

Inovativní přístupy ke sdílení dat v AEC

Daniel Erhart

BIM konzultant, Arkance-Systems

Tomáš Lendvorský

Senior technický specialista AECO, Autodesk

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AUTODESK PLATFORM SERVICES



95.5%
všech dat **dat** v AEC
není využito

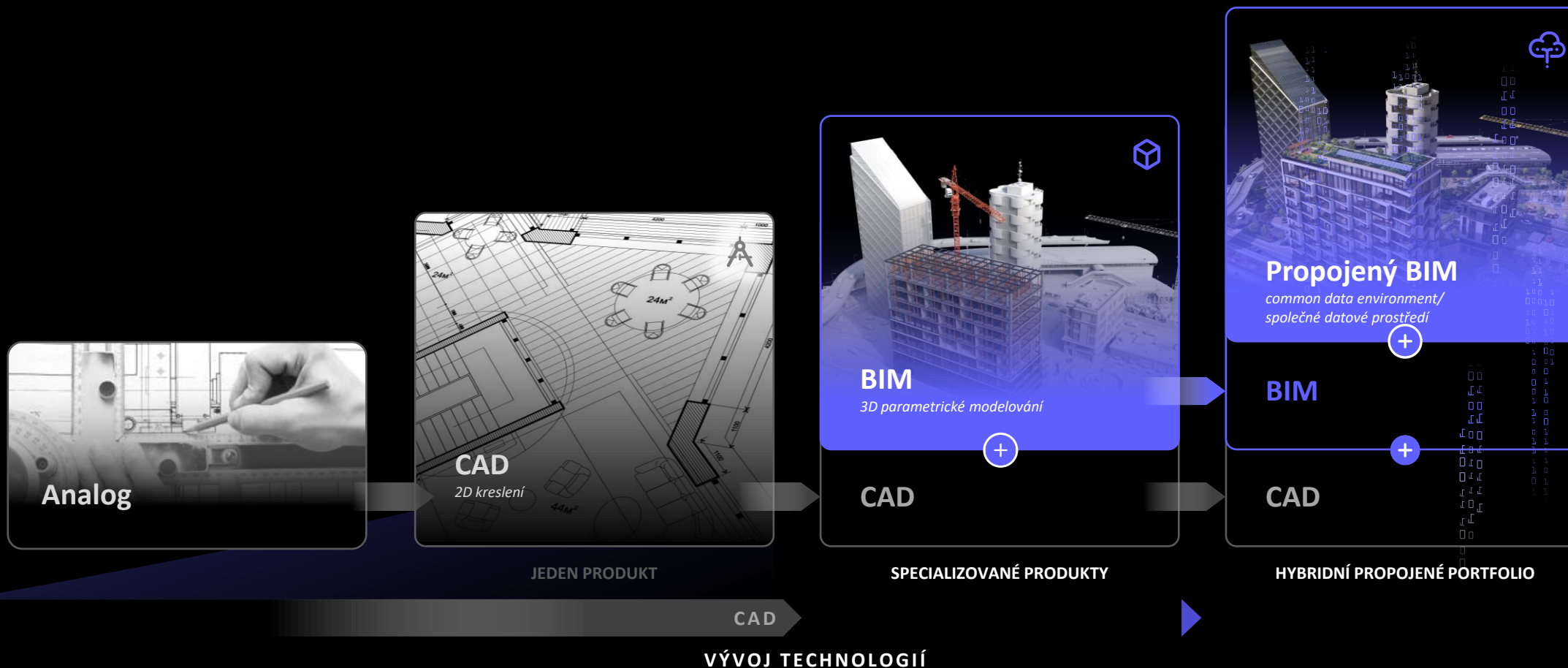


¹ Source: *Big Data = Big Questions for the Engineering and Construction Industry*, FMI Report

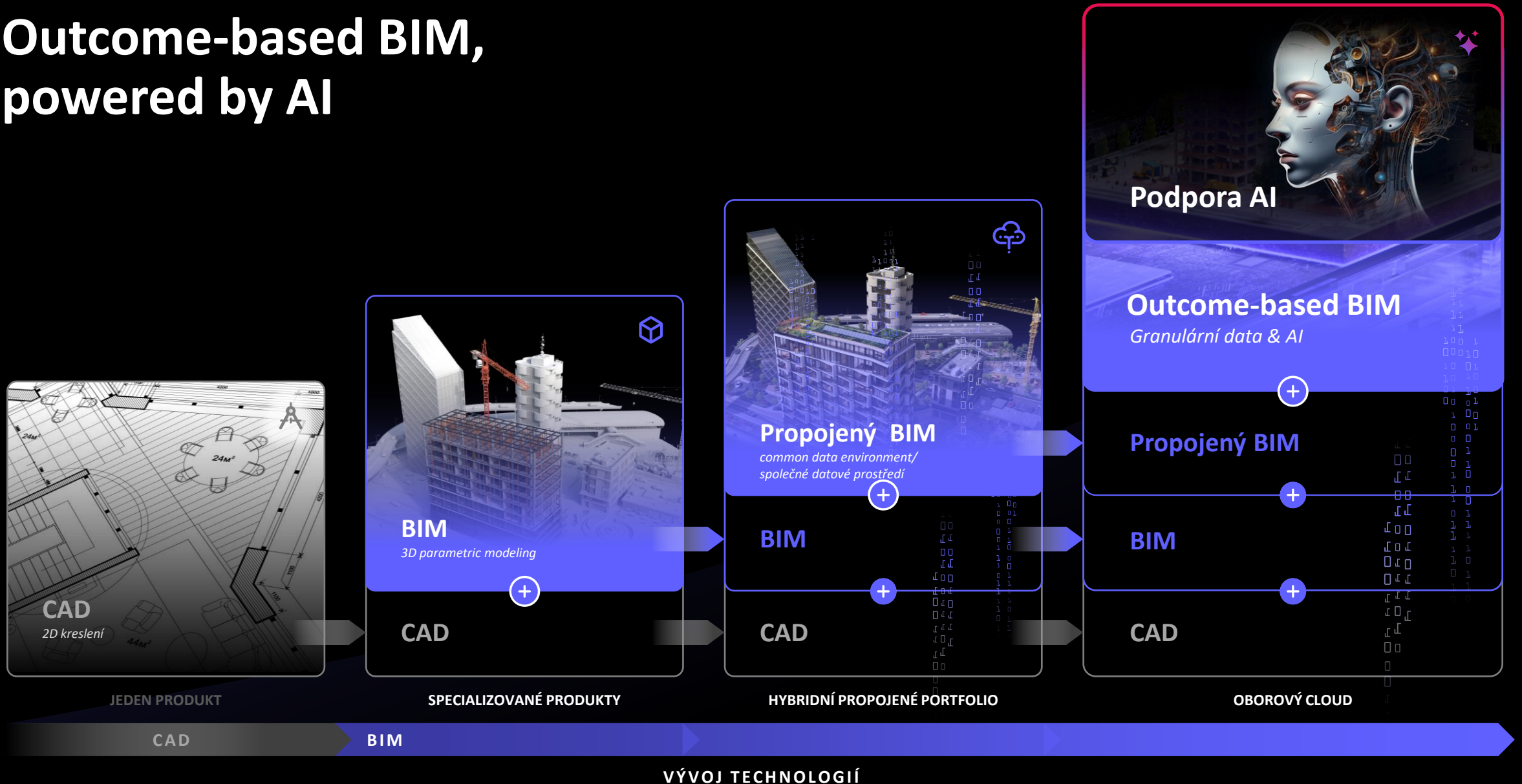




Digitální transformace AECO



Outcome-based BIM, powered by AI



VÝSLEDNÁ KRITERIA



-  **Udržitelnost**
-  **Náklady**
-  **Čas na dodání**
-  **Obyvatelnost**
-  **Rozmanitost**
-  **Čistý provozní zisk**
-  **Lidská zkušenost**
-  **Cenová dostupnost**



Propojená
Granulární data



Kontext reálného světa
a znalost



ZRYCHLENÝ PŘÍSTUP

Efektivnější procesy

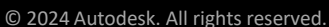


AI spolupřetváření



**DOSAŽENÍ
POŽADOVANÝCH
VÝSLEDKŮ**

Forma je oborový cloud pro AECO



Co je Forma?

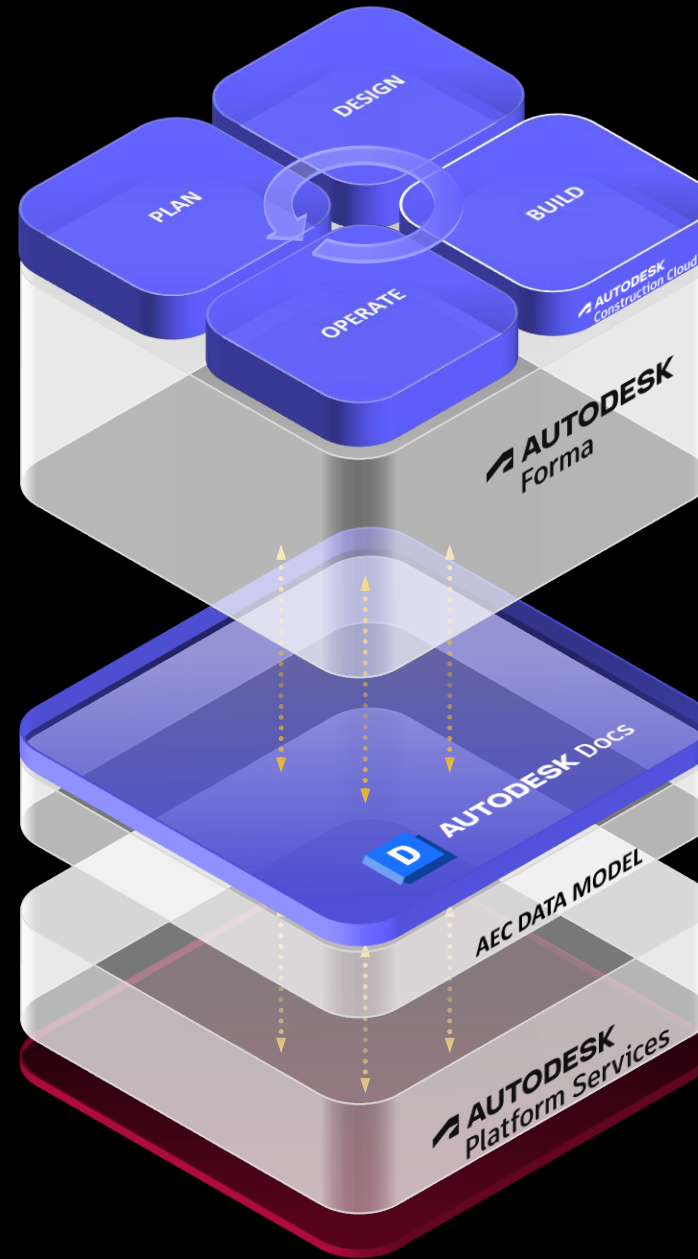
Forma je oborový cloud pro AECO

Sjednocuje pracovní postupy BIM napříč týmy, které plánují, projektují, zhotovují a provozují dílo

Poskytuje granulární data který hladce prochází fázemi projektu, zúčastněnými stranami a typy aktiv (budova, vodohospodářská, dopravní či průmyslová stavba)



Propojení dat napříč lidmi, procesy a platformami



DATA EXCHANGES & API



Překlopení naší vize do reality

ZAČÁTEK...

Spolu s daty vytvoření úložiště AEC dat pro všechny segmenty průmyslu a fáze projektu

A...

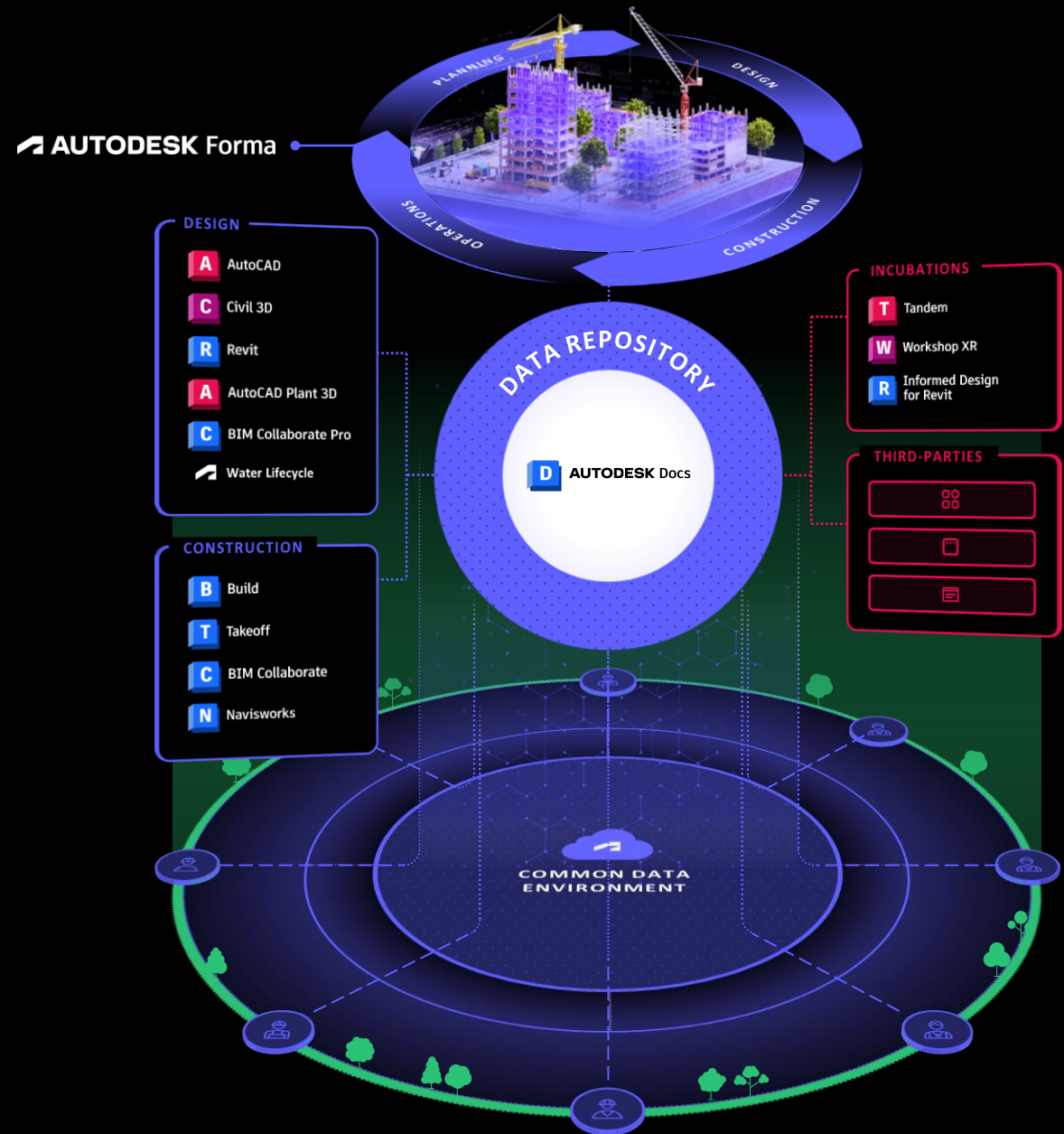
Vytvoření funkcionality v rámci Formy, podpořené daty různých fázích projektu, počínaje plánováním

PLUS (SOUČASNĚ)...

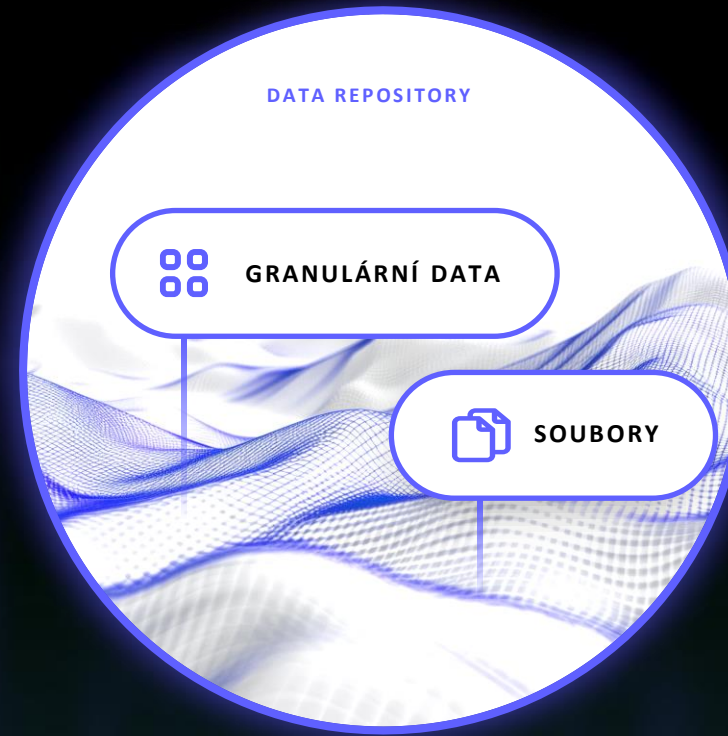
Připojení stávající nabídky s AEC úložištěm dat a podporované hybridních pracovních postupů

SPOLU S...

