



Activity Centre for the Promotion of Chinese History
and Culture (CPC) in Kowloon Park

Integrating OpenBIM in the Museum Project at Kowloon Park: A Shift in Design, Collaboration, and Tender Preparation

Submitting Organizations:



ARCHPOLIS
Architecture | BIM management

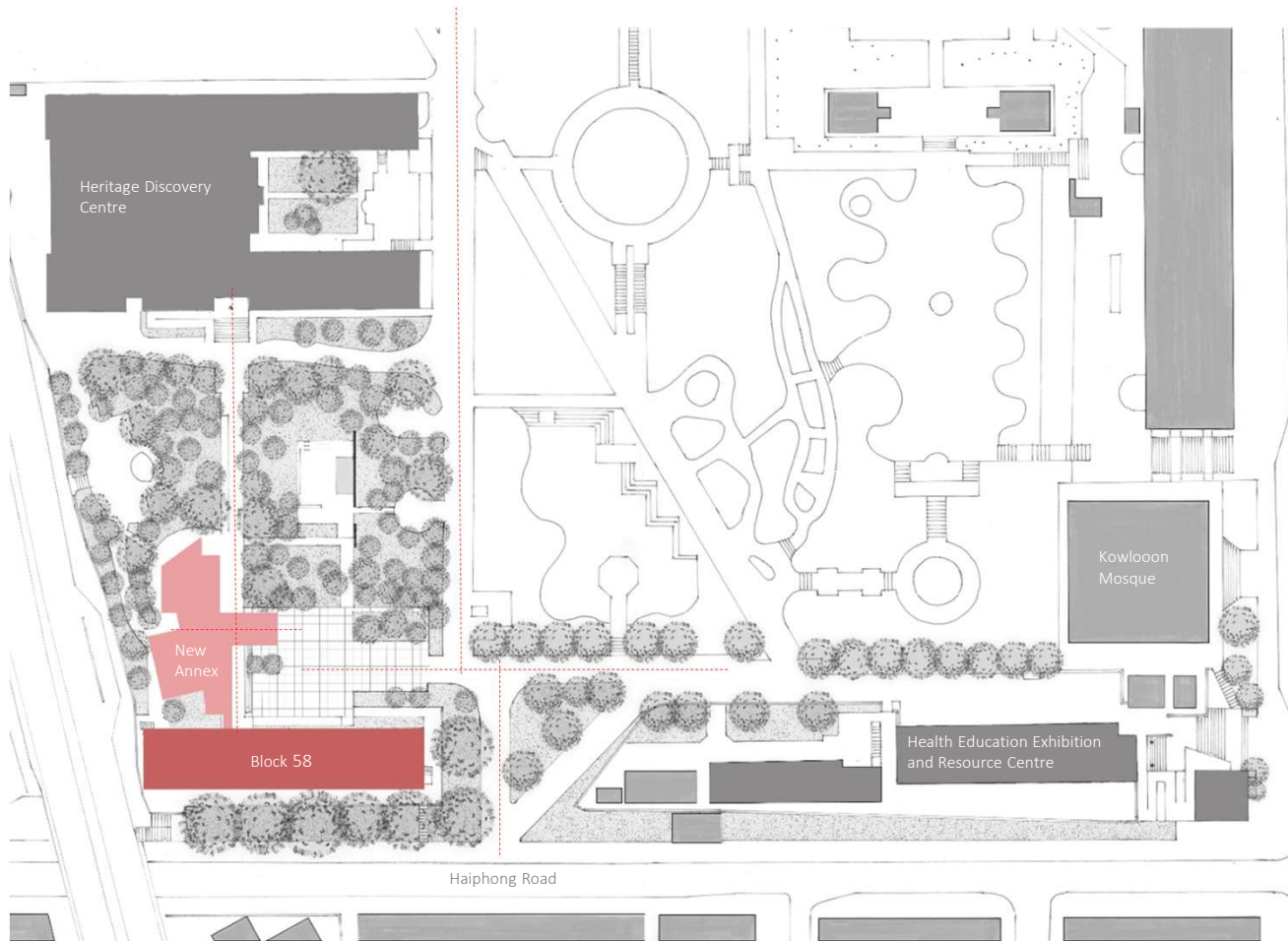


Supported by OpenBIM experts:



CivilConnect Limited
譽鋒顧問有限公司

Project Background



- Revamp the existing Block 58 in Kowloon Park into an Activity Centre
- A New Annex building to accommodate services for the Activity Centre.

Design Proposal



View of Block 58 from Haiphong Road park entrance.



