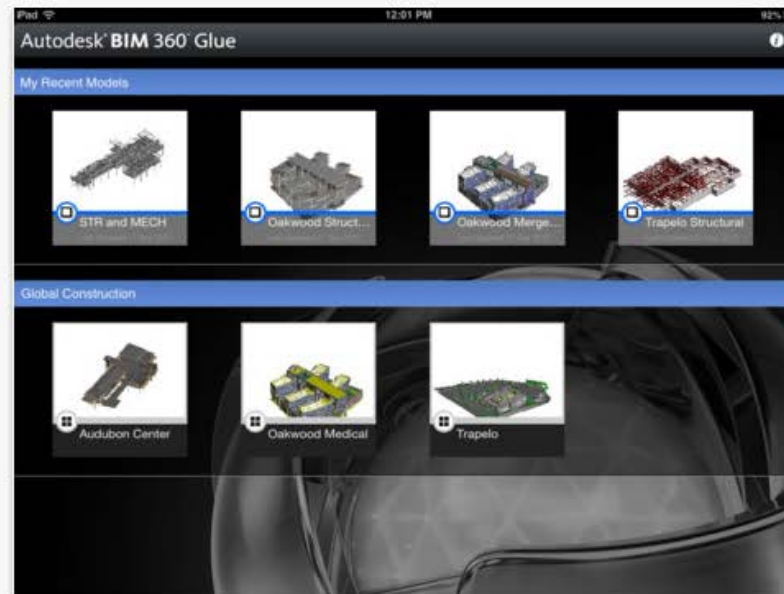
Description

The Autodesk® BIM 360™ Glue mobile app enables BIM 360 Glue users to more securely access Building Information Modeling (BIM) projects from anywhere, at any time. Building, infrastructure, design, and construction professionals can access and intuitively explore multi-disciplinary models online or offline, access all saved views, and review

[Autodesk® BIM 360 Glue Support](#) [Application License Agreement](#)