Udržitelnost a se zaměřením na otevřený ekosystém



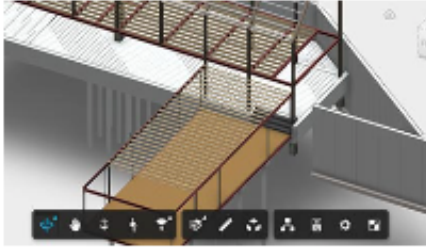
**Forma umožňuje
přístup k cenným
datům**



Základem jsou Autodesk Docs: Společné datové prostředí (CDE)



APS APIs



Online Viewer

Build a viewer that converts and displays models on a browser



Photo to 3D

Build an application to convert photos to 3D file

AEC Data Model (Beta)

Enable granular access to AEC design data stored in the cloud

Autodesk Fusion (New)

Integrate and innovate with the Autodesk Fusion industry cloud

Data Exchange (New)

Connect and access subsets of design data in your app of choice

Design Automation

Run automation scripts on your design files

Parameters API

Streamline data flows using the same parameters in any design tool

Token Flex

Token Flex customers: Access your token usage data

Autodesk Construction Cloud

Integrate apps with the unified Autodesk Construction Cloud

BIM 360

Build apps and custom integrations for the construction industry

Data Management

Access and manage files and data in Autodesk cloud storage

Manufacturing Data Model

Read, write, and extend manufacturing design data

Reality Capture

Create 3D models, orthophotos, and laser scans with photos

Viewer

View and navigate through complex 2D and 3D models

Autodesk Forma

Generate geometry within Forma UI by using custom logic

BuildingConnected API (New)

Access BuildingConnected Pro and Bid Board Pro data

Data Visualization

Visualize heatmaps and sprites with custom data

Model Derivative

Extract data and convert file format of 2D or 3D models

Tandem Data API (New)

Enable read and write access to the Tandem database

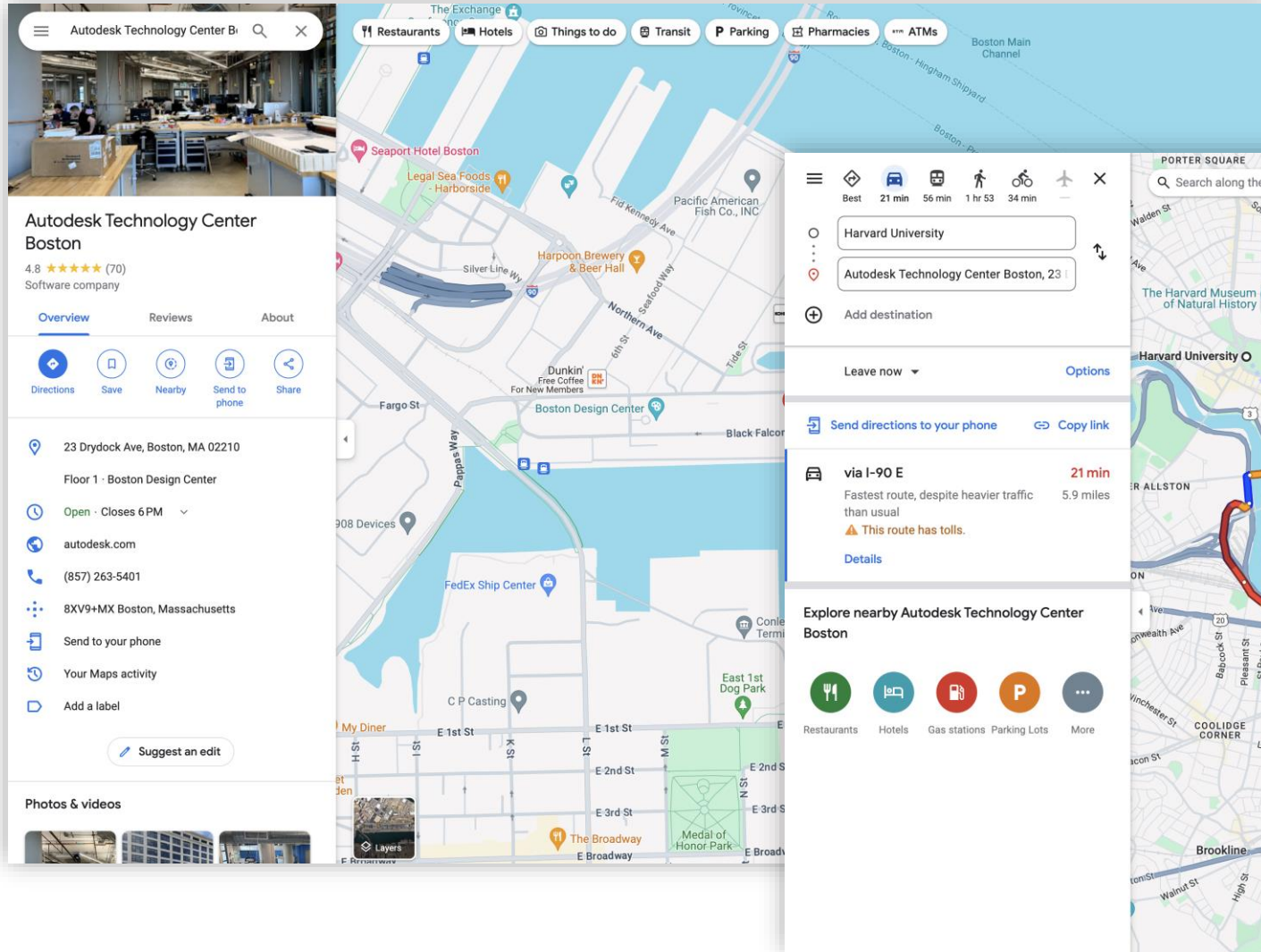
Webhooks

Receive event notifications from Autodesk Web Services

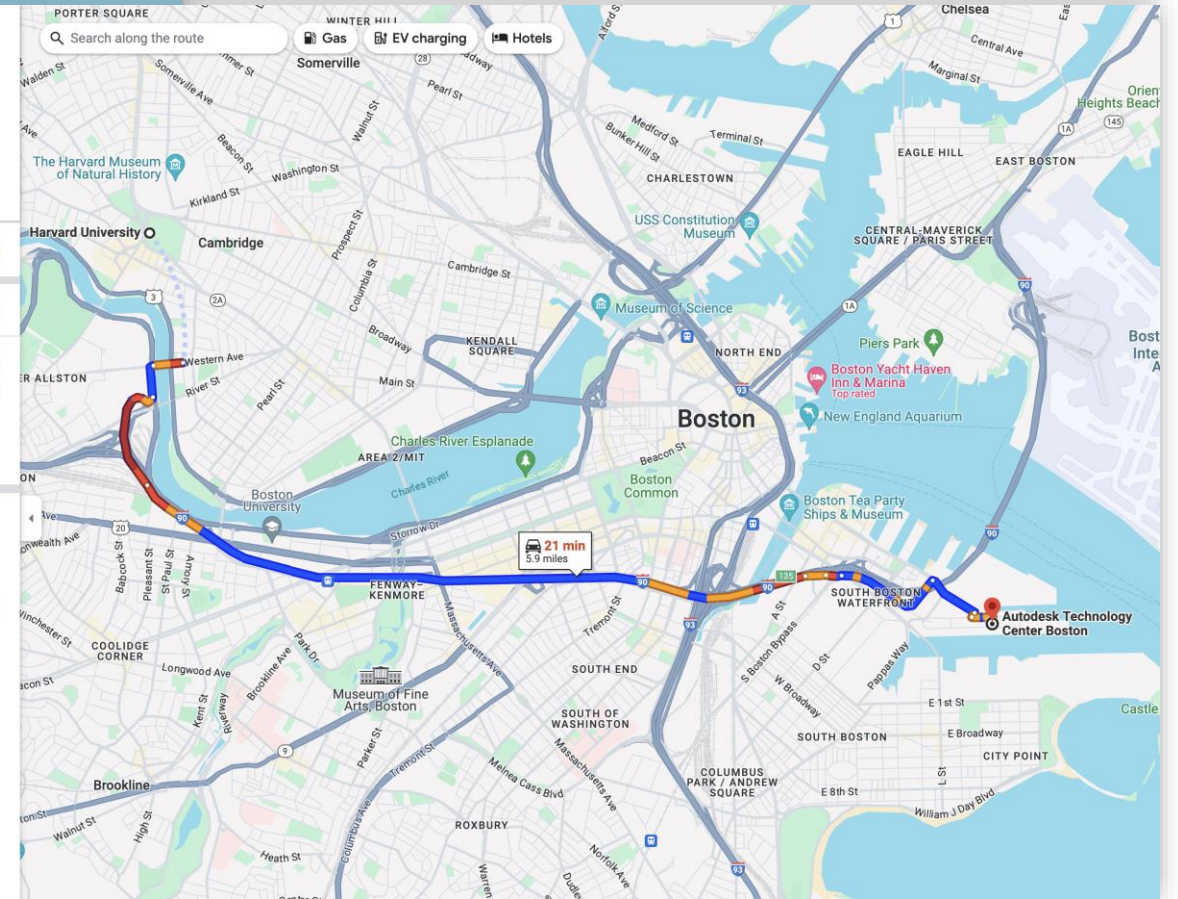


Data Exchange

Autodesk Data Model



Data Exchange



Spolupráce napříč odvětvími je *fragmentovaná*

ROZMANITÝ EKOSYSTÉM NÁSTROJŮ



Sdílení dat mezi aplikacemi je složité, roztržštěné a časově náročné

POSTUPY NAPŘÍČ FIRMAMI



Filtrování, zabezpečení a správa sdílených dat je složitá a nespolehlivá

ZVYŠUJÍCÍ SE SLOŽITOST PROJEKTU



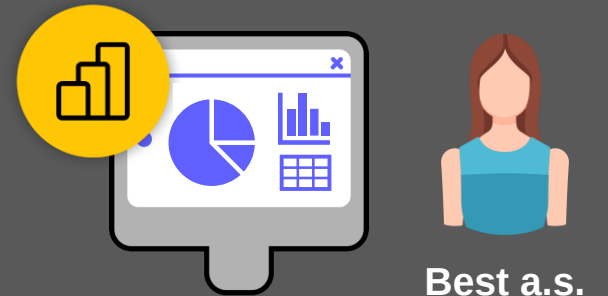
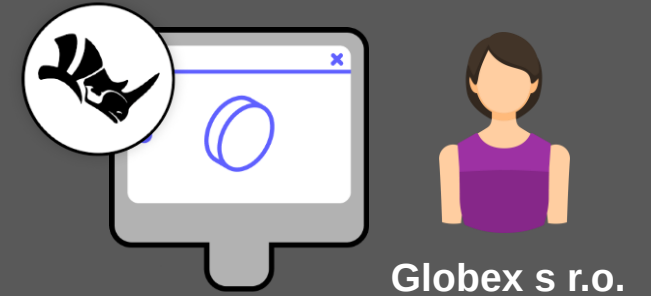
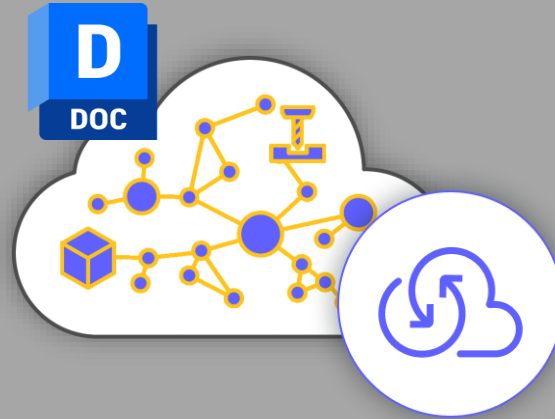
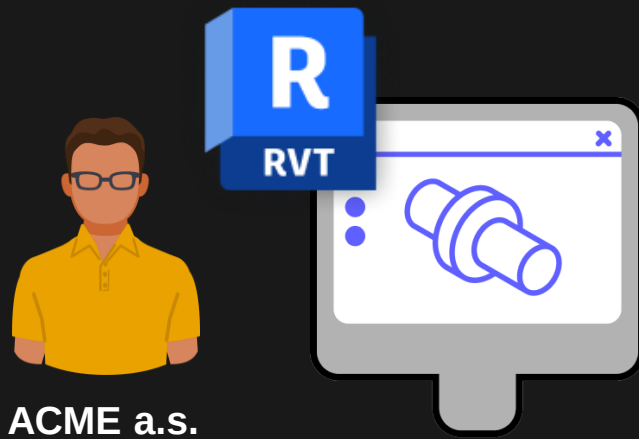
Udržování sdílených dat v aktuálním stavu a zajištění včasných aktualizací je omezené a roztržštěné

Co Data Exchange přináší

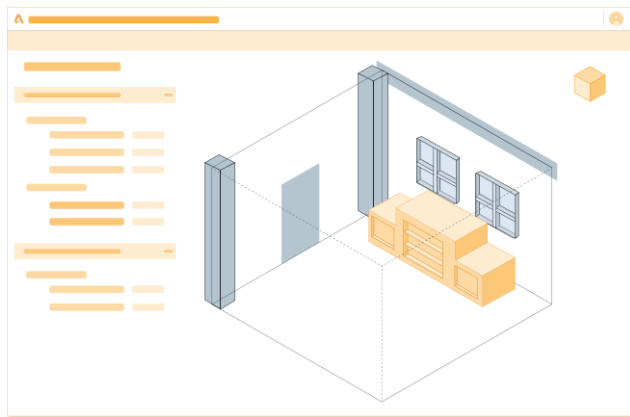
Naším cílem je umožnit interoperabilitu mezi aplikacemi a různými odvětvími

Děláme to prostřednictvím otevřeného ekosystému konektorů, které vytváří a přijímají **podmnožiny granulárních dat**.

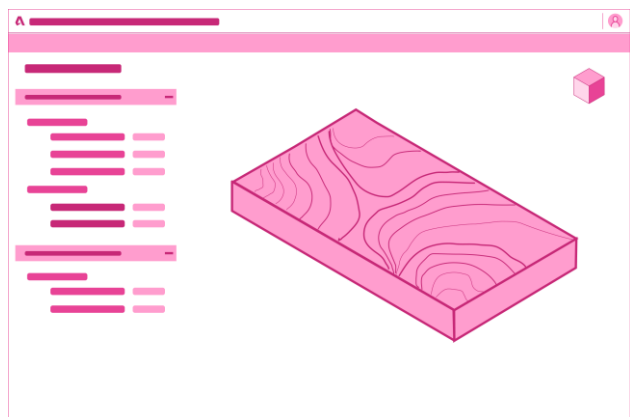
Díky sdílení přes Autodesk Docs máte vysokou úroveň **kontroly**.



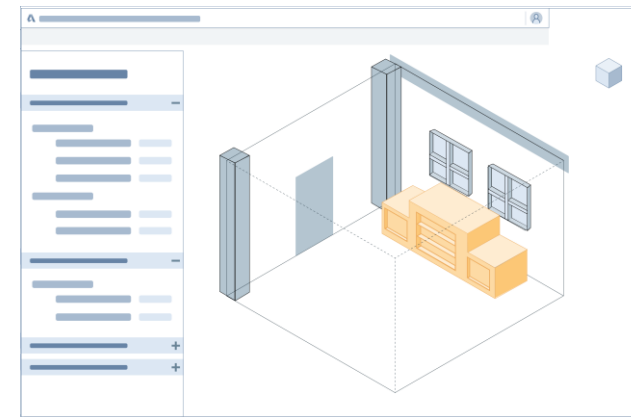
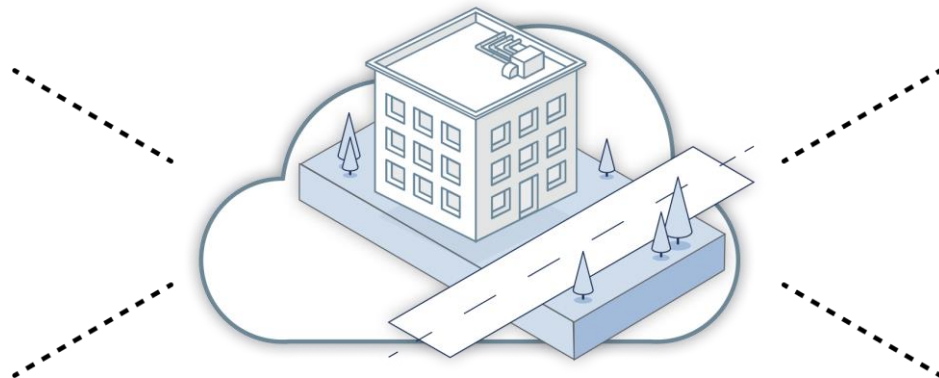
Data Exchange zjednodušuje spolupráci mezi aplikacemi a týmy