View of Block 58 and New Annex from Plaza

Why Open BIM?

Pilot project of OpenBIM adoption in ArchSD

Why OpenBIM in a government project?

A. Software neutrality

- Fair competition
Diverse and competitive market. (ArchiCAD, Tekla vs Revit for archi, structure modelling)
- Innovation and Creativity
Encourages the development of new and unique applications that can enhance user experiences and meet specific needs.
- User Choice and Freedom
Application that best suit users' needs.
- Data independence
Users to maintain control over their data and freely move it between different software.

Why OpenBIM in a government project?

B. Interoperability

- Data independence
Users to maintain control over their data and freely move it between different software.
- Long-term data management
Remains accessible and usable from design, construction to facility management and maintenance.
- Data consistency and accuracy
Reduces the risk of data duplication, discrepancies.
- Flexibility and choice
Prevents vendor lock-in situation and promote the selection of suitable solutions.
- Collaboration and coordination
Exchange project information and data in a standardized and compatible format.

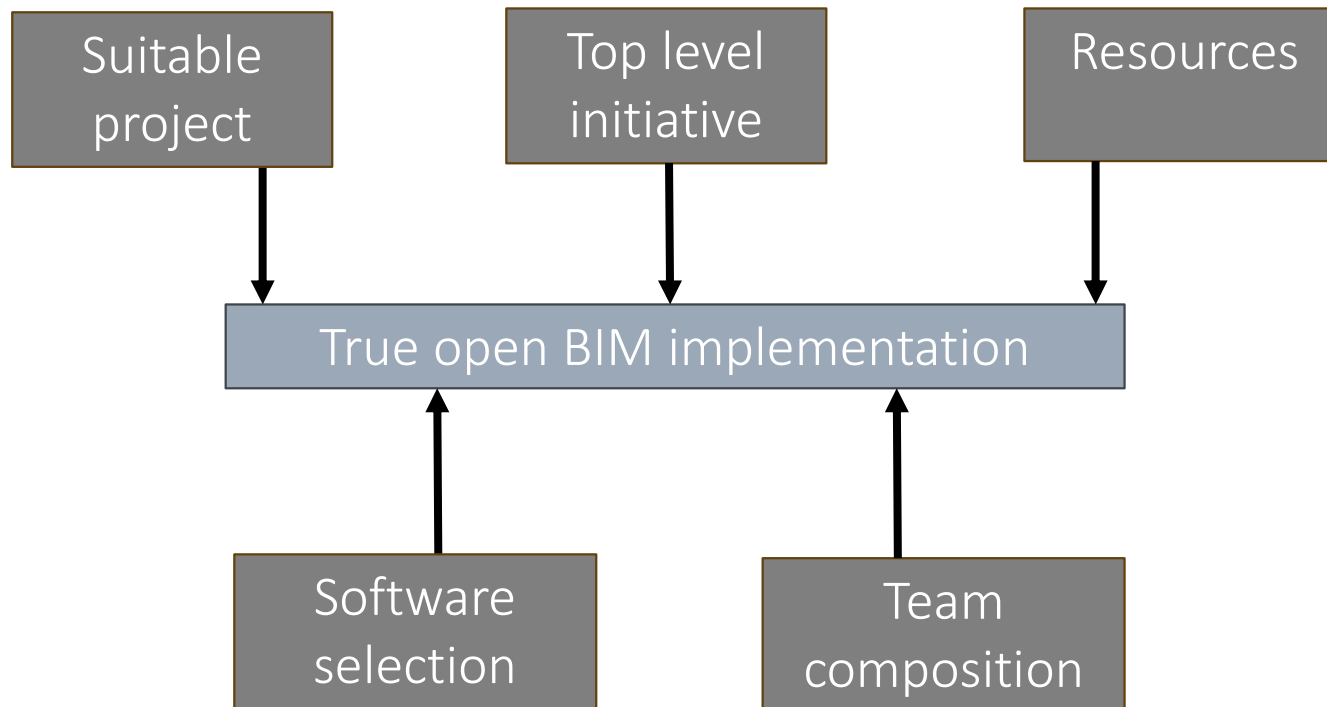
Why OpenBIM in a government project?