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iPad Screenshots



3. Collaborations

GLUE

OBJECTS

Models

Merged

+

Save

👁

View

↺

Refresh

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More

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Clear

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Merged Models

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Clash Reports

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bldg all for review

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ARC ALL

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HVAC ALL

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STR ALL

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Straighten

Walk

Plan View

Dynamic

Window

See All

Zoom

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Window

Isolate

Selection

Screenshot

Hide/Show

Transparent

Visual

Variations

Animations

Views

Selections

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Delete

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Standard Views

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Private Views

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Global Views

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Closed issues

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RFI clarifications

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RFI questions

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Text

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COLLABORATE

EXCHANGE

REVIEW

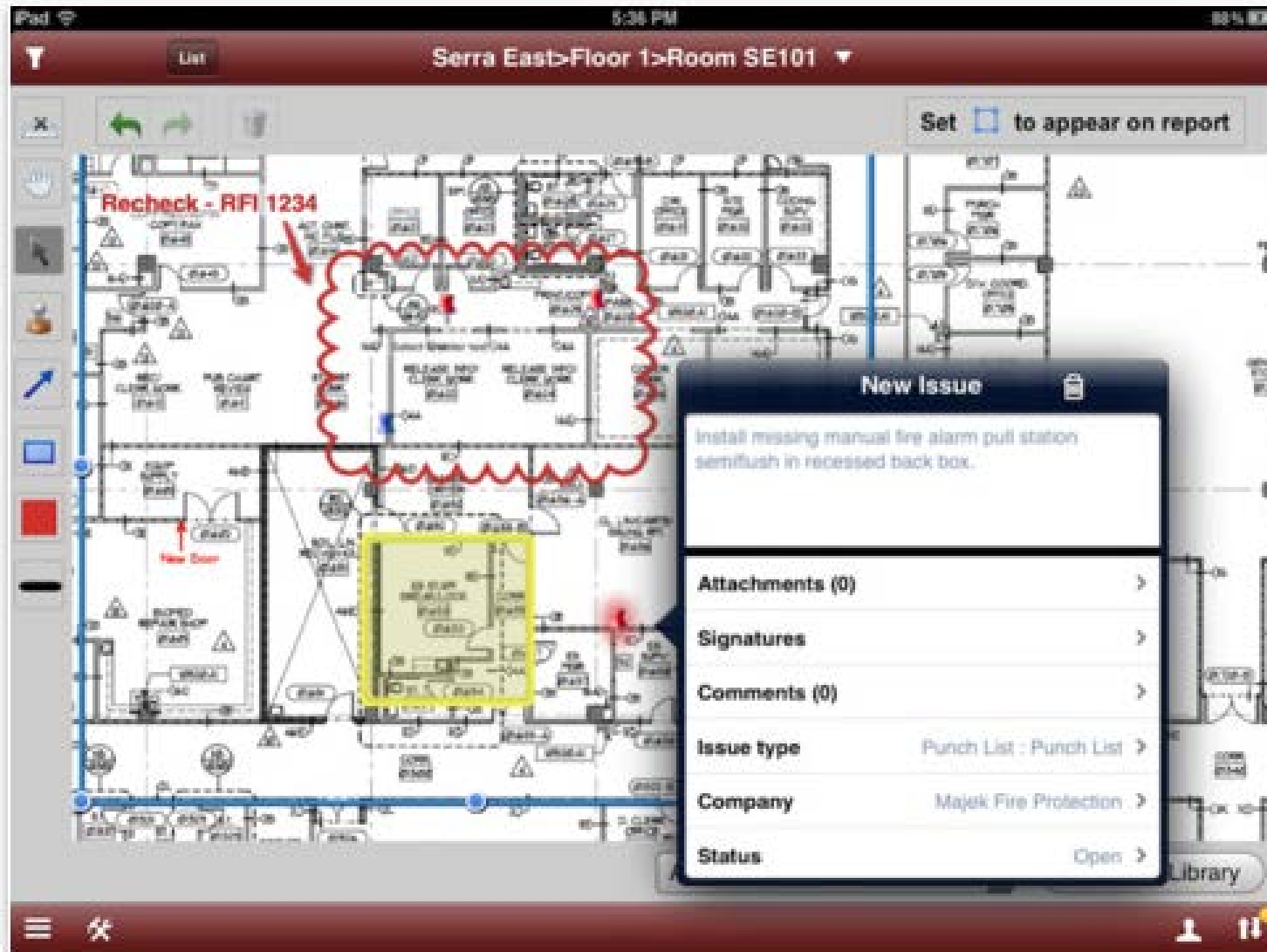
TRANSFORM

SECTION

SEARCH

3. Collaborations

iPad Screenshots



4. Production of HKBEAM platinum project

BEAM Plus

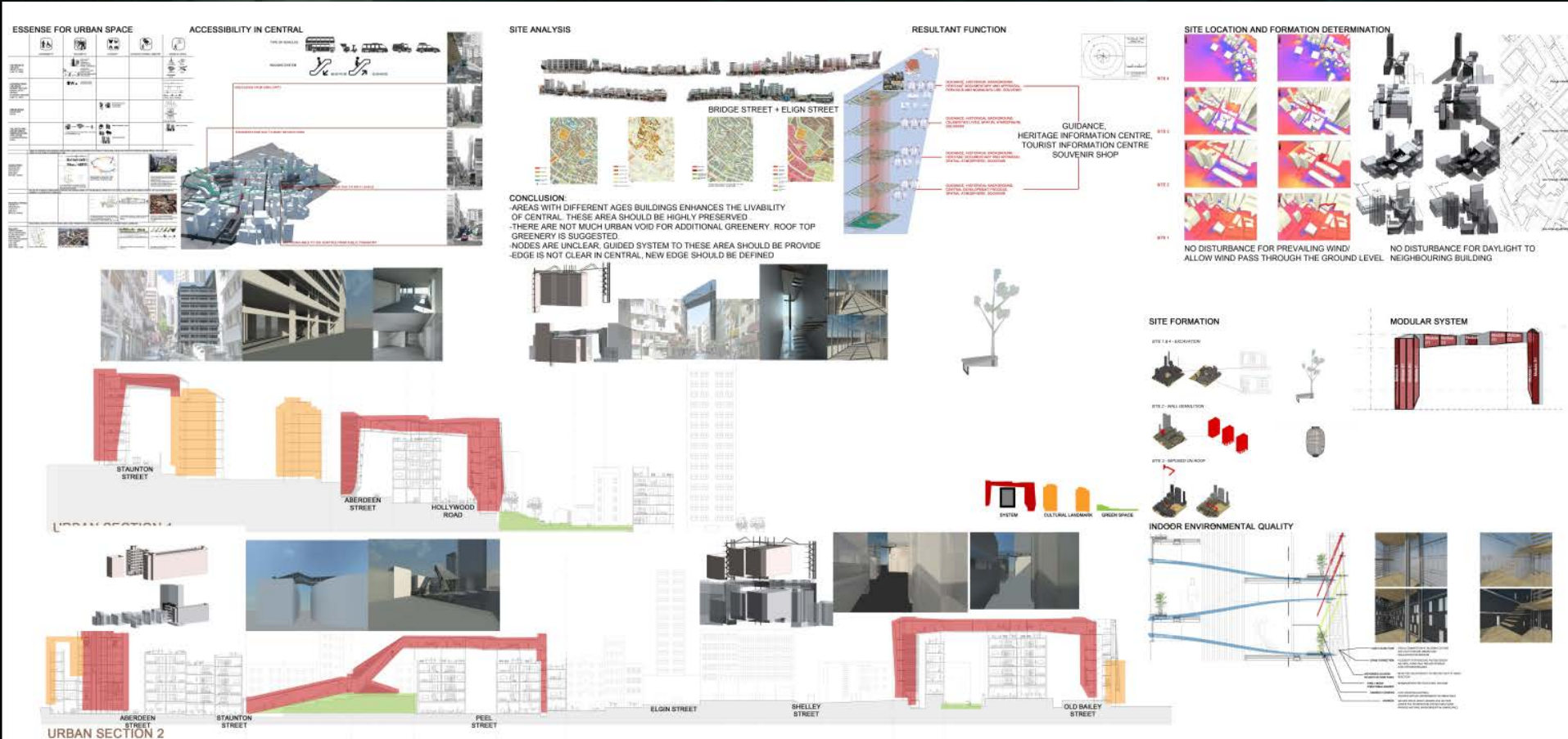
New Buildings

Version 1.1 (2010.04)

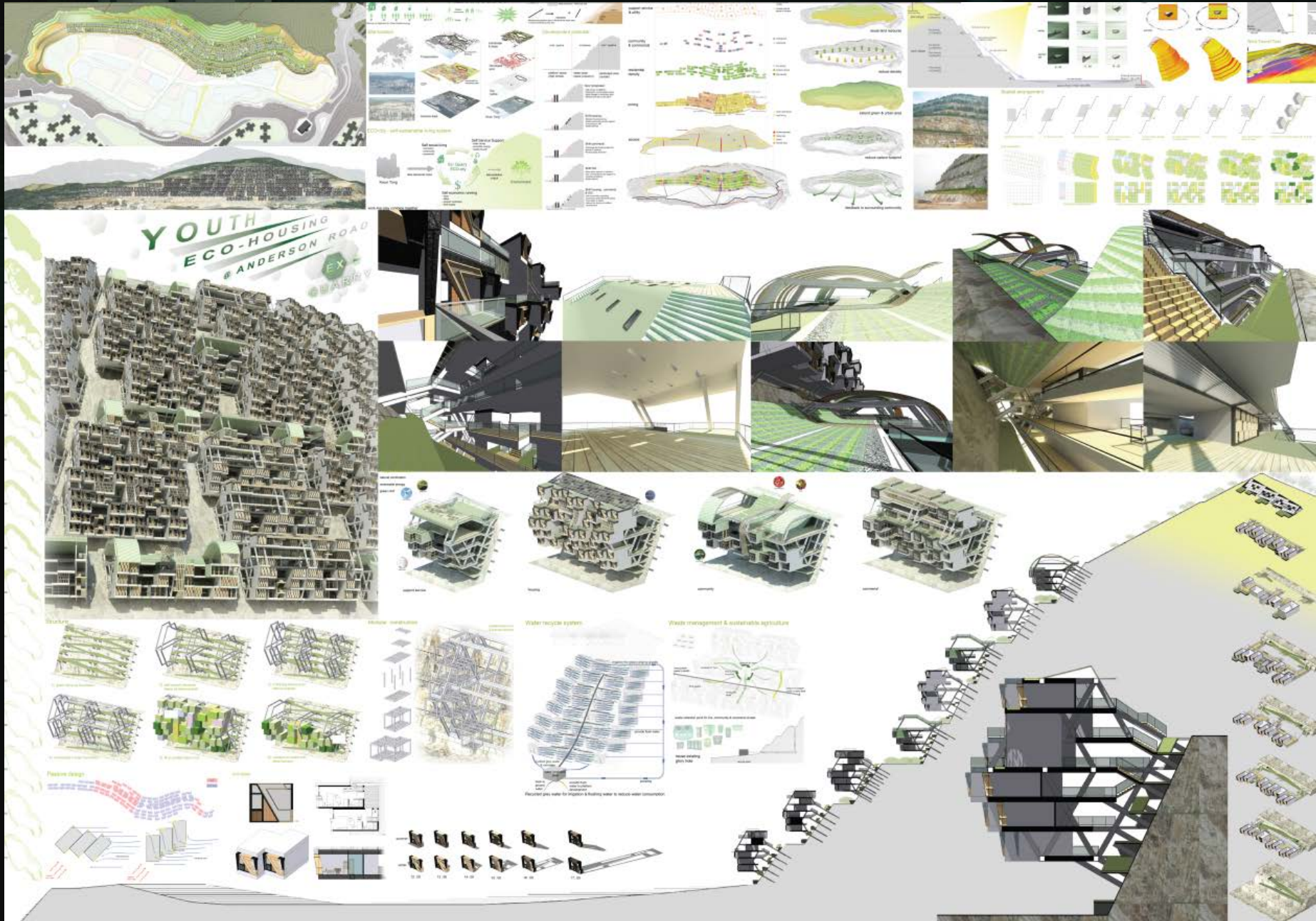


Building Environmental Assessment Method

4. Production of HKBEAM platinum project



4. Production of HKBEAM platinum project



1. Development Control and Development potential
2. Analytical approach
3. Collaborations
4. Production of HKBEAM platinum project