TBI

FOUNDED IN 1932

COMMERCIAL & HOUSING BUILDERS

CONSTRUCTION

5600 PERMANENT EMPLOYEES

MAINTAIN

WE MAKE BUILDINGS SMARTER

Infrastructure

DEVELOPMENT

€1,6 billion OPERATING INCOME

Engineering
A’DAM TOREN
AMSTERDAM
COMPLETED
TRANSFORMATION
PROCESS

INNOVATION
MAKE CONSTRUCTIONS SMARTER
PRODUCT, IMPROVEMENT
Challenges
Challenges
Workplace
Working from everywhere

Working at Home
They have several challenges that they need a solution to resolve:

- TBI have a low technology environment that is predominantly analogue and relies heavily on old processes and paper.
- TBI want to have a cloud-only common data environment, and comply with BIM Maturity Level 3 by 2020.
- BIM users need to work anywhere, everywhere, and anytime.
- TBI want to onboard new users in 5 minutes using self-service.
- Project sites often don’t offer good network bandwidth for dealing with large BIM models.
- Huge project models tend to be split across different locations, leading to higher risk of errors.
- TBI need to offer a cutting edge digital solution to clients.
- TBI want to remove their IT CAPEX to leave just IT OPEX, which is rechargeable to projects.
1) The solution
Solution
Run **Any** Autodesk Software or Service in a Browser from the **Cloud** anywhere, anytime, everywhere.
Welcome to the BIM Cloud Workspace

Connect to the future: The Evolution of the Designer’s Autodesk BIM Cloud Workspace

Open BIM Workspace  Open Service Store
Consume services like a candy store
WORKS ON ANY DEVICE!
(EVEN A RASPBERRY PI)
BIM Cloud Workspace | Impressions

BIM Cloud Workspace
(Windows 10, N-series)

BIM Glue 360
BIM Cloud Workspace | Impressions

InfraWorks 2017

Revit 2017
Solution Components | Autodesk & 3rd Party Apps

Cloud Applications

BIM 360

Engineering Applications

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The N-series is a family of Azure Virtual Machines with GPU capabilities. GPUs are ideal for compute and graphics-intensive workloads, helping customers to fuel innovation. The N-series will feature the NVIDIA Tesla accelerated platform, as well as, NVIDIA GRID 2.0 technology, providing the highest-end graphics support available in the cloud today.

Machine configuration:
- Windows 10
- Intel Xeon E5 2690
- 56GB RAM
- NVIDIA GRID M60
- 512 GB SSD HD

More Information:
The NVIDIA GRID solution runs on top of award-winning, NVIDIA Maxwell-powered GPUs. The NVIDIA® Tesla® M60 GPU accelerator works with NVIDIA GRID™ software to provide the industry's highest user performance for virtualized workstations, desktops, and applications. This solution allows enterprises to virtualize any application including professional graphics applications and deliver them to any device, anywhere.

More Information:
RES ONE | Flexible Workspace Set-Up

Building
- Building, Design and Modelling
- Windows 10
- United Kingdom/ENU
- Revit Extensions, IFC exporter

MEP
- Building, Design and Modelling
- Windows 10
- Netherlands/ENU
- Stabicad, Revit Extensions IFC exporter

Infrastructure
- Infrastructure, Water, Industry
- Windows 10
- Germany/DEU
- Civil Country Kit Germany Productivity pack

Visualization
- Visualization
- Windows 10
- Netherlands/ENU

Applications
- ARNBM

Guest OS
- Windows 10

Language/Country settings
- United Kingdom/ENU
- Netherlands/ENU
- Germany/DEU

Plugins
- Stabicad, Revit Extensions IFC exporter
- Civil Country Kit Germany Productivity pack
Advantages for TBI
Result
Performance Test | Revit Benchmark Test (RFO)

**BIM Cloud Workspace**
Azure N-Series, Windows 10, 56GB RAM, NVIDIA GRID M60, Intel® Xeon® E5 2690, 512 GB SSD HD

RVT 2017 - Standard set - 2017.03.06 @ 20.20.42 on AMSWINGPU6001
RFO Benchmark v3.0 (build 17.10.2016)
RevitForum.org

All times are in seconds, lower is better.

Run on Autodesk Revit 2017.0.3 Security Fix

*Update* 19.22 update previous version file

Model creation benchmark
5.00 opening and loading the custom template
18.72 creating the floors levels and grids
36.57 creating a group of walls and doors
66.97 modifying the group by adding a curtain wall
20.06 creating the exterior curtain wall
13.91 creating the sections
0.95 changing the curtain wall panel type
17.71 creating area plans
2.67 creating and applying view template
**186.56 TOTAL**

**Sample BIM Workstation**
HP Z840 Workstation, Windows 10, 32GB RAM, NVIDIA P5000, Intel® Xeon® E5 2600, 512 GB SSD HD

RVT 2017 - Standard set - 2017.03.06 @ 20.18.03 on C0049923MAC2
RFO Benchmark v3.0 (build 17.10.2016)
RevitForum.org

All times are in seconds, lower is better.

Run on Autodesk Revit 2017.1.1

*Update* 15.38 update previous version file

Model creation benchmark
6.03 opening and loading the custom template
32.02 creating the floors levels and grids
43.89 creating a group of walls and doors
57.57 modifying the group by adding a curtain wall
33.56 creating the exterior curtain wall
29.45 creating the sections
0.57 changing the curtain wall panel type
41.92 creating area plans
3.82 creating and applying view template
**258.13 TOTAL**
Advantages for TBI

The promise of the BIM Cloud Workspace

- A cloud only high end graphics workspace solution for any Autodesk product for medium to large size enterprise accounts
- Allows rapid deployment (below 5min) of user on any project
- Centralized and connected BIM 360 Common Data Environment for the “Next Generation of Collaboration”
- No customer IT involvement
- Allows workspace access from anywhere, anytime on any device (even on a Raspberry PI) and supports in the era of connection the “Next Generation Collaboration”
- Allows to have secure, standardized, flexible workspace with a localized or globalized context to support 75+ Autodesk applications including addons
- All costs are OPEX and easy to recharge on any project
- Allows to run solution as self-service with 80% proactive delivered services
- A cutting-edge solution for leaders in digitalisation to drive BIM adoption
- Higher performance than a typical BIM designer desktop and allows to work anywhere on very large BIM models with very low bandwidth requirements which was not possible before