C. Establishing Workflows & Standards

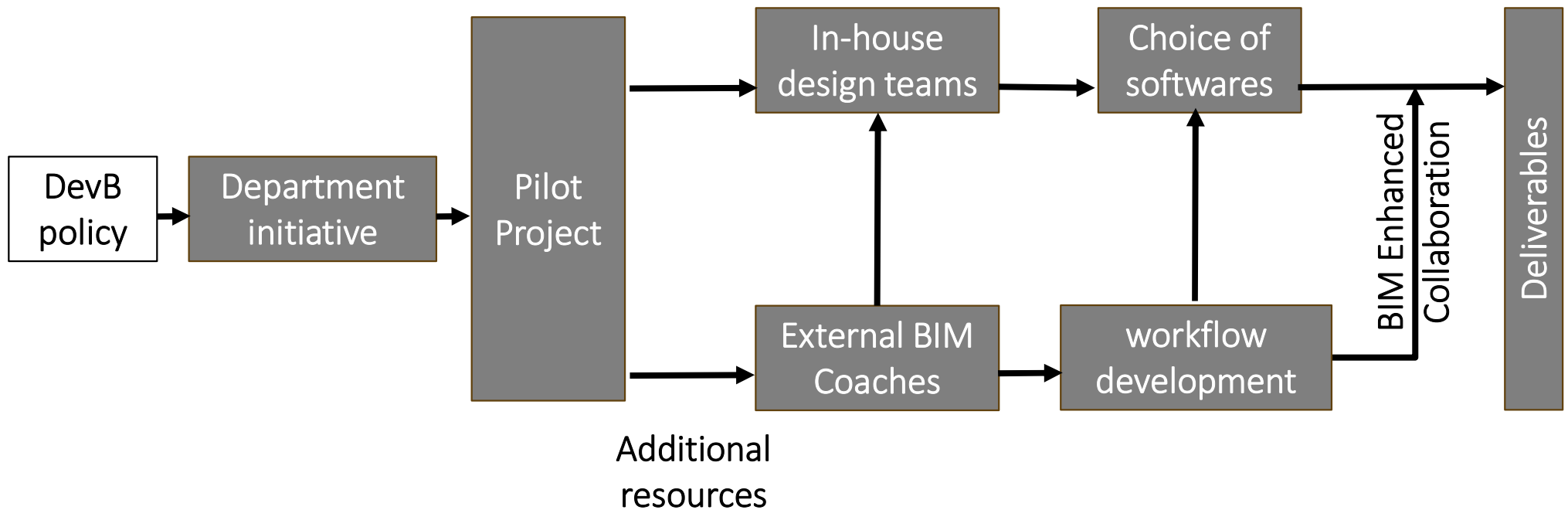
- OpenBIM workflow for multi-disciplinary collaboration
Define the data formats and protocols to ensure interoperability and seamless data exchange.
- Use of Common Data Environment (CDE)
Set up a centralized platform for storing and sharing project information.
- Model Auditing :
Create auditing checklists and templates that align with the project requirements. These checklists cover various aspects, such as geometry, data consistency, object properties, coordination, clash detection, compliance with regulations, and adherence to open data formats like IFC.

UNIQUENESS

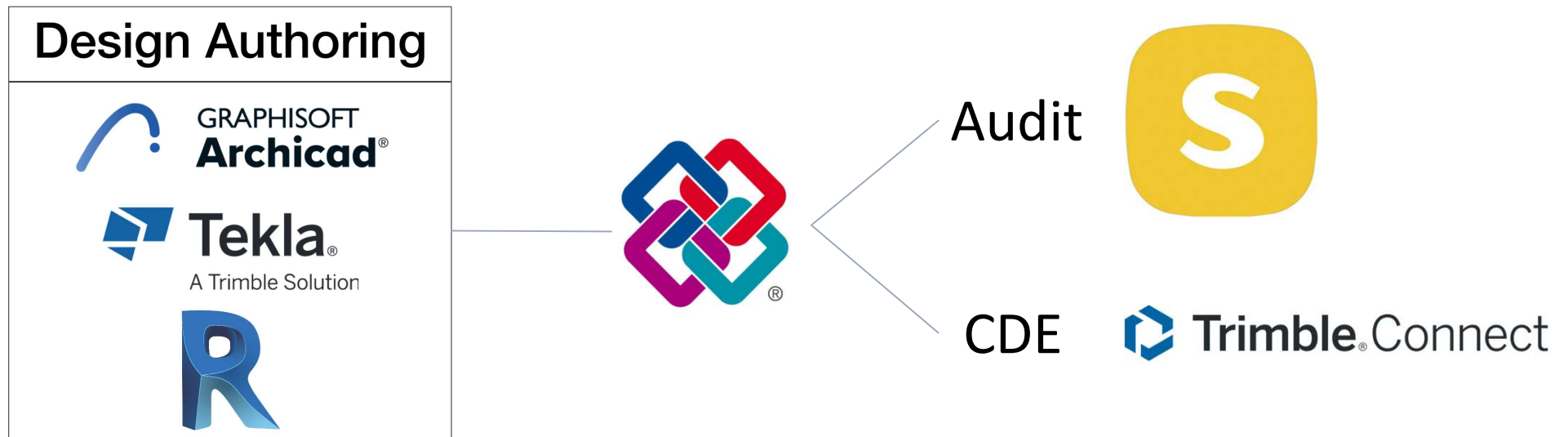
Uniqueness – True open BIM Implementation