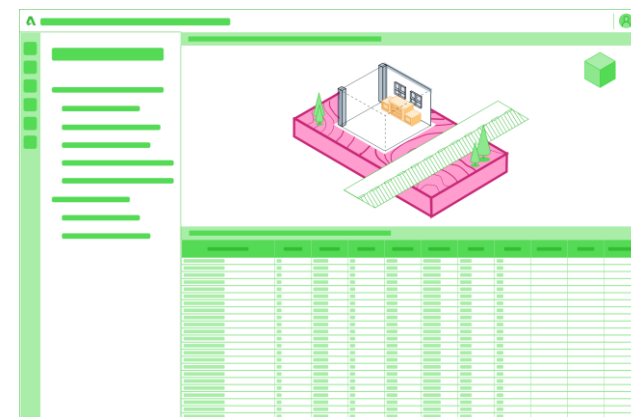
Budovy



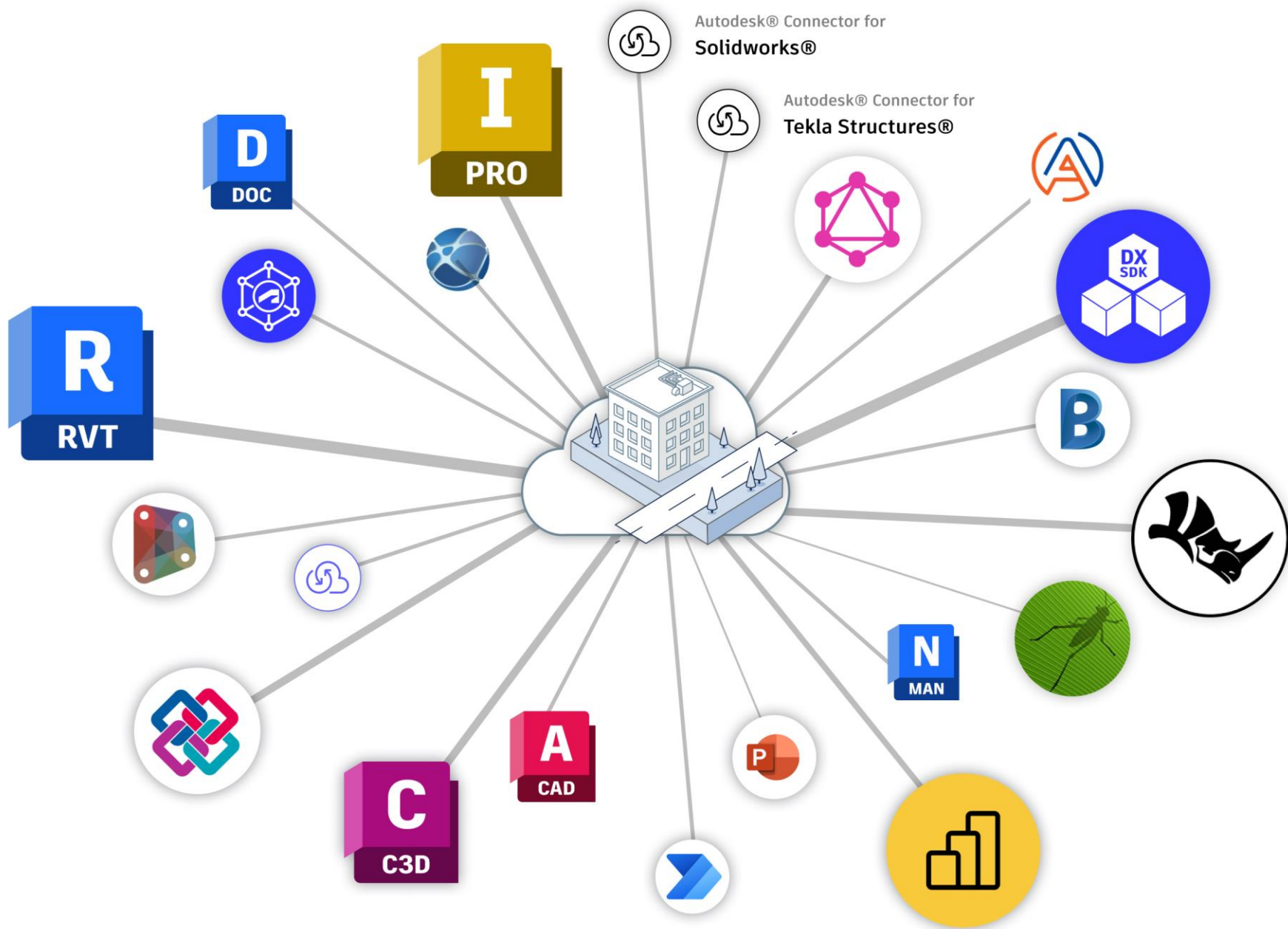
Infrastruktura



Strojírenství



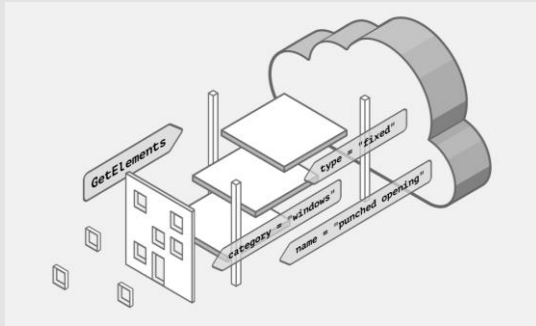
Dashboardy



Přístup do Data Exchange

Vhodné pro nevyvojáře

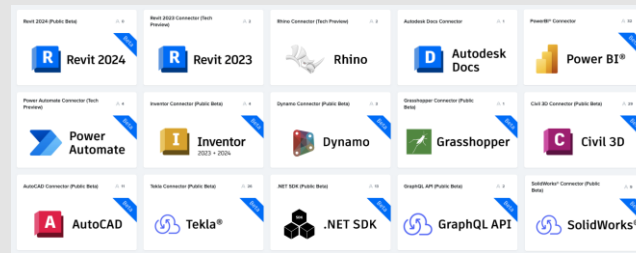
API



GraphQL API / .NET SDK

[Data Exchange | Developer Guide](#)

Data Connectors



Available through apps.autodesk.com /
feedback.autodesk.com

[Data Exchange Help | Data Exchanges](#)

Dynamo

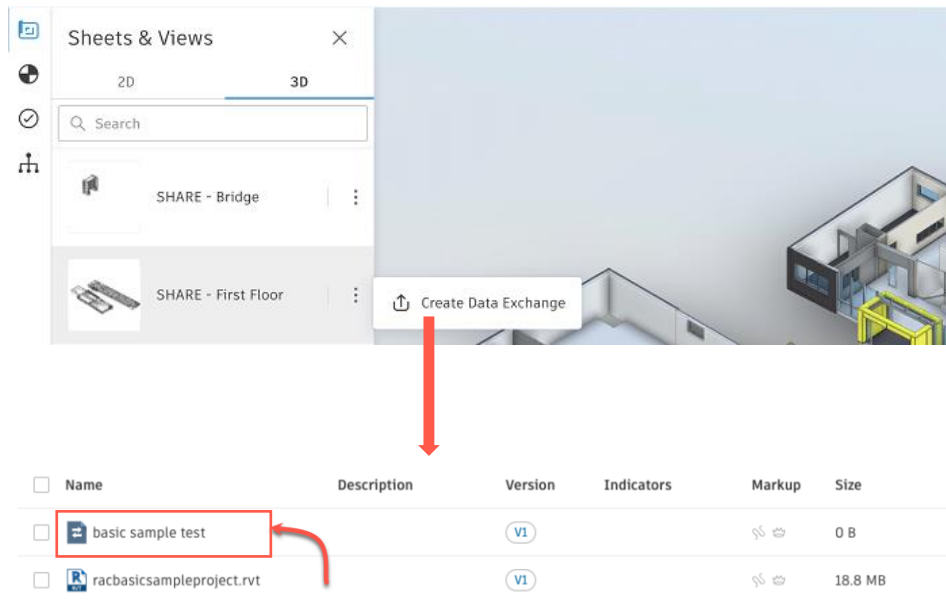


Dynamo Connector for Data Exchanges

[Data Exchange Help | Dynamo Connector
for Data Exchanges](#)

Jak vytvořit Data Exchange

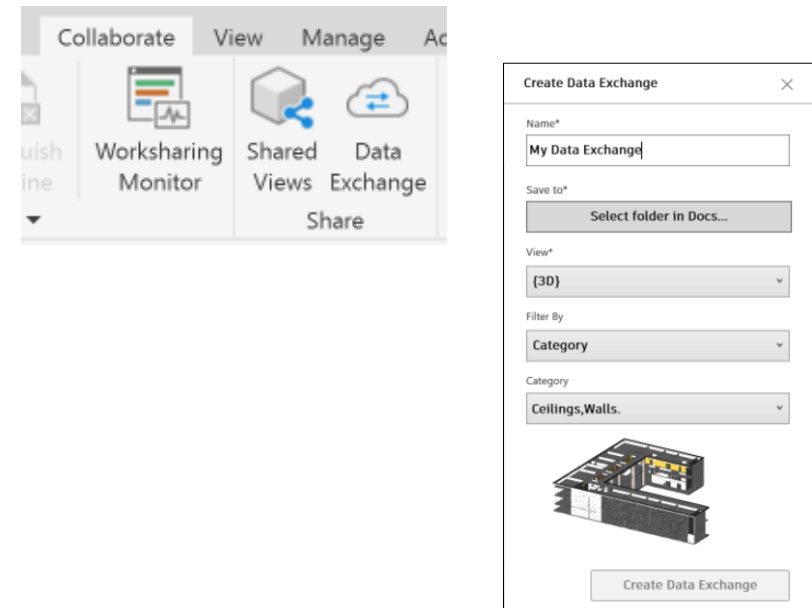
Autodesk Docs konektor



Vytvoření Data Exchange z publikovaného 3D pohledu z Revitu 2023 (či pozdějšího)

💡 Automaticky aktualizováno při publikování nové verze

Nadstavba desktopové aplikace



Vytvoření Data Exchange na základě zobrazení a dalších filtrů





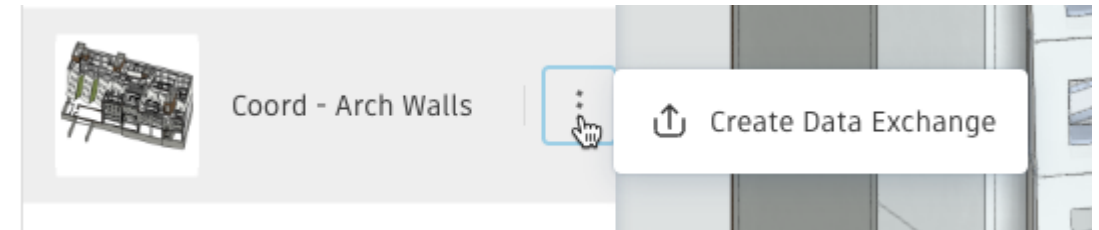
Příklady pracovních postupů

Demo

Power BI

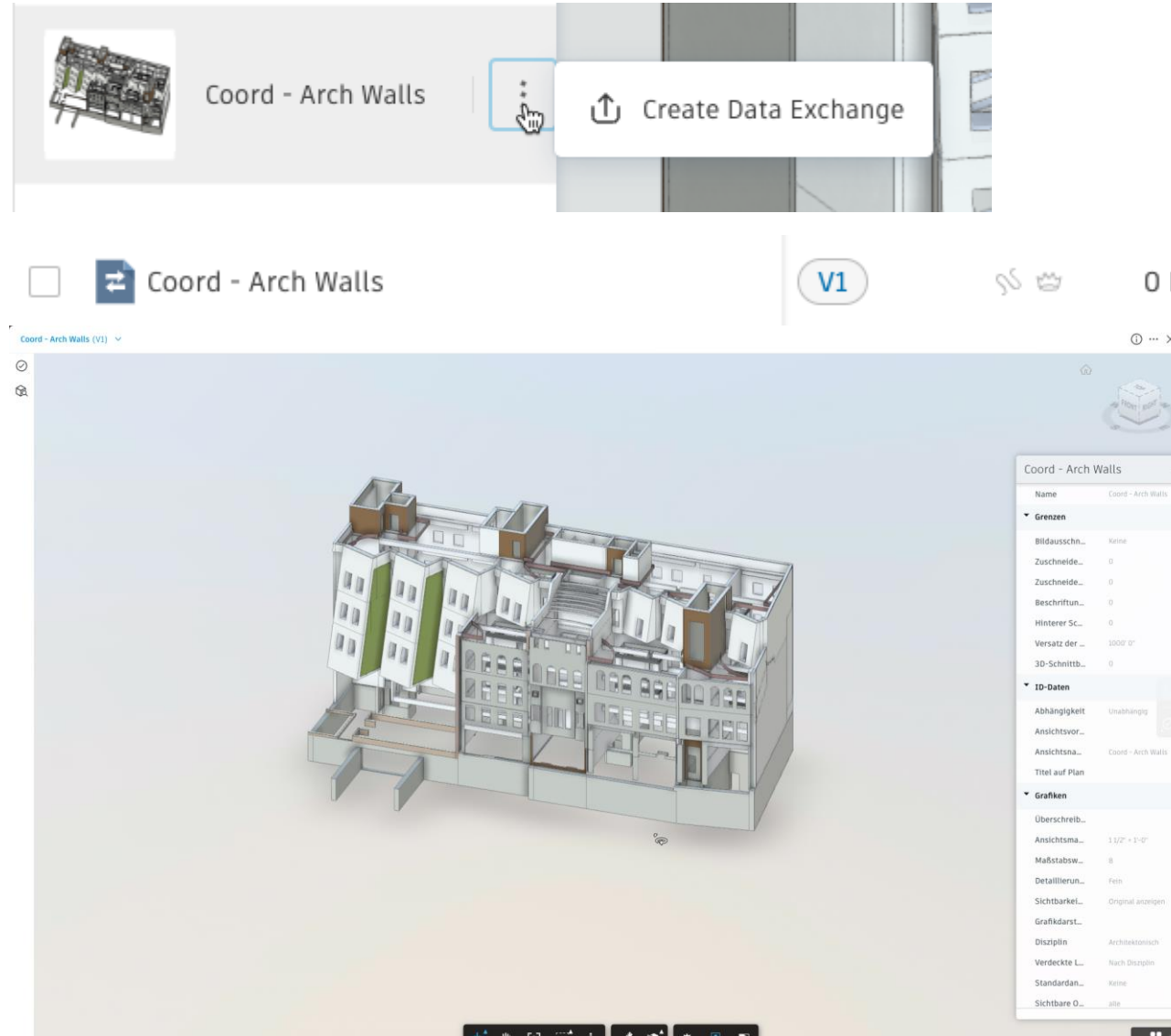


Vizualizace BIM dat



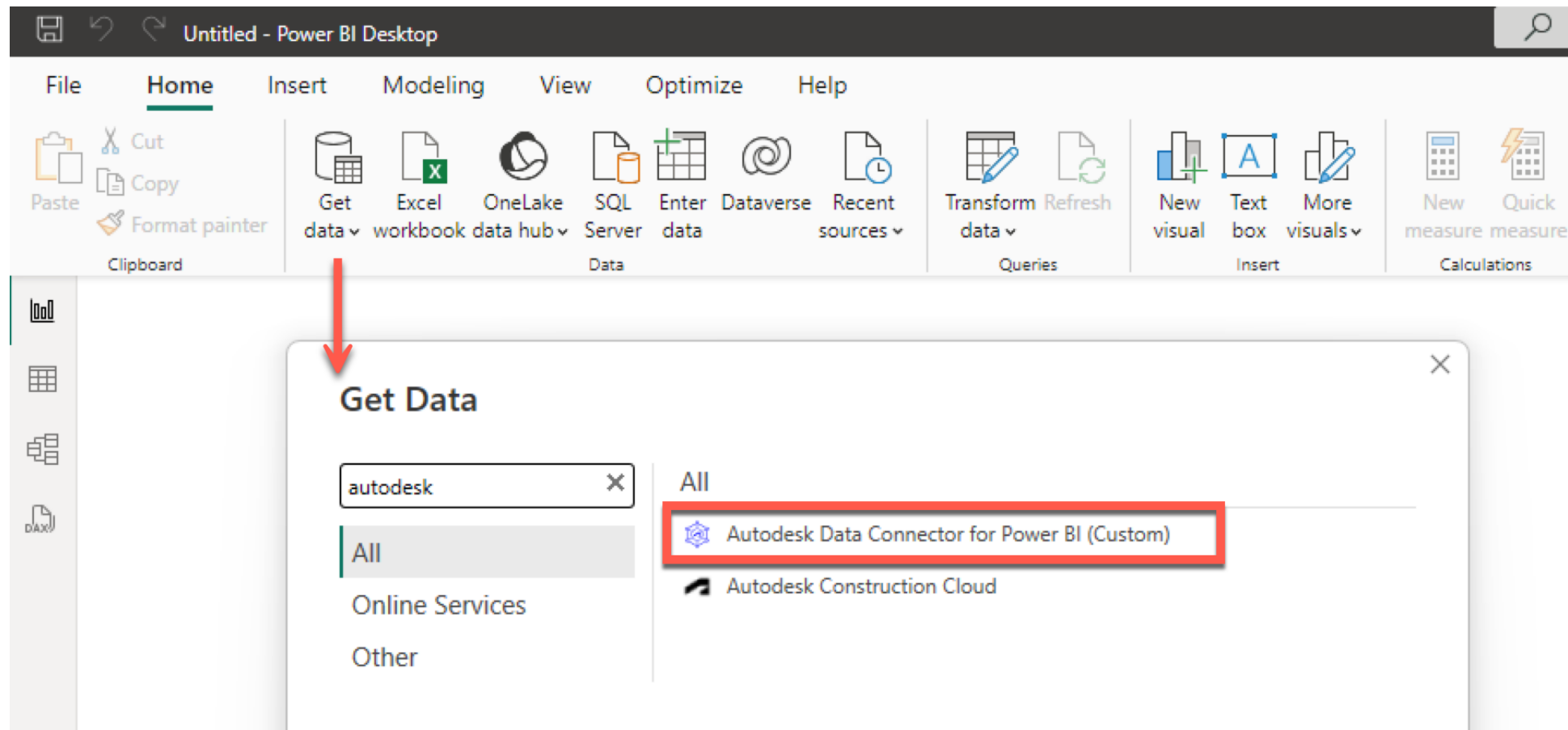
ACC

Vytvoření Data Exchange



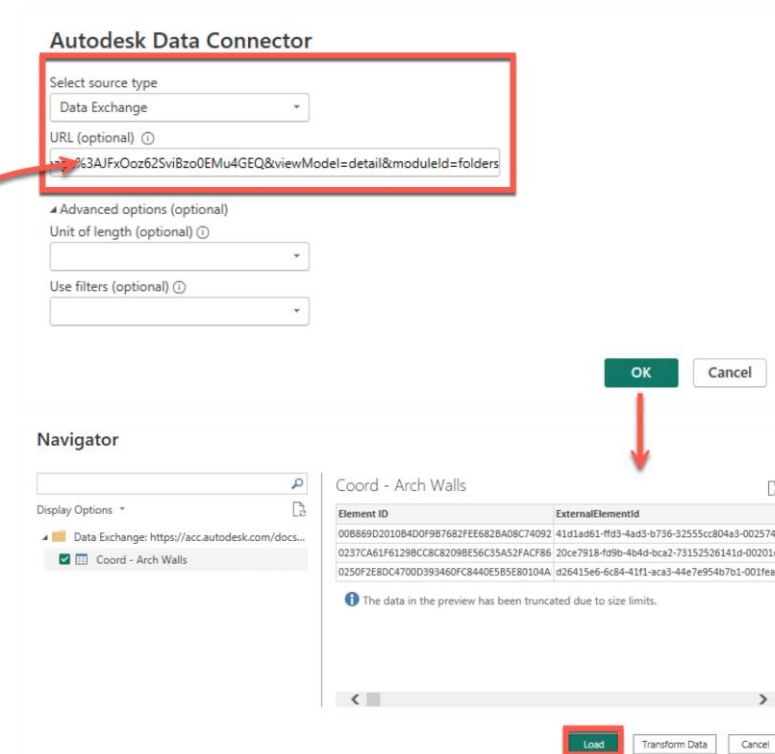
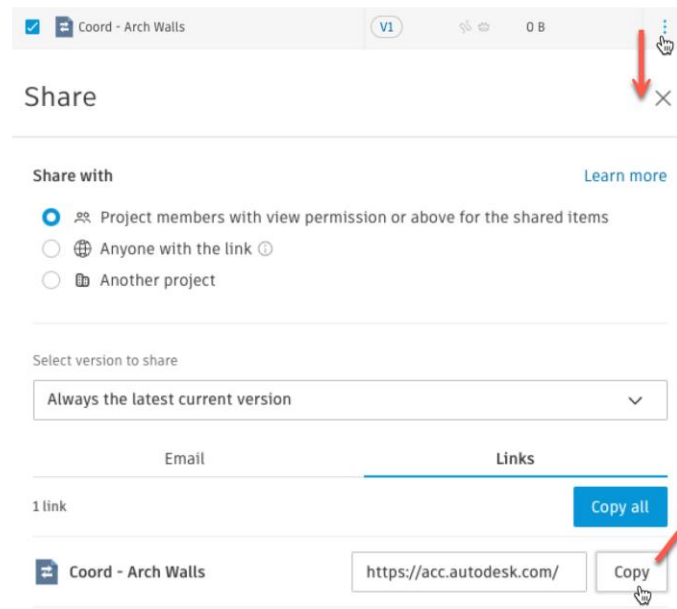
Power BI