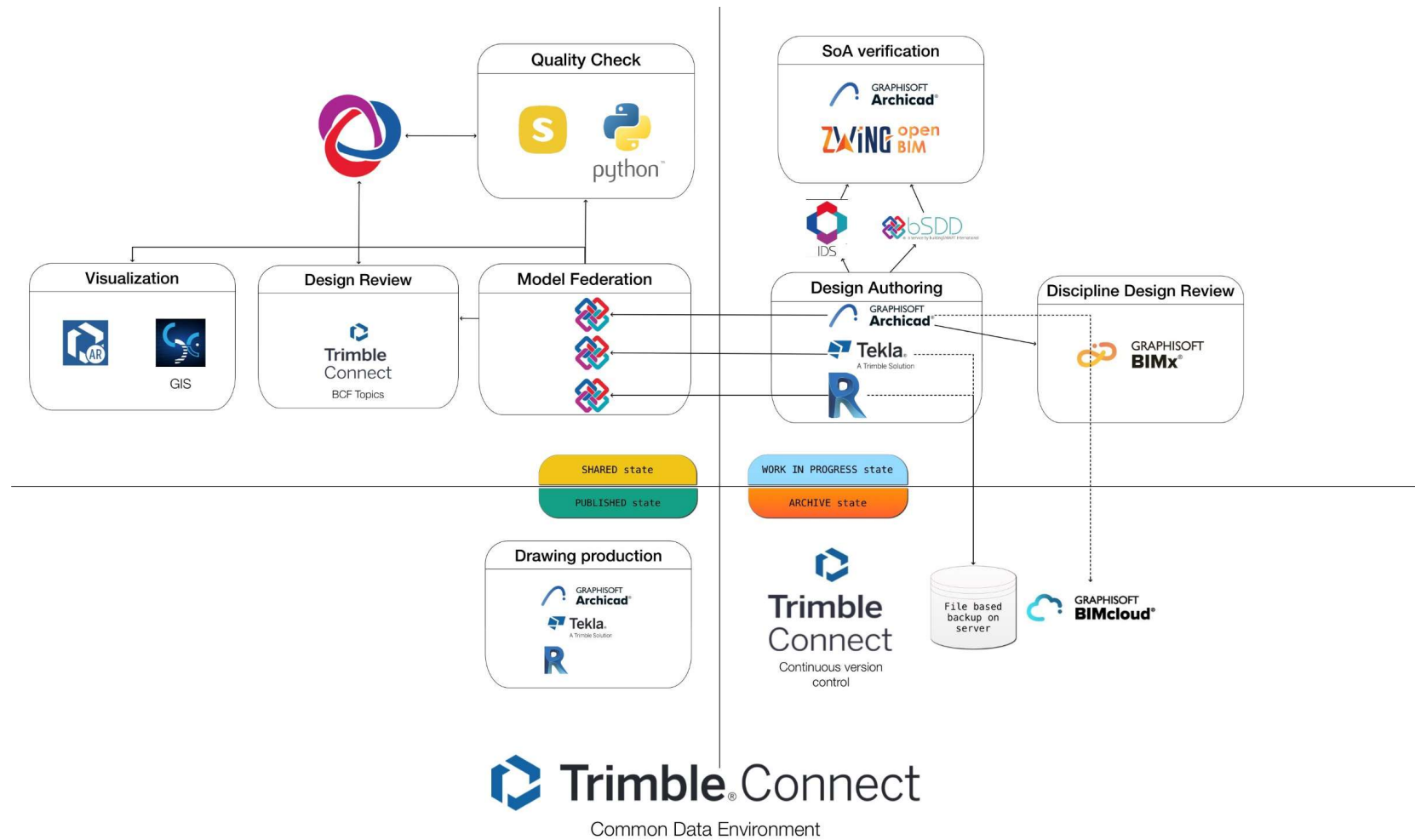
Uniqueness – Top Down Initiative Flow & Support



Uniqueness - Software Ecosystem



Process Map



Uniqueness – Same Team

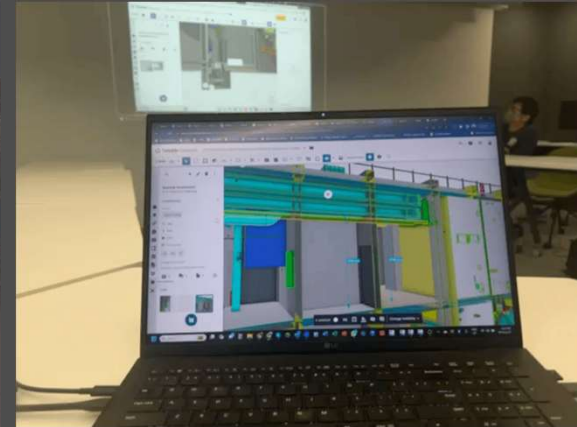
All design disciplines are in the same department:

1. Communicate the intention to use open BIM standards
2. Select software that supports open BIM
3. Provide training on open BIM practices to all team members

Uniqueness – Specialist coaching

Industry Specialists engaged for small group training

1. Archicad Specialist
2. Tekla Structure Specialist
3. Revit Specialist
4. BIM Auditing Specialist



Uniqueness – Perfect size pilot project

Relatively small project, for

- Testing new workflows and making adjustments iterations
- Adopting new softwares.



Uniqueness – Open BIM Workflow Proved

For promoting **Software Neutral**, ArchSD implements it via open BIM on in-house project.