Propojení na Data Connector



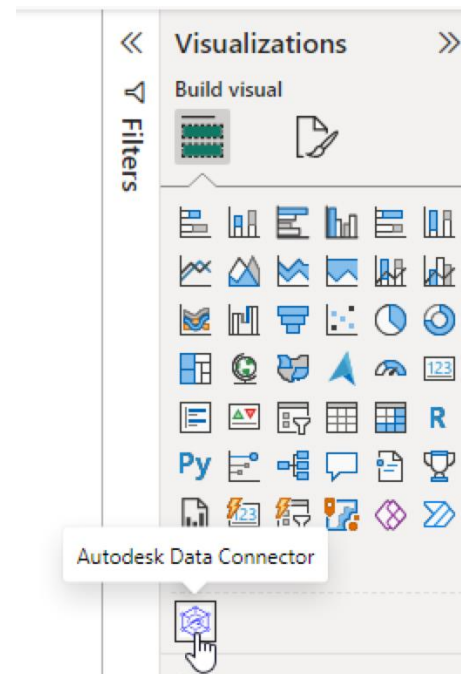
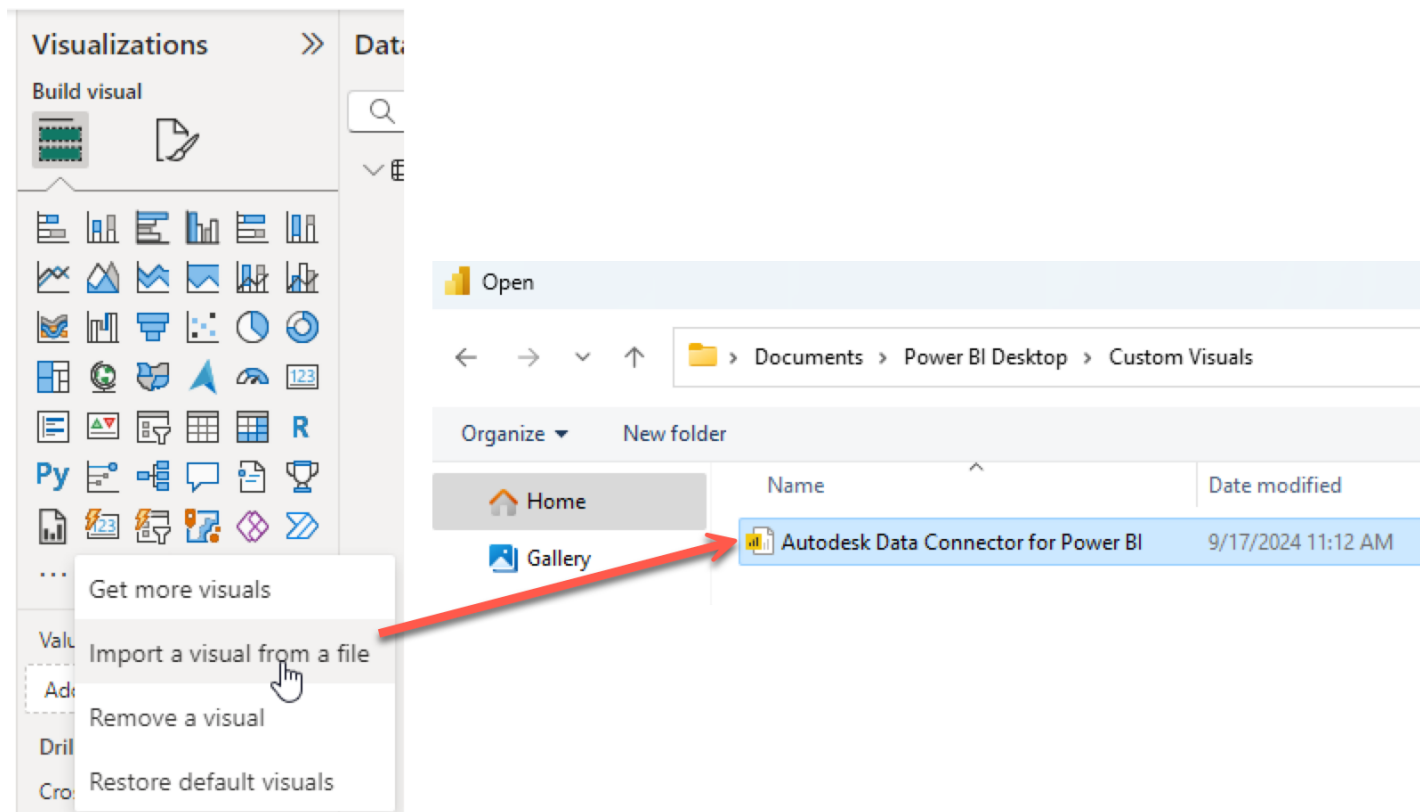
Power BI

Načtení dat do Power BI



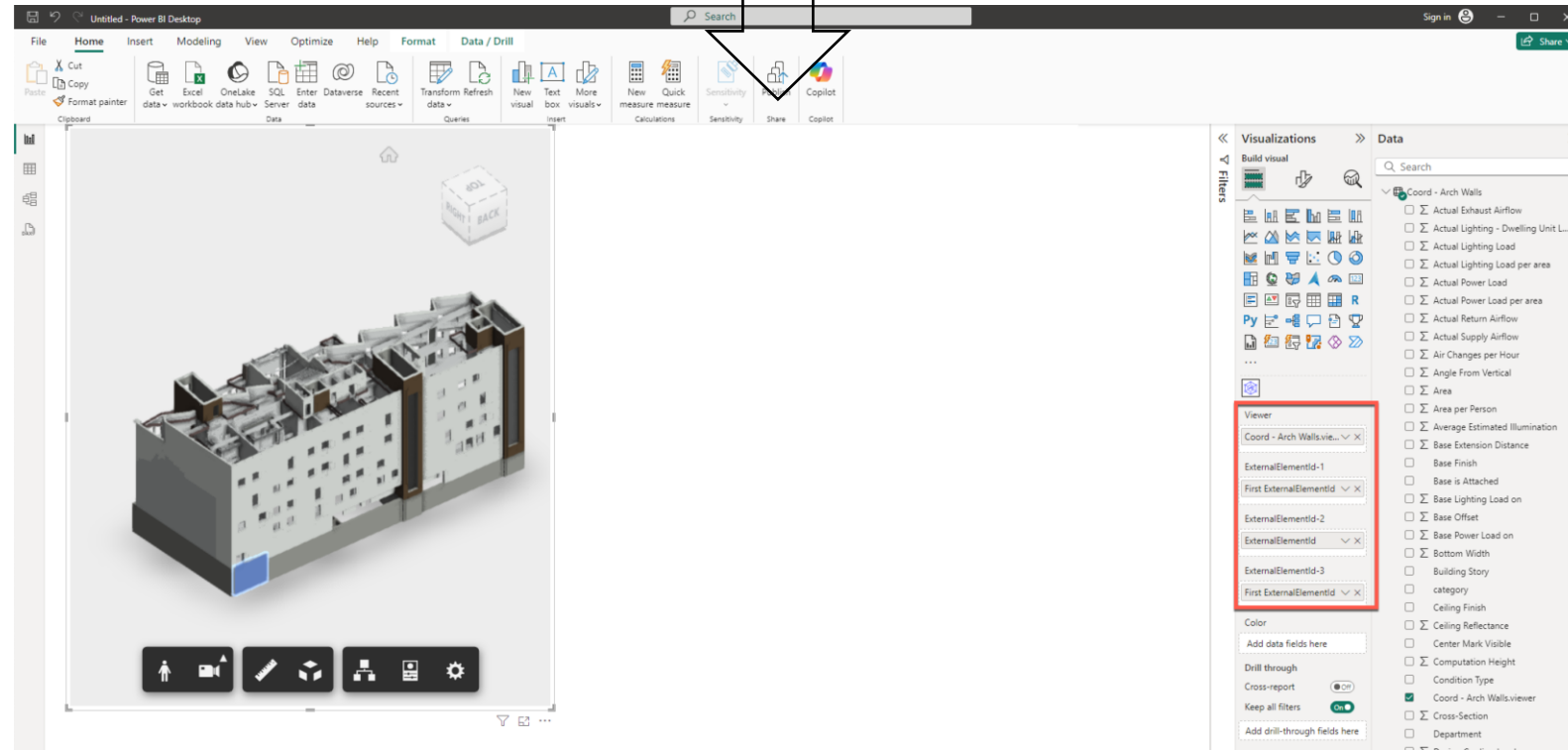
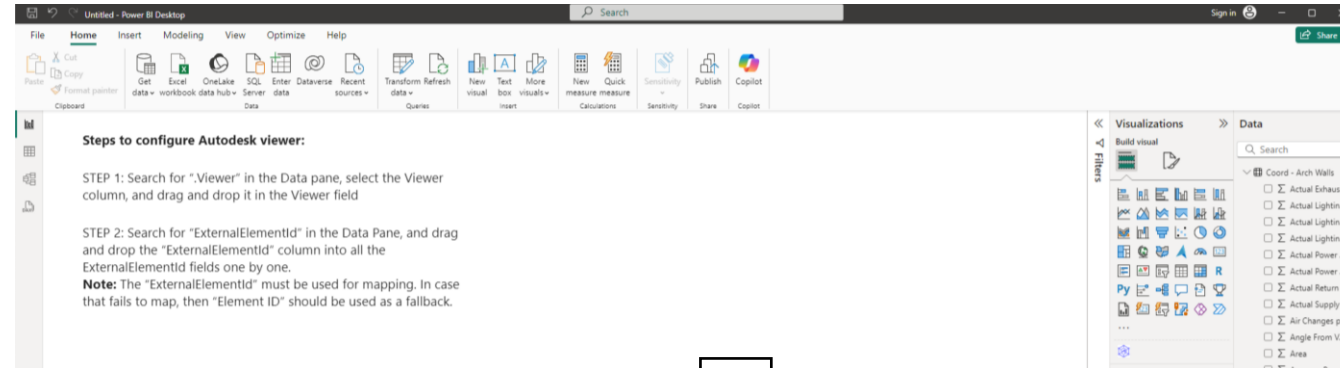
Power BI

Načtení Autodesk Viewer



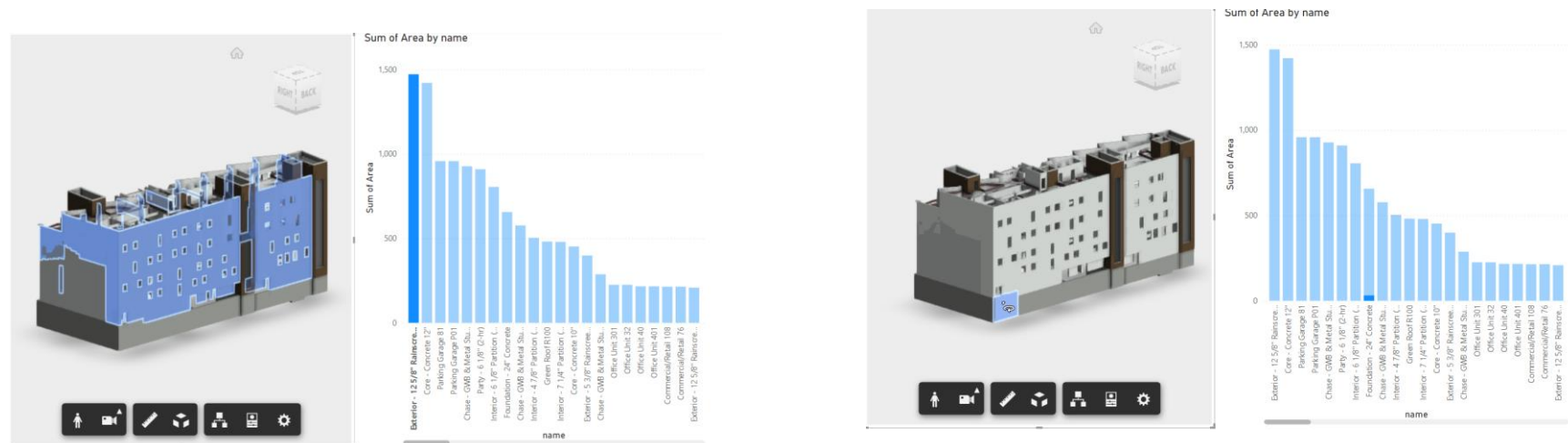
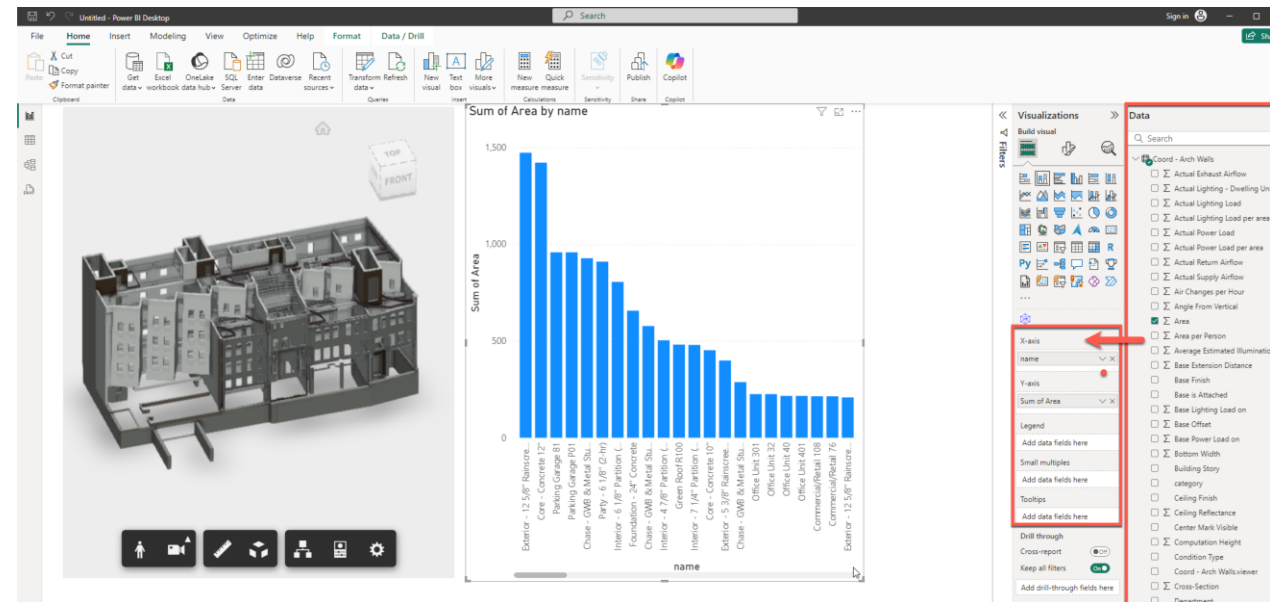
Power BI

Konfigurace Autodesk Viewer



Power BI

Konfigurace dashboardu



Další informace

[Autodesk Data Connector for Power BI is now Generally Available!](#)

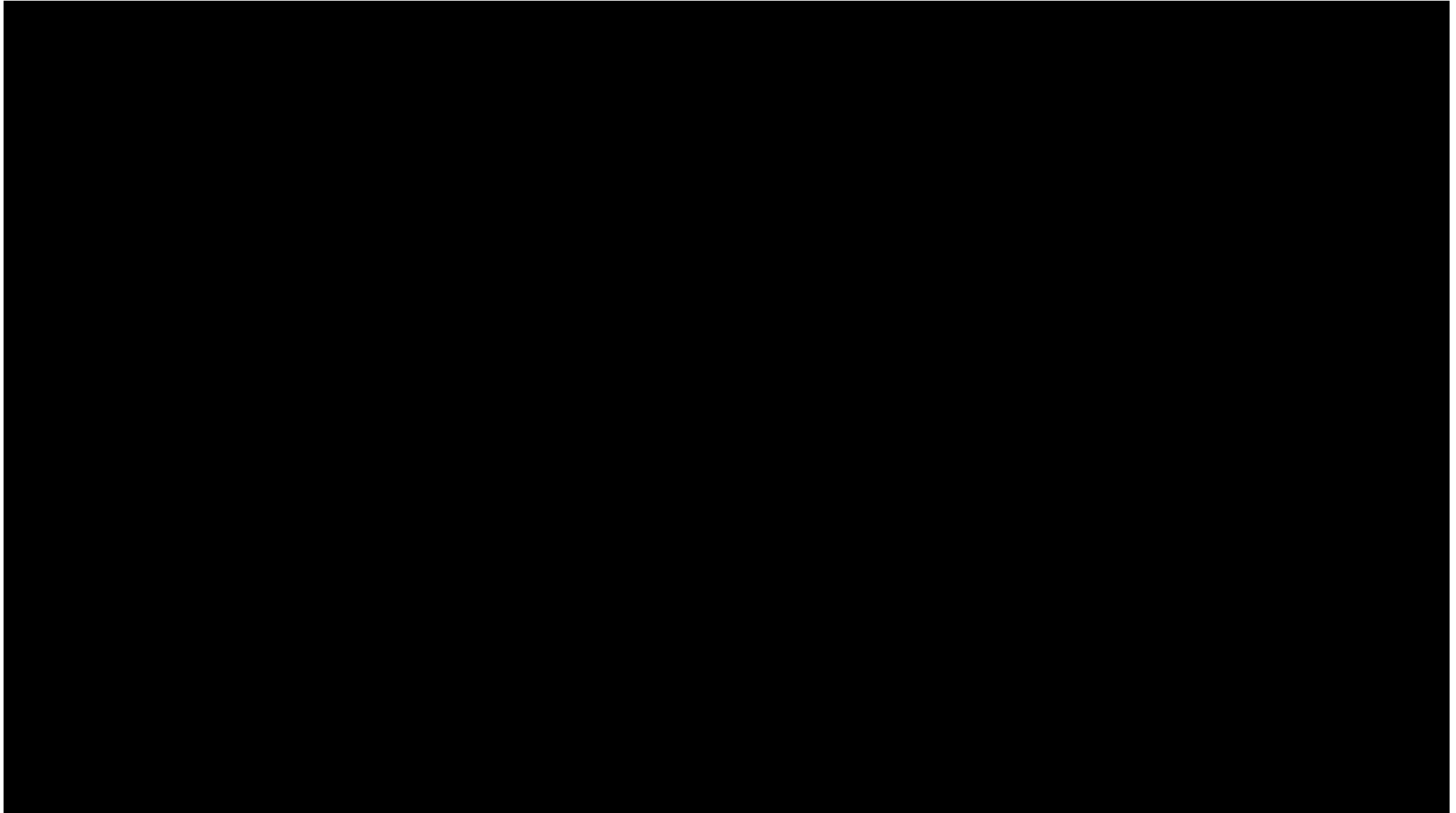
[Data Exchange Help | Autodesk Data Connector for Power BI](#)

[Get started with Data Exchange](#)

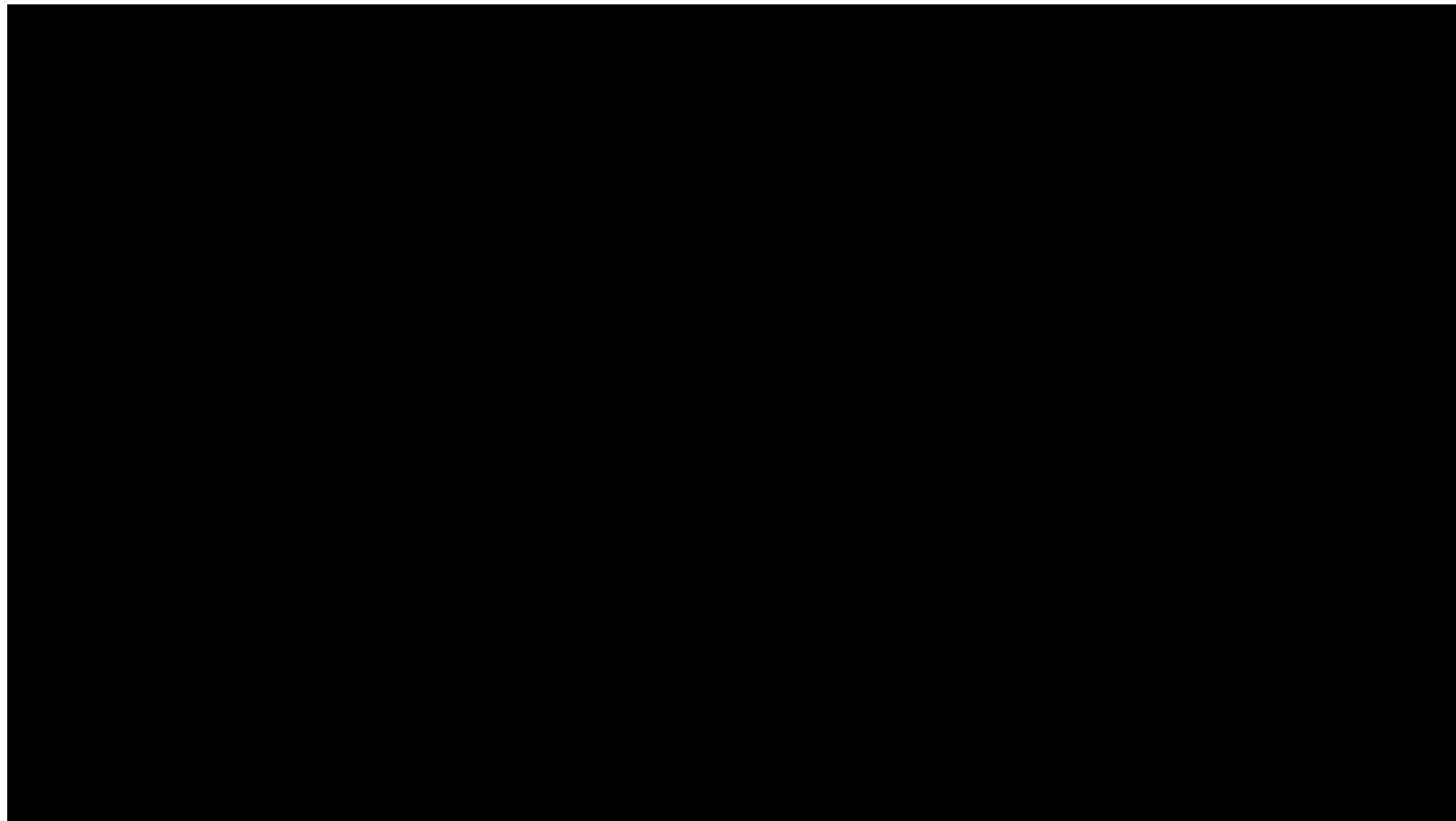
[Data Exchange Roadmap](#)

[Data Exchange Community](#)

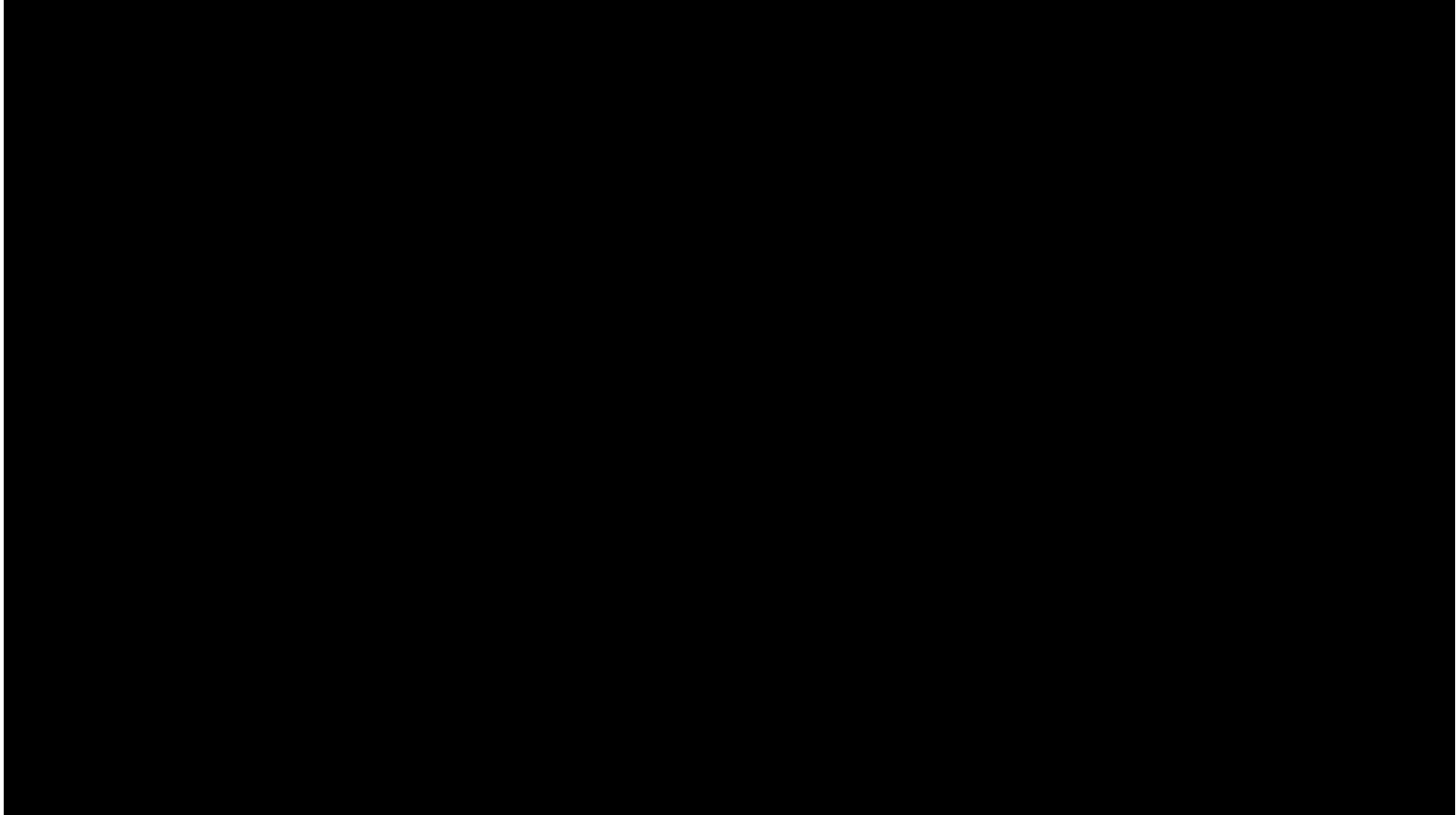
Spolupráce: Revit + Rhino



Spolupráce: SolidWorks-Rhino



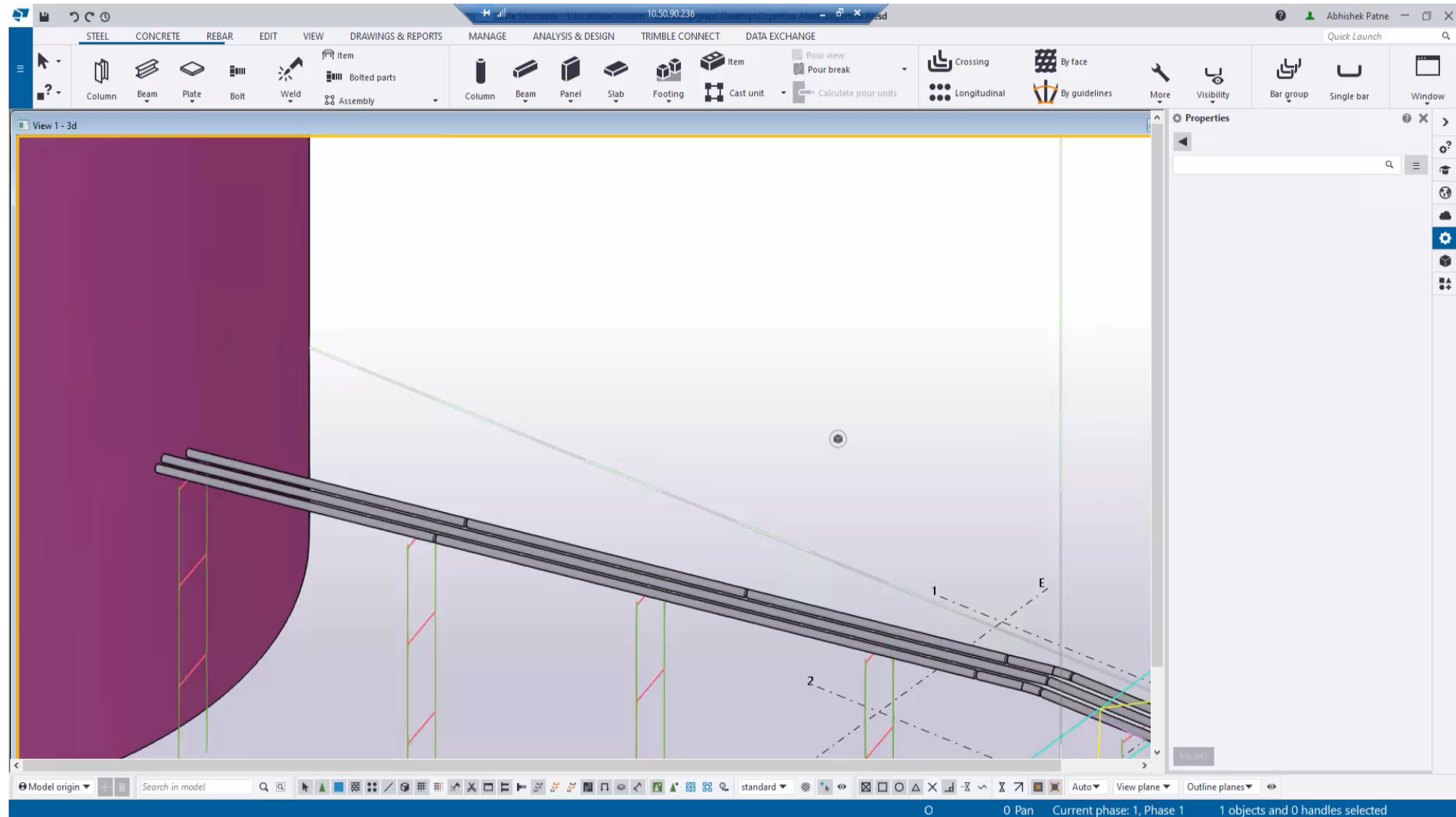
Revit - Inventor



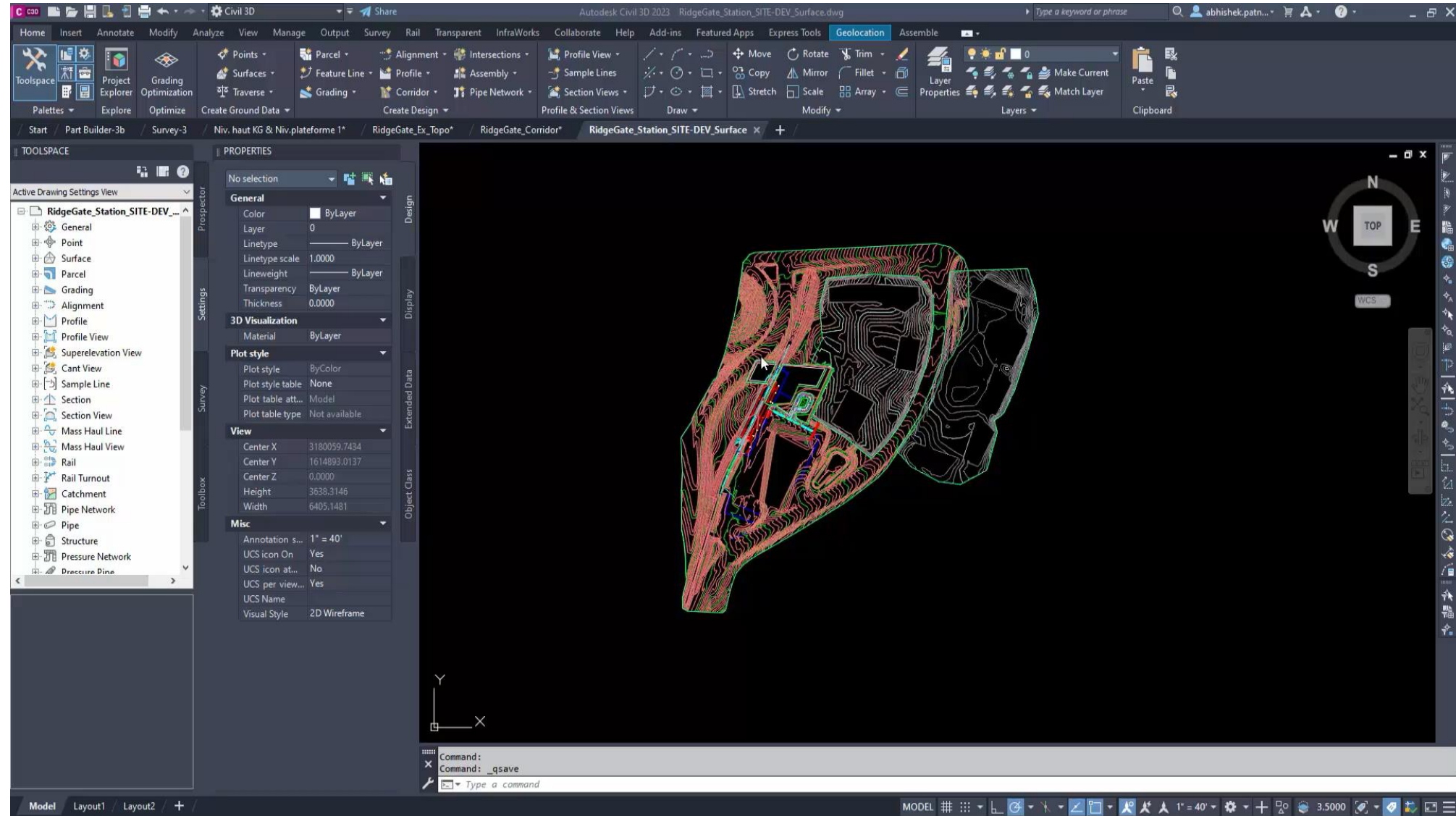
Inventor – Revit (+ Dynamo)



Revit - Tekla



Revit – Civil 3D

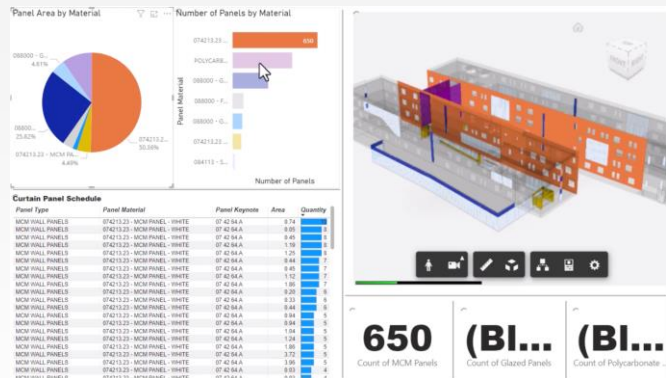


The image shows a modern building with a green facade and balconies filled with lush green plants and trees. The building is viewed from a low angle, looking up. The balconies are filled with various types of greenery, including trees and shrubs. The building's facade is a light green color. The image is split into two main sections by a white diagonal line. The top section shows the upper part of the building, and the bottom section shows the lower part. The text "Co dái?" is written in a large, bold, black font on the right side of the image.

Co dái?