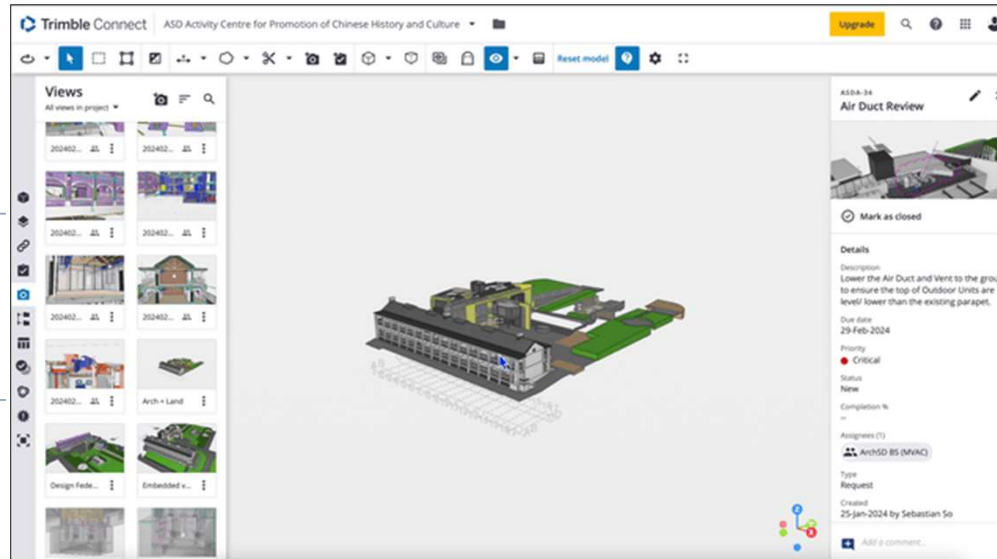
IMPACT

Impact – Department Culture

Design Review in Browser Federated model

Architects

Structural
Engineers



BS
Engineers

Project
Manager

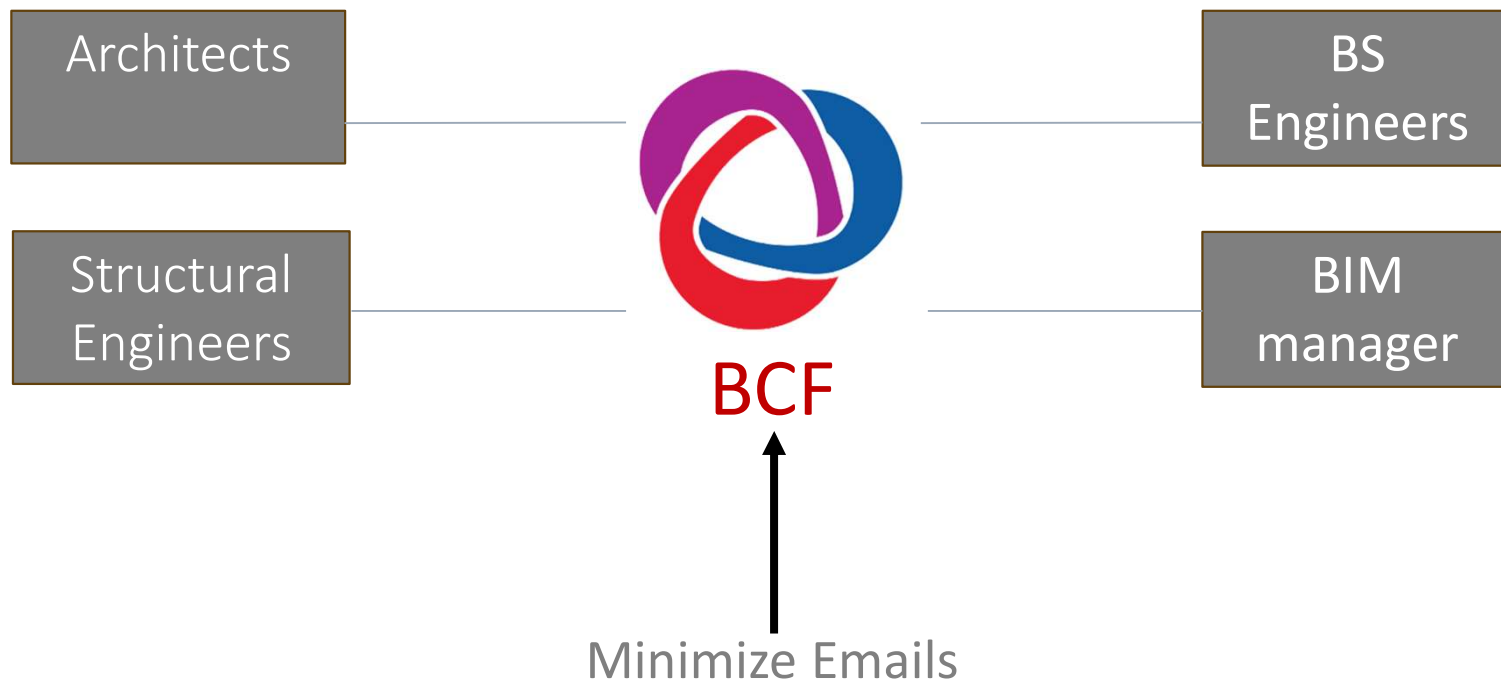
Real time, online, by user

Offline Viewers
(limited choice)



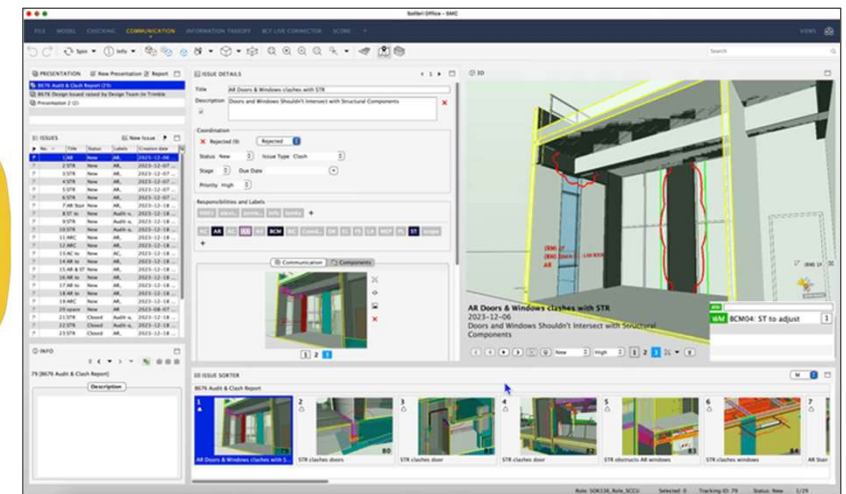
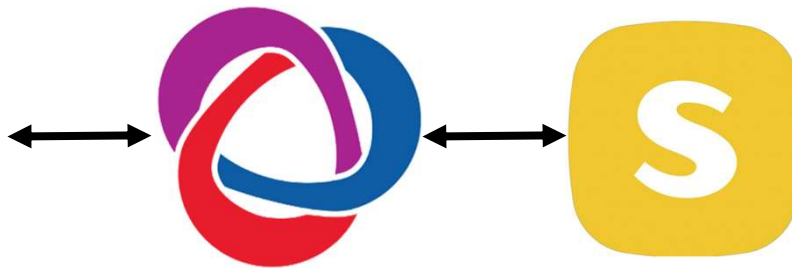
Impact – Department Culture

Coordination & Communications
Comment & Markup directly on the model



Impact – Department Culture

Best BIM checker
Bi-directional sync with CDE
via BCF



BIM manager

Impact – Message to tenderers

Whatever BIM softwares are proposed, ArchSD has knowledge and open to adopt via open BIM workflow.