Témata vývoje

6 PRACOVNÍCH POSTUPŮ



Adopce Data Exchange zákazníky
na projektech

Adopce a ekosystému

6 KONEKTORŮ



Nativní prvky, Obousměrná
metadata, Sdílené souřadnice,
Hierarchie modelů

Nativní a rozšiřitelné
pracovní postupy

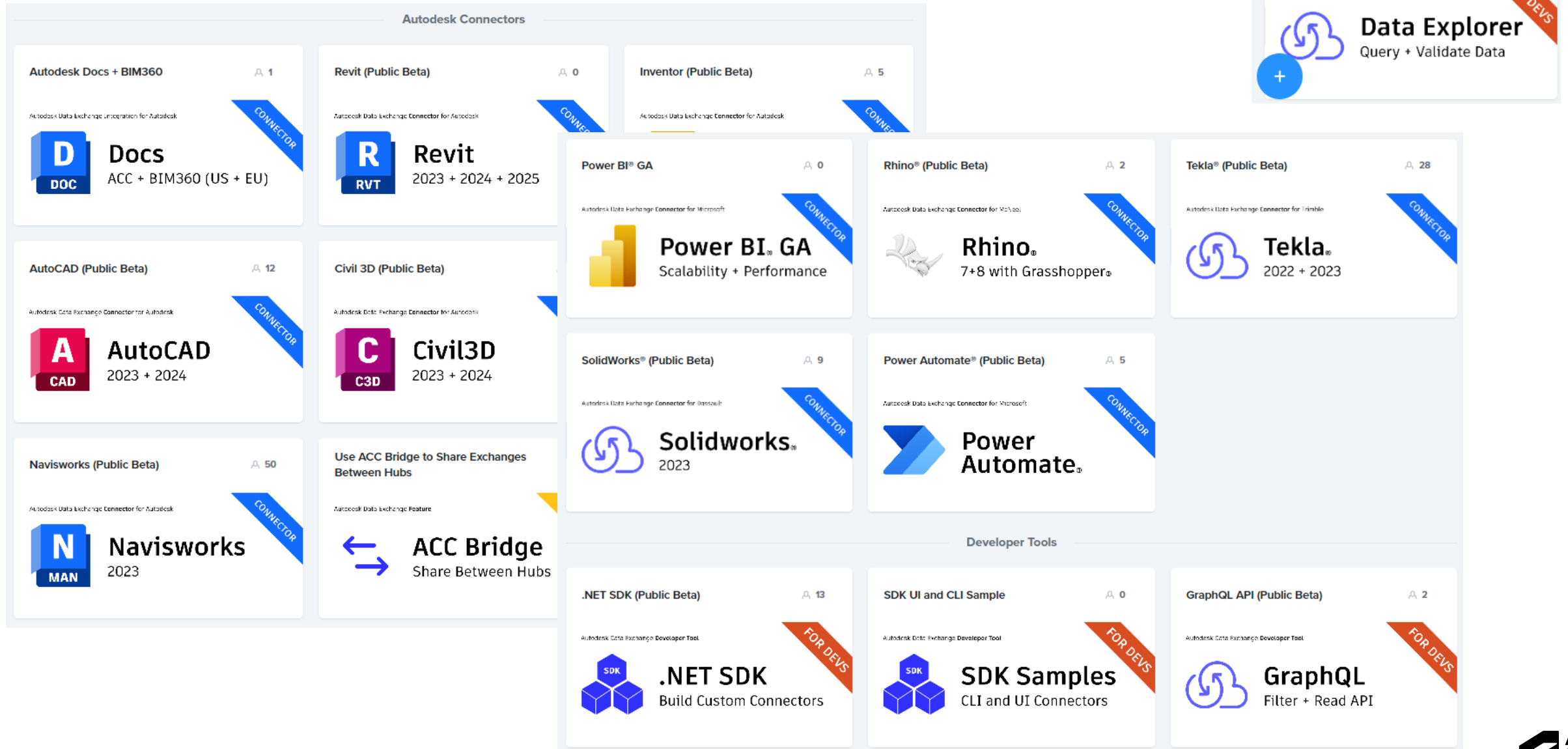
VLASTNÍ KONEKTORY



Custom objekty, Automatizované
zpracování

Vlastní data

Public Roadmap: Vydáno



Public Roadmap: Ve vývoji

IFC™ Import (Private Beta)

36

Autodesk Data Exchange Connector for Building Smart



IFC™ Import
2.x + 4.x

CONNECTOR

Features

Create an Exchange from ACC Viewer by filtering an AEC DM

0

Autodesk Data Exchange Feature



AEC DM
Create Exchange in Viewer

FEATURE

ACC Viewer Displays Properties

0

Autodesk Data Exchange Feature



ACC Viewer
Property Display

FEATURE

Control the insertion point of Data Exchanges with manual placement

0

Autodesk Data Exchange Feature



Placement
Manual Options

FEATURE

Developer Tools

Create Data Exchanges with API

0

Autodesk Data Exchange Developer Tool

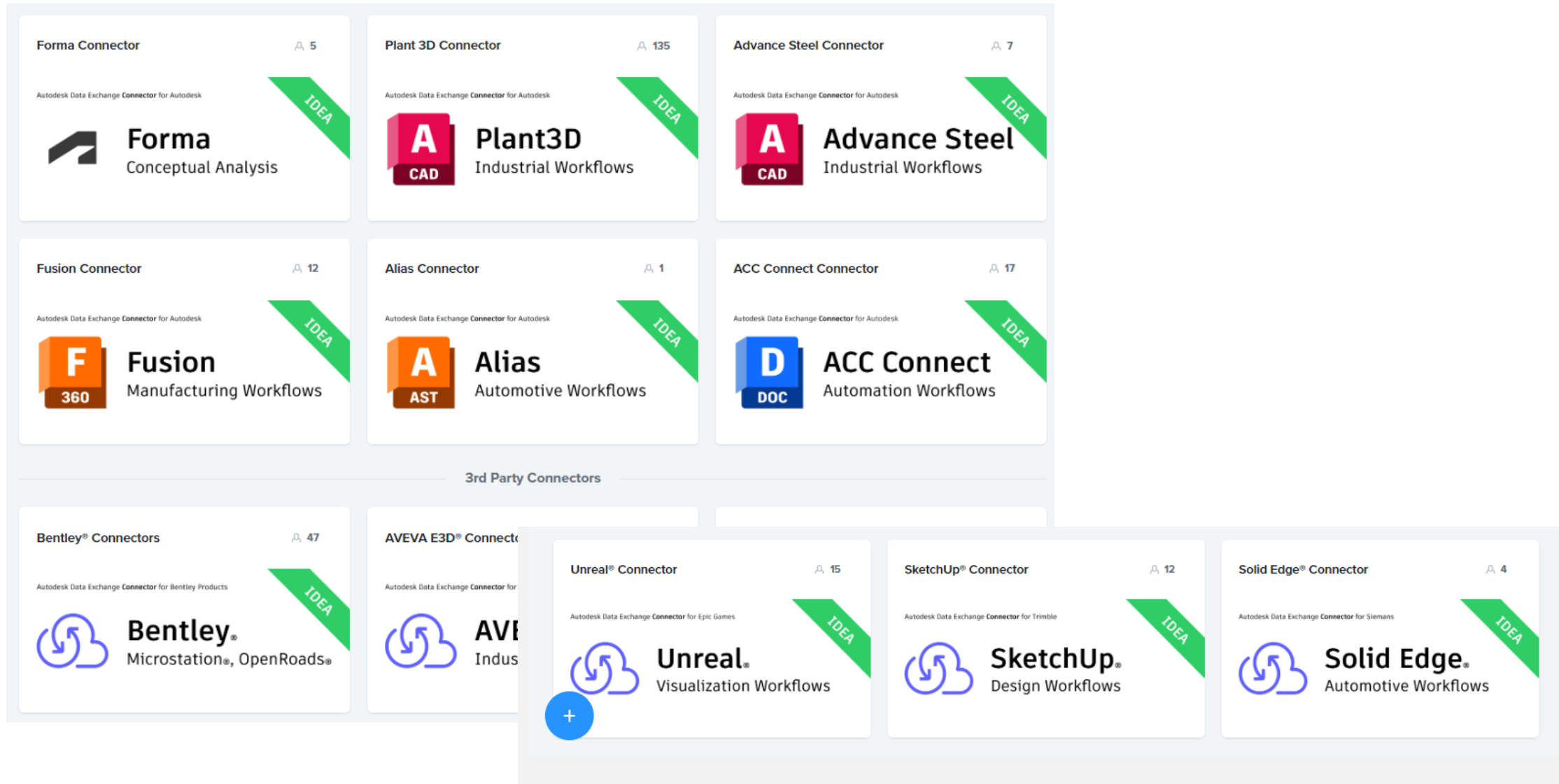


Automation
Create Exchanges w API

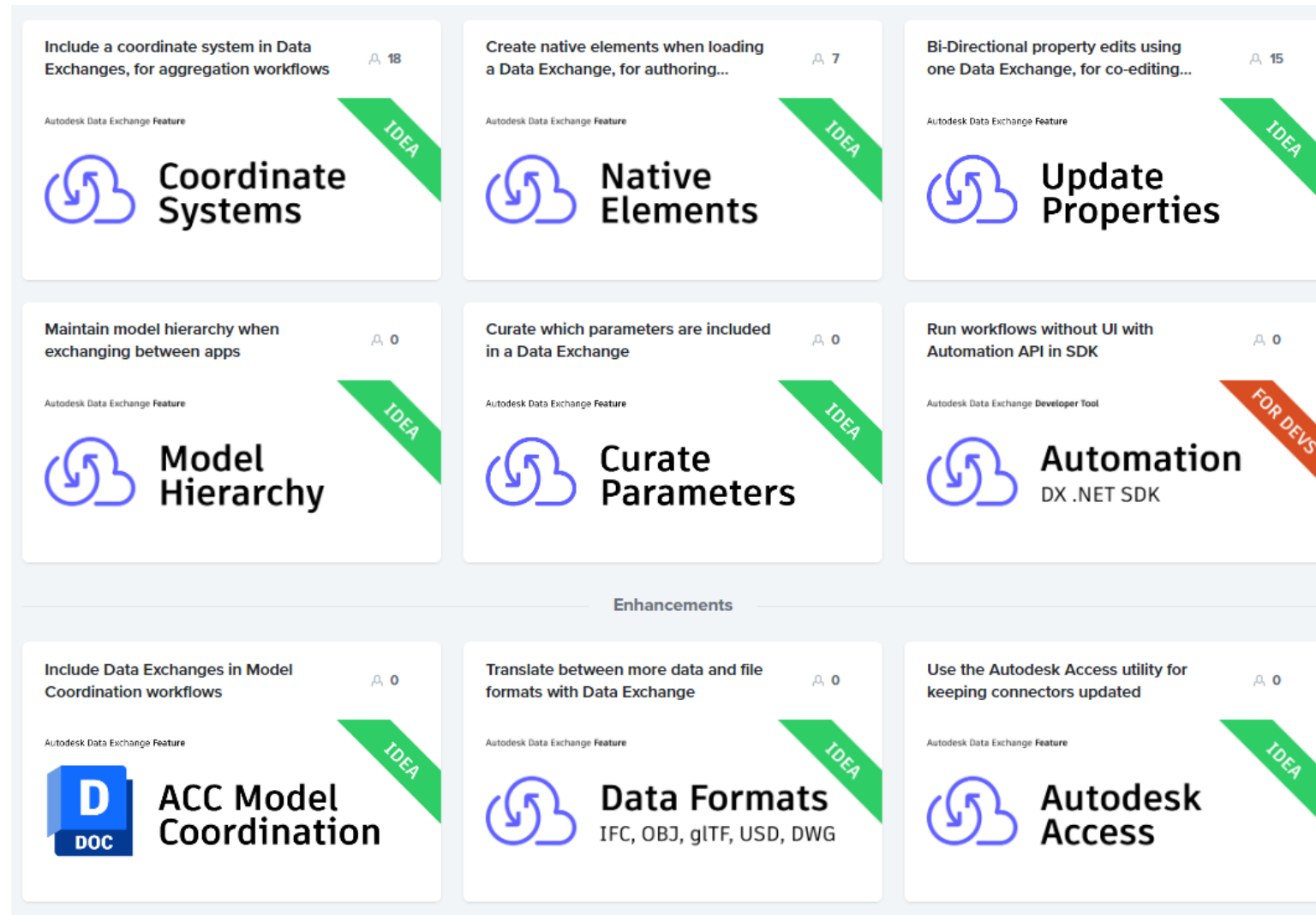
FOR DEVS

 AU
2023

Public Roadmap: Nápady na konektory



Public Roadmap: Nápady na funkce



Data Exchange veřejná Roadmapa



Data Exchange Public Roadmap

The background of the slide is split diagonally from the top-left to the bottom-right. The upper-left portion is black and features a complex pattern of glowing, overlapping red and orange lines that resemble light trails or stylized orbits. The lower-right portion is white and contains the main text.

Jak začít

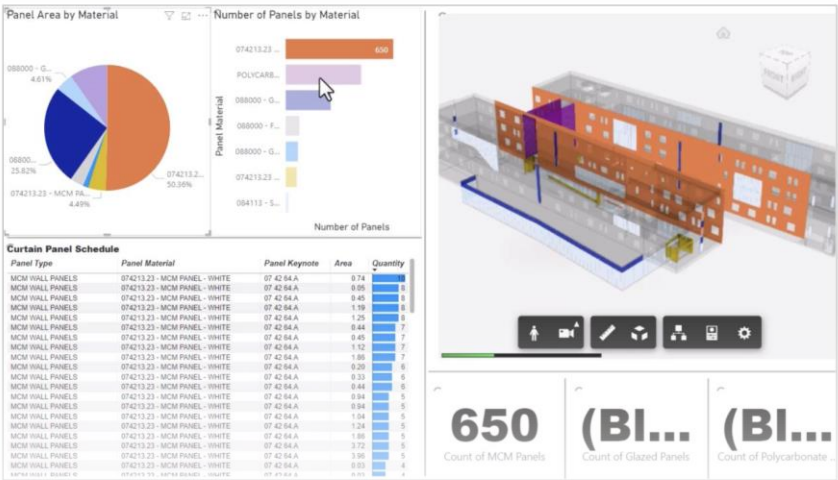
Začňte s Data Exchange

Autodesk Data Connectors for Power BI, Dynamo, and more...



Tobias Hathorn | FEBRUARY 12, 2024

4 MIN READ



With the Autodesk Data Connector for Power BI you can bring data to life with a 3D model viewer, and various tables, widgets, and charts – all associated to each other, and powered by live parameters coming from Revit and other design apps.

Data Exchange

Control, share, and access just the data you need in your app of choice.

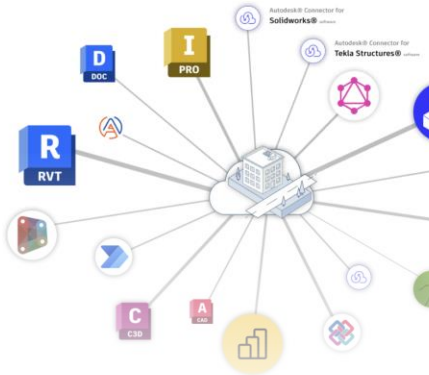
- Documentation
- See exchanges in action

New! Data Exchange API is now available in public beta.

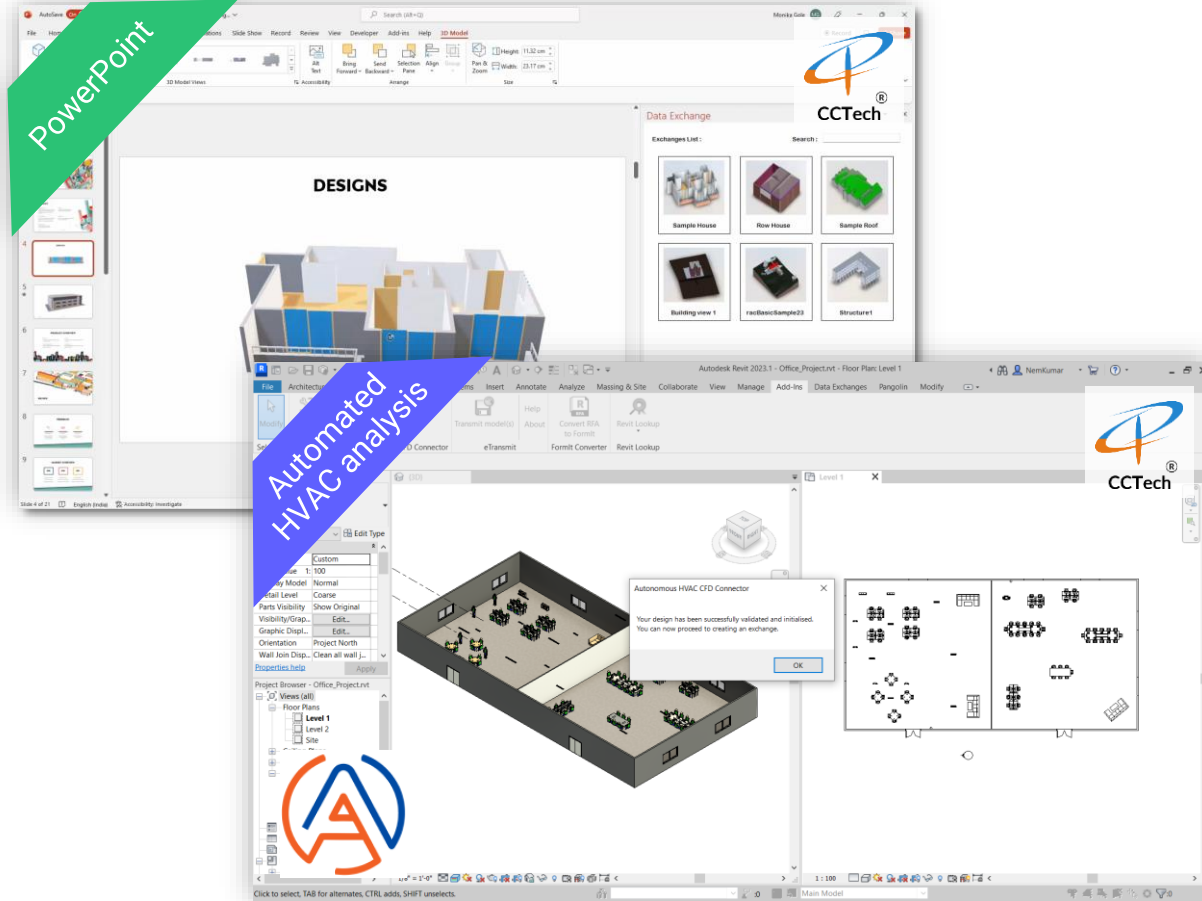
Data Exchange Ecosystem

Use Data Exchanges to share your design data across the apps your team works with every day – without the hassle of importing and exporting entire design models.

Create, update, and manage your exchanges through Autodesk Docs – for published Revit models – or with our app connectors for more direct sharing from your favorite design apps, including Revit, Rhino, and Inventor. Select just the data relevant to the task, set permissions to manage access, and share away!