THE GOVERNMENT OF THE HONG KONG SPECIAL ADMINISTRATIVE REGION
ARCHITECTURAL SERVICES DEPARTMENT
QUOTATION CONTRACT NO. CPM302_05/23

TECHNICAL ASSIGNMENT BRIEF
FOR
CONSULTANCY SERVICES
FOR
BUILDING INFORMATION MODELLING (WORKSTAGE 3 & 4)
FOR
Activity Centre for the Promotion of Chinese History and Culture
(PROGRAMME NO. 583ZX)

Architectural Services Department, Hong Kong
Date: March 2023

Impact – Message to Industry

Knowledge sharing with industry on Feasible Open BIM workflow.

LIMITATION

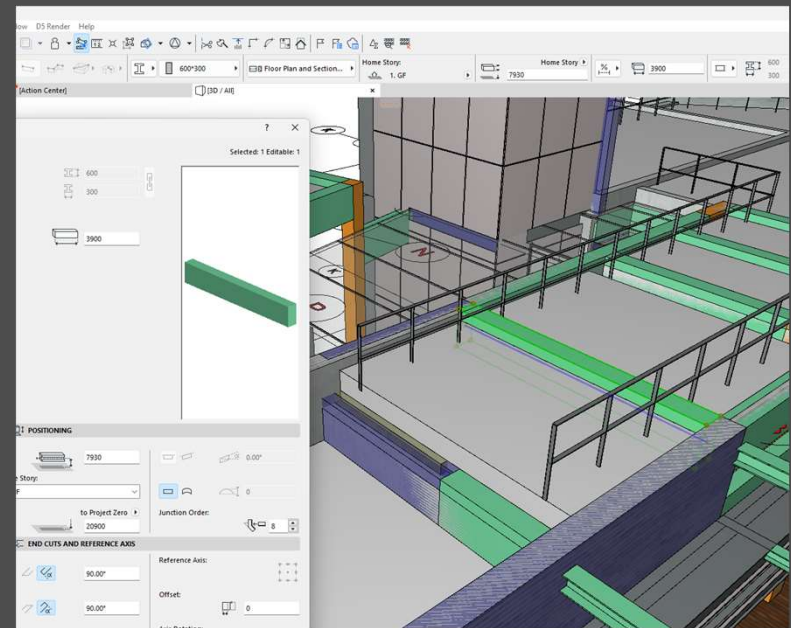
Limitation – IFC4 Design Transfer

IFC4 Design Transfer not fully transferrable:

- Separate structural models need to be manually created in Archicad architectural models (from drawing production).

Solution:

- Manually compared against structural models.
- Solibri to identify discrepancies automatically.

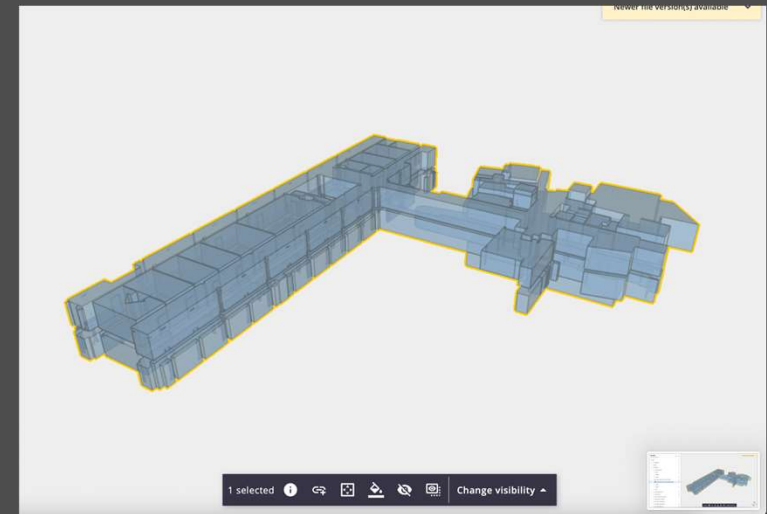


Limitation – IfcSpace to Revit

- IfcSpace cannot be converted into Revit's Room

Solution:

- IFC2x3 and special Revit plugin



Limitation – IFC for Drawing Production

- IFC not designed for drawing production.

Solution:

- BS drawings production, need DWG and PDF export for Architectural layout background

Limitation – Software Support

- Software support for IFC varies.
- Revit takes long time to export to IFC models.

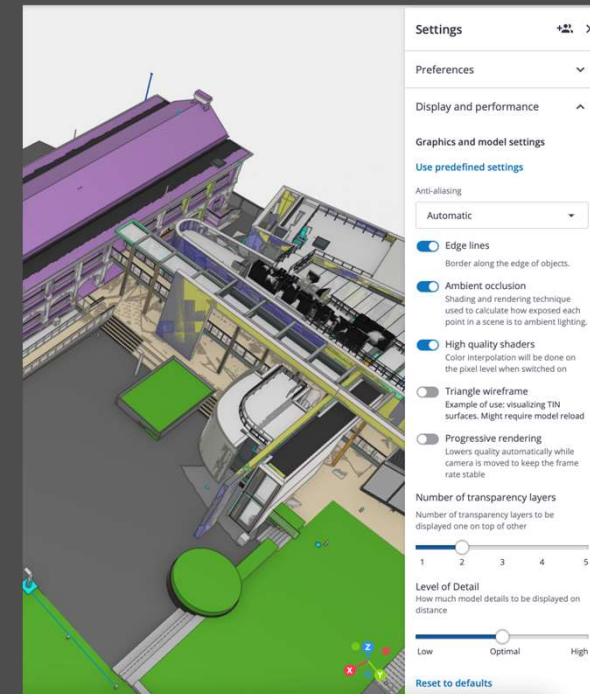
Any Solution?

Limitation – Internet quality for online CDE

- Viewing model online in CDE easily affected by Internet quality.

Solution:

- Settings optimization on web interface
- Desktop client available
- If all fail, alternative IFC viewer choices available



Limitation – BCF implementation varies

- Not fully reproducible across BCF platforms and softwares.

Solution:

- Report bugs to software vendors.
- Detail BCF entry required information.

BIM Project Execution Plan	Activity Centre for the promotion of Chinese History and Culture
5.7.5. BCF Topics	
1. BCF topics shall be used for design and BIM issue tracking.	
2. Design issues which can be illustrated BIM models, and other BIM quality issues shall be recorded, discussed, responded and tracked in BCF Topic.	
3. BCF topics is BCF compatible. It can import and export .bcf files to interoperate with other BCF compatible software, such as Solibri Office and Issue Organizer in Archicad.	
4. To ensure optimal compatibility when visualizing an issue in various BCF-compatible software applications, it is recommended that an issue includes the following components: :	
a.	Involved elements selected
b.	Section planes to show the area
c.	Screenshot
d.	Camera and target location
e.	Orthogonal view more preferable than perspective view
5. Each issue shall be created with the following metadata:	
a.	Assignee
b.	Topic Type
c.	Status
d.	Priorities
e.	Tag

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Supported by OpenBIM experts:



CivilConnect Limited
譽鋒顧問有限公司

Thank You

Representatives:

Geri CHAN – Project Architect

Wing MANG - BIM Team Leader

Dennis Yeung - Architectural BIM Coordinator,
Archicad Expert

Kevin Wong – Structural Expert in openBIM

250 words - The summary description shall be used for future promotion of your Submission:

Integrating OpenBIM in the Museum Project at Kowloon Park: A Shift in Design, Collaboration, and Tender Preparation.

By adaptively reusing the historic Block 58, a grade-I building which was one of the earliest blocks built in the Whitfield Barracks back in 1864, in Kowloon Park and the addition of a new annex, this project will provide a new cultural facility for public's enjoyment.

From inception stage to the present tender documentation stage, the project has implemented an open BIM workflow to facilitate seamless design coordination across various disciplines, despite the use of different BIM authoring software, namely Graphisoft Archicad, Tekla Structures, and Autodesk Revit. The deployment, real-life testing, and exploration of open BIM workflows, protocols, and applications have been integrated into the project's development. This groundbreaking initiative is poised to serve as a pivotal example for the department and lays the foundation for the forthcoming open BIM trend.

Our objective of adopting openBIM is to streamline design, collaboration, and tender preparation process. It serves as a pilot project to embrace openBIM principles and methodologies, with the aim to set an example and standards for other government projects; and to promote the idea of software neutrality for a more diverse and competitive market . OpenBIM, being a collaborative and vendor-neutral process, enables seamless sharing of project information and data, fostering interoperability among various software applications. Our goal is to enhance collaboration, coordination, and efficiency throughout the project lifecycle, while providing a functional activity center with preserved historic integrity. By leveraging openBIM, effective communication among stakeholders, who use different software, was achieved for the successful implementation of the project.