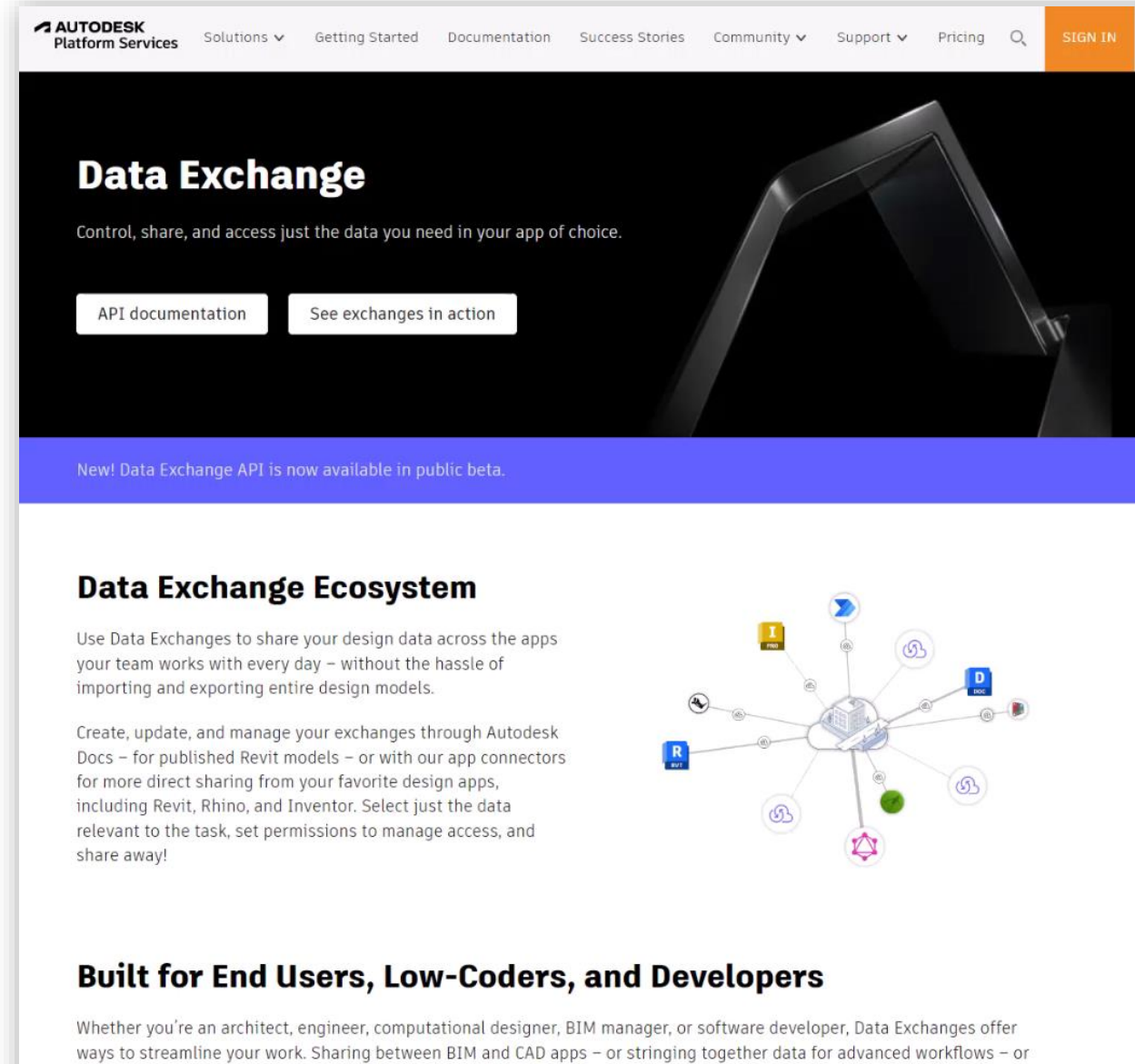
Využijte Data Exchange API + SDK



	Data Exchange Connector for Solidworks Solidworks Connector allows you to create and share Data Exchanges and consume...	POWERED BY 	☆☆☆☆☆ 0	Free
	Data Exchange - Inventor@, Early Access The Data Exchange for Inventor@ Connector allows you to create and share Data...	POWERED BY 	☆☆☆☆☆ 0	Free
	Data Exchange - Civil 3D@, Early Access Data Exchange for Civil 3D@ Connector allows you to create and share Data...	POWERED BY 	☆☆☆☆☆ 0	Free
	Data Exchange for Tekla Structures@, Early Access Tekla Connector allows you to create and share Data Exchanges and consume Data...	POWERED BY 	☆☆☆☆☆ 0	Free
	Data Exchange for Grasshopper@, Early Access Data Exchange - Grasshopper Connector can share the subset of information from...	POWERED BY 	☆☆☆☆☆ 0	Free
	Data Exchange for AutoCAD@, Early Access Autodesk@ AutoCAD@ Connector allows you to create and share Data Exchanges an...	POWERED BY 	☆☆☆☆☆ 0	Free
	Autodesk Data Connector for Power BI, Early Access Autodesk@ Data Data Connector for Power BI@ allows you to load Data Exchanges...	POWERED BY 	☆☆☆☆☆ 0	Free
	Data Exchange for Revit@ 2024, Early Access Autodesk@ Revit@ Data Exchange connector enables our customers to load a sube...	POWERED BY 	☆☆☆☆☆ 0	Free
	Data Exchange for Dynamo@, Early Access	POWERED BY 	☆☆☆☆☆ 0	

Začněte s Data Exchange

- **App Store**
 - [Download the app connectors](#)
- **Více**
 - [Data Exchange website](#)
 - [Public roadmap](#)
 - [Blog posts](#)
 - [Webinar – Revit & Rhino Connectors](#)
- **Kontaktujte Autodesk**
 - [Reach out on the Community Forum](#)
 - data.exchange.support@autodesk.com



The screenshot shows the Autodesk Data Exchange website. The header includes the Autodesk Platform Services logo and navigation links: Solutions, Getting Started, Documentation, Success Stories, Community, Support, Pricing, and a Search icon. A 'SIGN IN' button is in the top right. The main hero section has a dark background with a computer monitor image. It features the title 'Data Exchange' and the tagline 'Control, share, and access just the data you need in your app of choice.' Below this are two buttons: 'API documentation' and 'See exchanges in action'. A blue banner below the hero section states 'New! Data Exchange API is now available in public beta.' The 'Data Exchange Ecosystem' section describes how to use Data Exchanges to share design data across apps like Revit, Rhino, and Inventor. It includes a diagram showing a central cloud icon connected to various application icons (Revit, Rhino, Inventor, etc.). The 'Built for End Users, Low-Coders, and Developers' section mentions that Data Exchanges offer ways to streamline work by sharing between BIM and CAD apps or stringing together data for advanced workflows.

AUTODESK
Platform Services

Solutions ▾ Getting Started Documentation Success Stories Community ▾ Support ▾ Pricing 🔍 **SIGN IN**

Data Exchange

Control, share, and access just the data you need in your app of choice.

[API documentation](#) [See exchanges in action](#)

New! Data Exchange API is now available in public beta.

Data Exchange Ecosystem

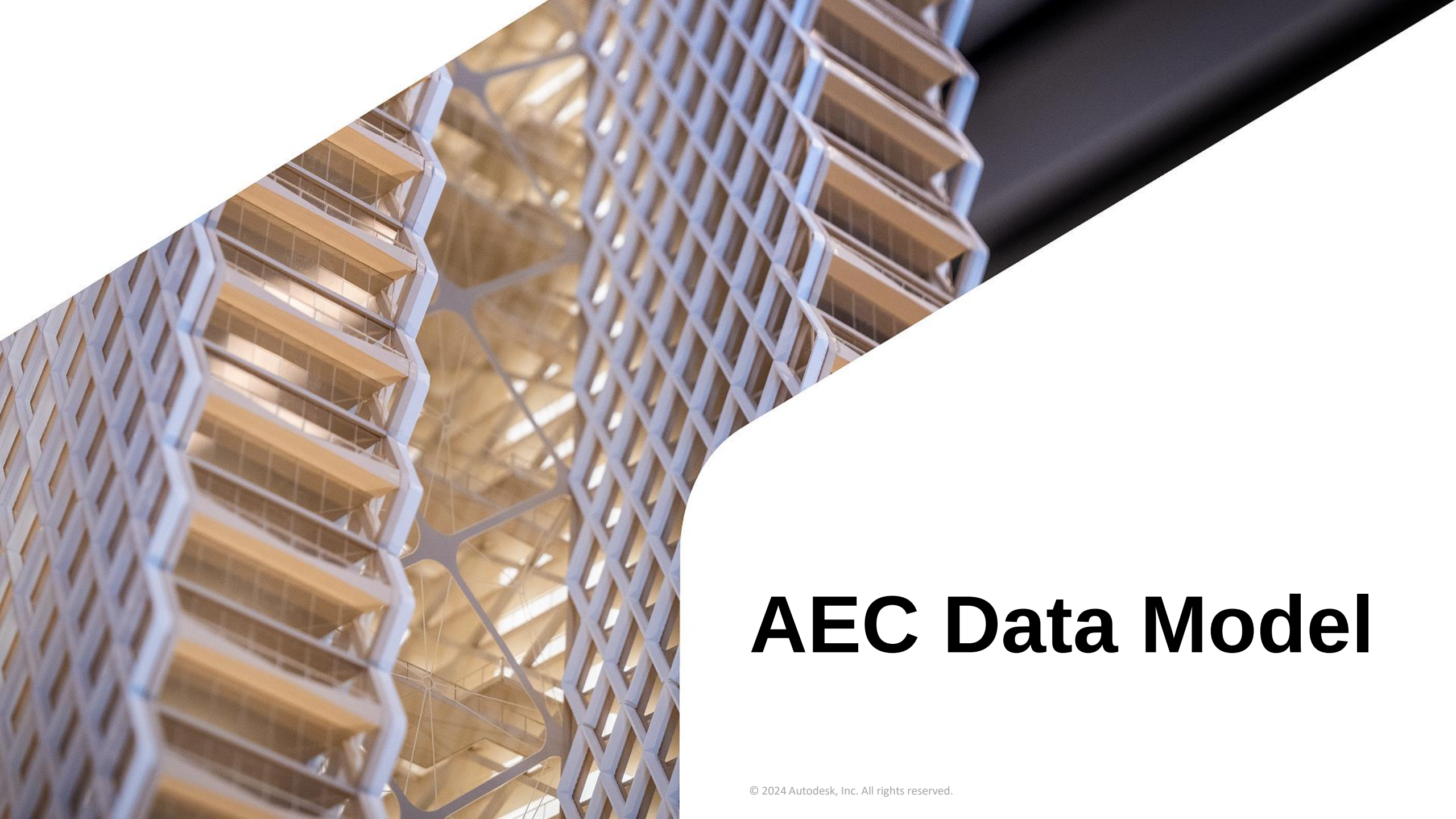
Use Data Exchanges to share your design data across the apps your team works with every day – without the hassle of importing and exporting entire design models.

Create, update, and manage your exchanges through Autodesk Docs – for published Revit models – or with our app connectors for more direct sharing from your favorite design apps, including Revit, Rhino, and Inventor. Select just the data relevant to the task, set permissions to manage access, and share away!



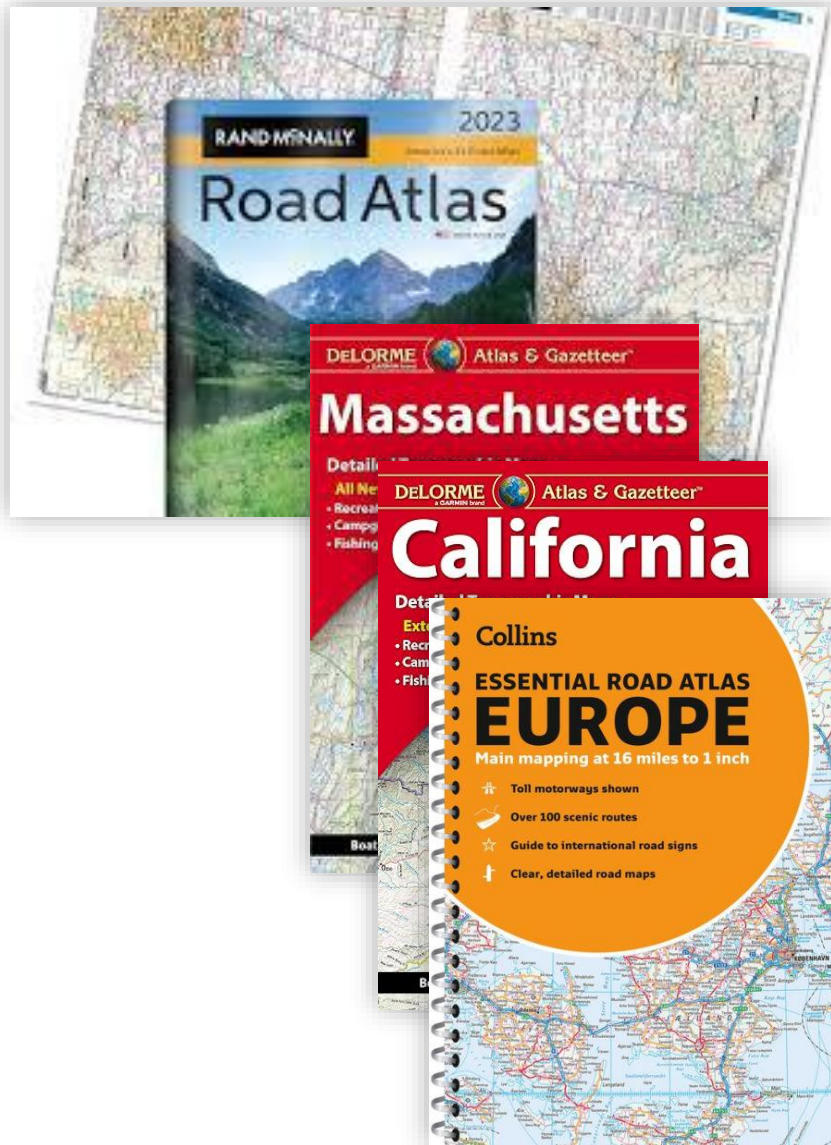
Built for End Users, Low-Coders, and Developers

Whether you're an architect, engineer, computational designer, BIM manager, or software developer, Data Exchanges offer ways to streamline your work. Sharing between BIM and CAD apps – or stringing together data for advanced workflows – or

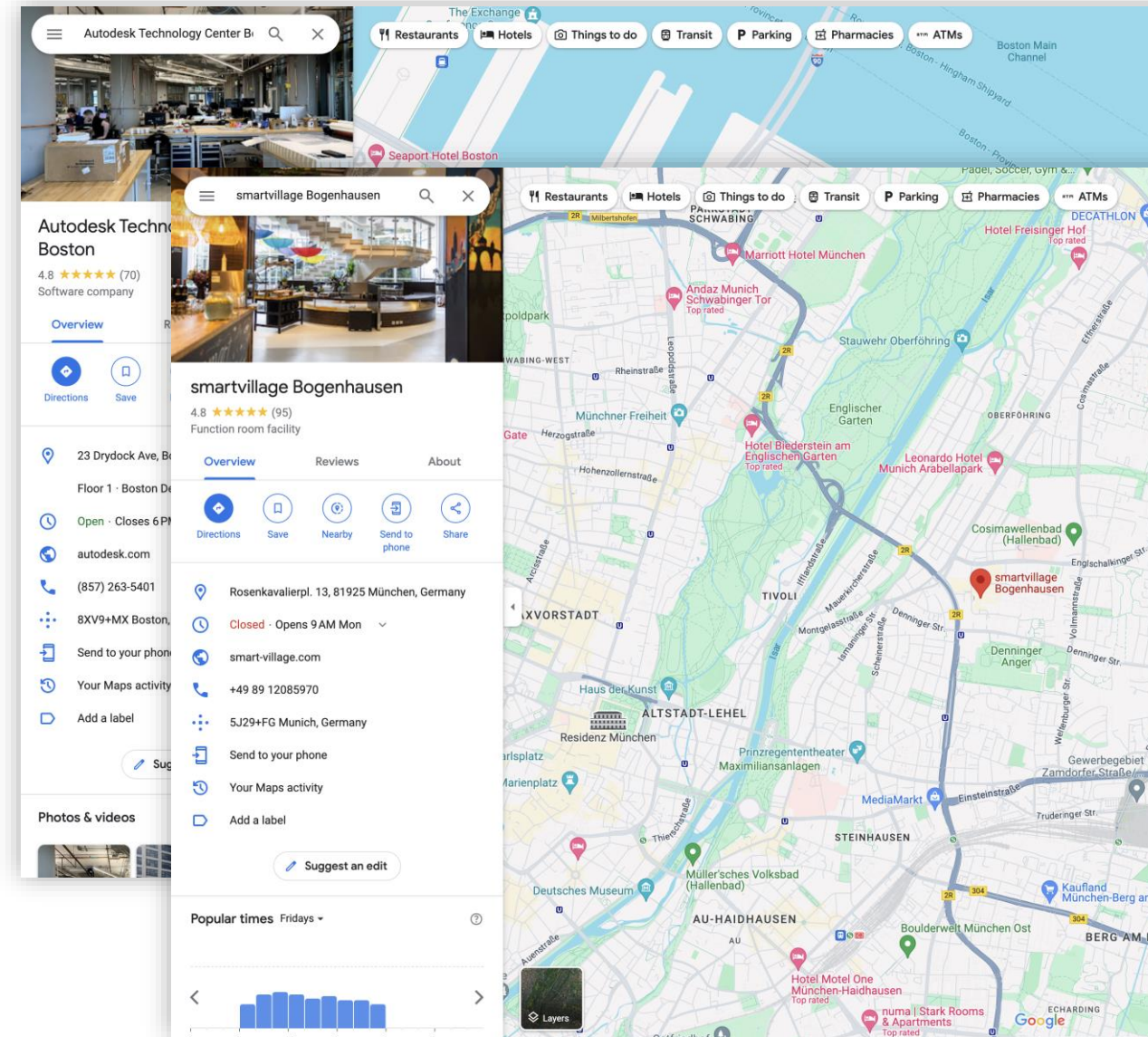


AEC Data Model

Soubory



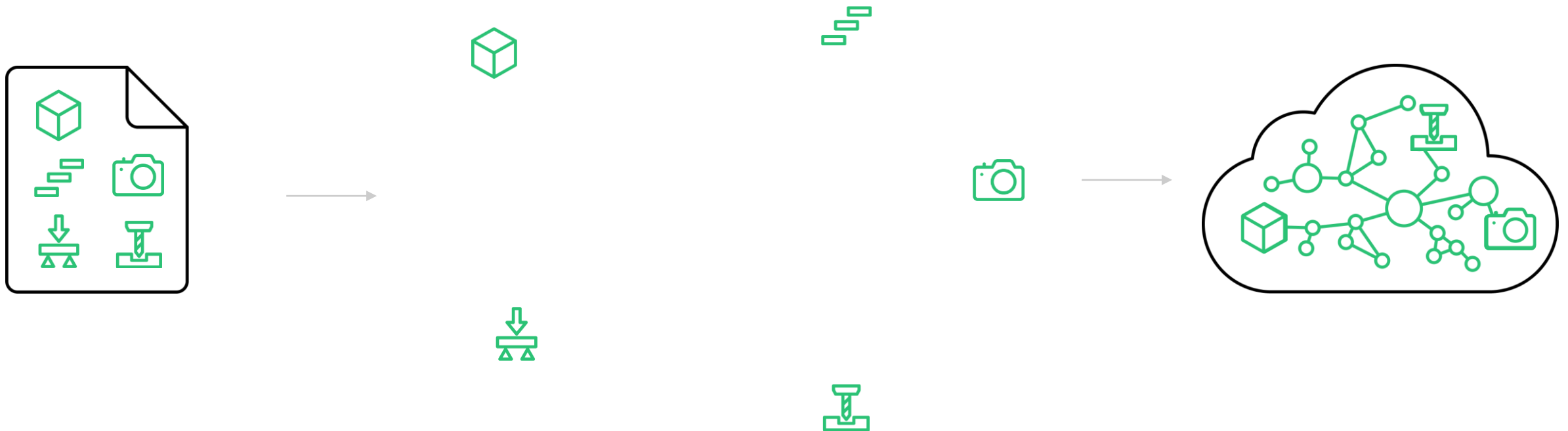
Autodesk Data Model



Co Autodesk Data Model přináší

Rozpadne soubory na menší, smysluplná data

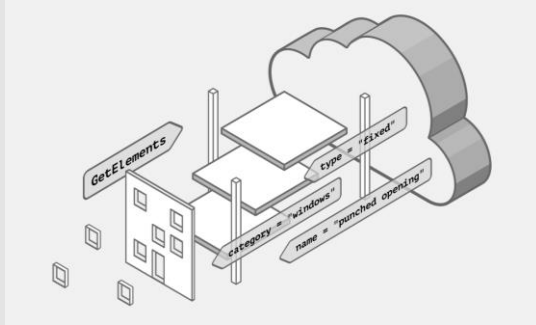
Autodesk Data Model je databáze, která odemyká data uvězněná ve vlastních souborech, spravuje je v cloudu a umožňuje k nim snadno a bezpečně přistupovat.



Přístup do Data modelu

Vhodné pro nevývojáře

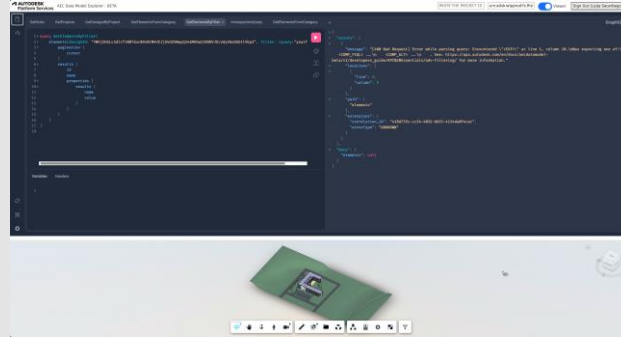
API



AEC Data Model Explorer – BETA

[Overview](#) | [AEC Data Model API \(Beta\)](#) |
[Developer Guide](#)

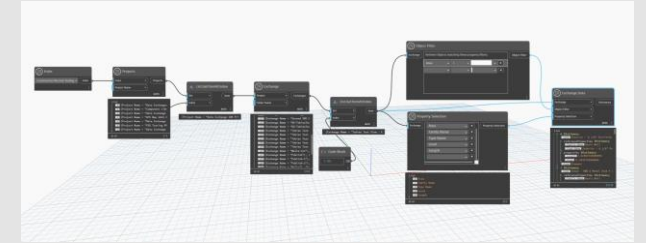
Průzkumník



Průzkumník AEC Data Modelu
(GraphQL) – BETA

[Step by Step Tutorial](#)

Dynamo



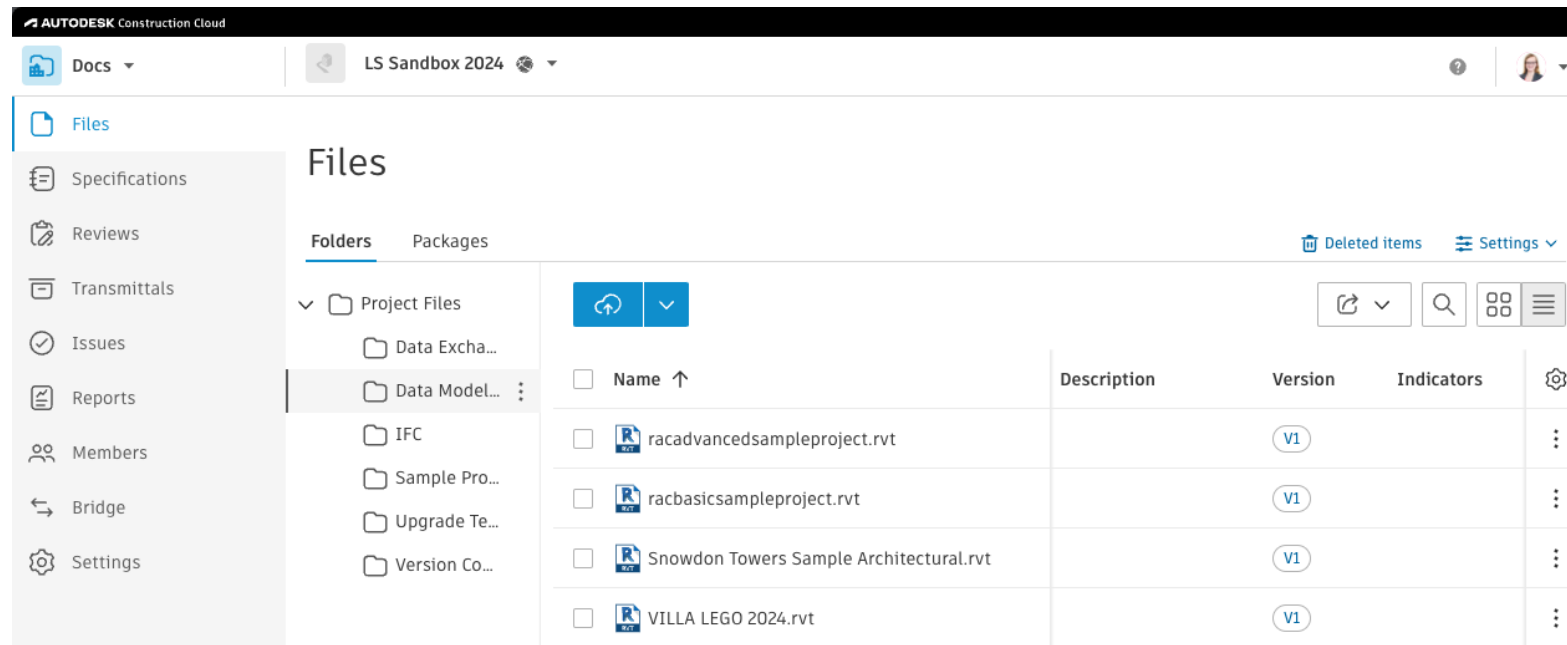
Autodesk Data Connector pro Dynamo
(AECDM + Data Exchange) – BETA

[Step by Step Tutorial](#)

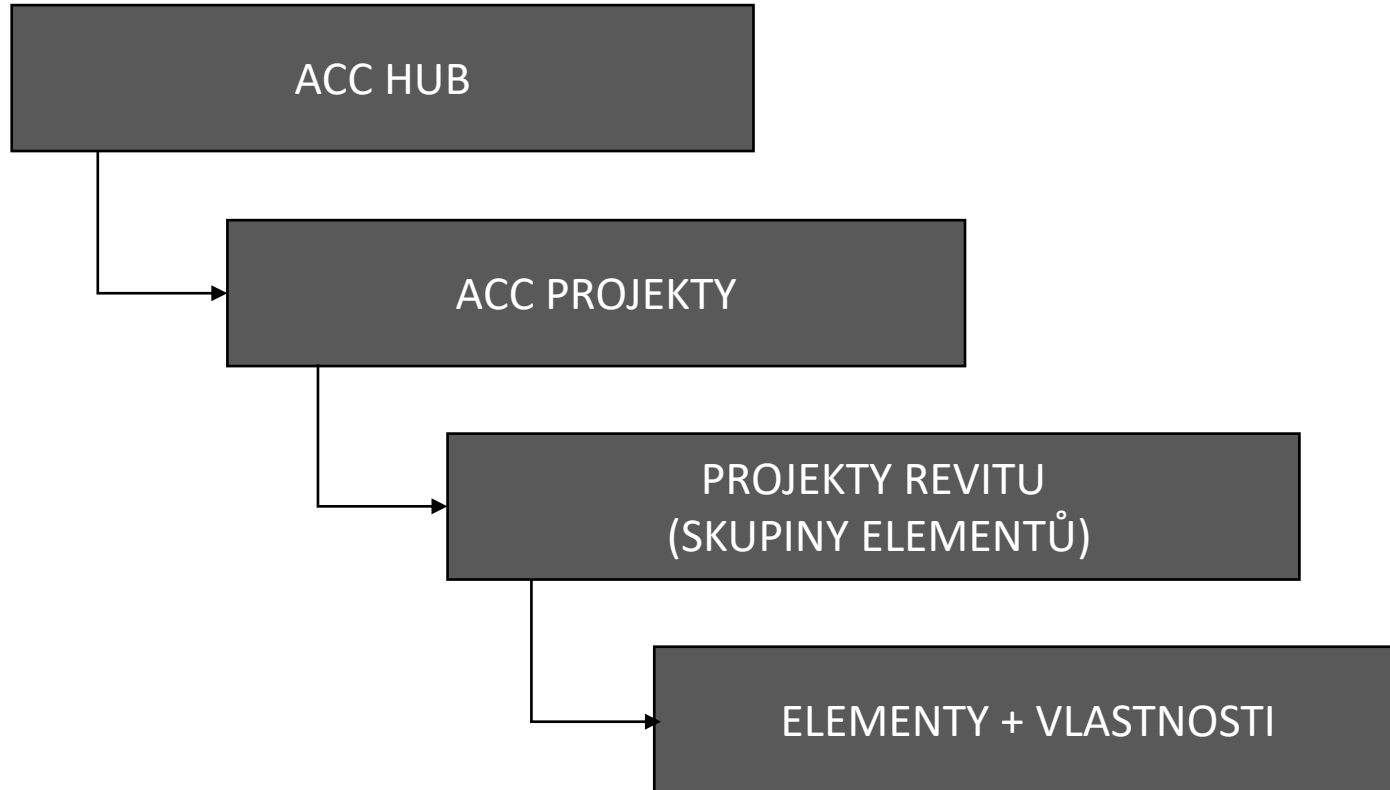
Průzkumník AEC Data Modelu

Nahrání modelu

- Nahrajte Revit 2024+ do Autodesk Docs
- AEC DM automaticky extrahuje data (může trvat i několik hodin)
- AEC DM není po extrakci viditelný



Hierarchie dat



Použijte filtry pro načtení pouze určitých prvků na základě jejich vlastností a/nebo pouze konkrétních vlastností

The image shows two screenshots of the Autodesk Platform Services interface. The top screenshot is the 'AEC Data Model Explorer' with a search bar containing 'fileVersionUrn here', a 'Viewer' toggle, and a 'Voyager' button. A red arrow points from the 'Voyager' button to the bottom screenshot. The bottom screenshot is the 'AEC Data Model Voyager' interface, showing a 'Type List' on the left and a complex graph visualization on the right. The graph shows various data types and their relationships, with a 'Sign Out (Lejla Secebegovic)' button in the top right corner.

Průzkumník AEC Data Modelu

Extrakce dat

The screenshot displays the Autodesk AEC Data Model Explorer interface. At the top, the header includes the Autodesk logo, 'Platform Services', and 'AEC Data Model Explorer'. On the right, there is a 'fileVersionUrn here' input field, a 'Viewer' toggle, a 'Voyager' button, a help icon, and a 'Sign Out (Lejla Secerbegovic)' button.

The main workspace is divided into two panes. The left pane shows a GraphQL query editor with the following code:

```
1 # Task 1 - Pick a Hub
2 query GetHubs {
3   hubs {
4     pagination {
5       cursor
6     }
7     results {
8       name
9       id
10    }
11  }
12 }
```

The right pane displays the JSON response of the query:

```
{
  "data": {
    "hubs": {
      "pagination": {
        "cursor": null
      },
      "results": [
        {
          "name": "Autodesk EMEA TS",
          "id": "urn:adsk.ace:prod.scope:70cdeebe-78da-4d6d-b4af-80cdc2b986bf"
        },
        {
          "name": "Construction Records Testing",
          "id": "urn:adsk.ace:prod.scope:130b273c-ae61-42b7-8e31-a06e8e7524e1"
        },
        {
          "name": "TechSales BimLab ",
          "id": "urn:adsk.ace:prod.scope:6a5aaa08-23b7-4c02-a8aa-8d7a146c838e"
        },
        {
          "name": "TS Construction",
          "id": "urn:adsk.ace:prod.scope:a480bc83-9db5-4679-a0dc-8b4580b5e0de"
        }
      ]
    }
  }
}
```

Below the query editor, there are tabs for 'Variables' and 'Headers'. The 'Variables' tab is active, showing the following variables:

```
1 {
2   "region": "EMEA"
3 }
```

At the bottom left, there is a red box containing the text 'Definice EMEA serveru'. A red arrow points from the 'id' field of the 'TechSales BimLab ' hub in the JSON response to the right side of the image.

Handwritten red text 'Zkopíruj Hub ID' is visible next to the 'id' field of the 'TechSales BimLab ' hub.

Průzkumník AEC Data Modelu

Extrakce dat

The screenshot displays the Autodesk AEC Data Model Explorer interface. At the top, the header includes the Autodesk logo, 'Platform Services', and 'AEC Data Model Explorer'. On the right, there are input fields for 'fileVersionUrn here', a 'Viewer' toggle, a 'Voyager' button, a help icon, and a 'Sign Out (Lejla Secerbegovic)' button.

The main interface is divided into two panels. The left panel shows a GraphQL query editor with the following code:

```
1 # Task 2 - Pick Projects
2 query GetProjects($hubId: ID!) {
3   projects(hubId: $hubId) {
4     pagination {
5       cursor
6     }
7     results {
8       id
9       name
10      alternativeIdentifiers {
11        dataManagementAPIProjectId
12      }
13    }
14  }
15 }
```

Below the query editor, there are tabs for 'Variables' and 'Headers'. The 'Variables' tab is active, showing the following variable definition:

```
1 {
2   "hubId": "urn:adsk.ace:prod.scope:6a5aaa08-23b7-4c02-a8aa-8d7a146c838e"
3 }
```

The right panel displays the JSON response of the query. It lists several project entries, each with an 'id', 'name', and 'alternativeIdentifiers' object containing a 'dataManagementAPIProjectId'. A red arrow points to the 'id' field of the third project entry, which is highlighted in blue. A red text annotation 'Zkopíruj Project ID' is placed next to the 'id' field.

Red arrows from the left and right margins point to the 'Variables' tab and the highlighted project ID, respectively.

Průzkumník AEC Data Modelu

Extrakce dat

The screenshot displays the Autodesk AEC Data Model Explorer interface. At the top, the header includes the Autodesk Platform Services logo, the title 'AEC Data Model Explorer', and a search bar containing 'urn:adsk.wipprod.fs.file:'. To the right of the search bar are buttons for 'Viewer', 'Voyager', and a 'Sign Out (Lejla Secerbegovic)' link.

The main interface is divided into two panels. The left panel, titled 'GetElementGroupsByProject', contains a GraphQL query:

```
1 # Task 3 - Retrieve elementgroups from project
2 query GetElementGroupsByProject($projectId: ID!) {
3   elementGroupsByProject(projectId: $projectId) {
4     pagination {
5       cursor
6     }
7     results {
8       name
9       id
10      alternativeIdentifiers {
11        fileUrn
12        fileVersionUrn
13      }
14    }
15  }
16 }
```

Below the query, the 'Variables' section shows:

```
1 {
2   "projectId": "urn:adsk.workspace:prod.project:d6b31d26-4aa2-413a-bd5c-ed5a25a83135"
3 }
```

The right panel displays the JSON response of the query. It lists several element groups, including 'racbasicsampleproject.rvt' and 'racadvancedsampleproject.rvt'. A red arrow points from the 'fileUrn' field in the JSON response to the search bar at the top, with the text 'Zkopíruj Revit model ID' (Copy Revit model ID) written in red. Another red arrow points from the 'projectId' variable in the query to the search bar.

At the bottom of the interface, there is a 3D visualization area showing a green building model on a white base. To the right of the model is a navigation cube with 'TOP', 'FRONT', and 'RIGHT' views. Below the 3D area is a toolbar with various icons for navigation and manipulation.

Průzkumník AEC Data Modelu

Extrakce dat

AUTODESK Platform Services AEC Data Model Explorer

urn:adsk.wipprod:fs.file Viewer Voyager Sign Out (Lejla Secerbegovic)

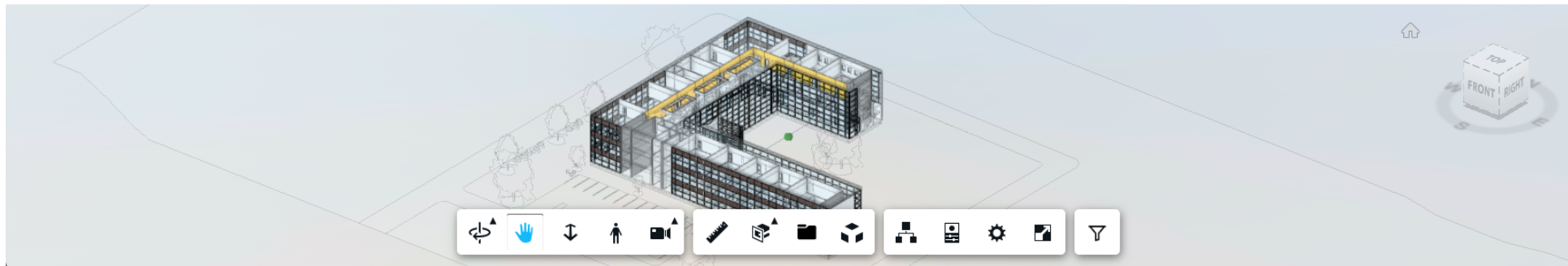
GetHubs GetProjects GetElementGroupsByProject **GetElementsFromCategory** GetElementsByFilter GetElementsByFilter GetElementsByFilter + GraphQL

```
1 # Task 4 - Get Elements within an ElementGroup using a filter
2 query GetElementsFromCategory($elementGroupId: ID!, $propertyFilter: String!) {
3   elementsByElementGroup(elementGroupId: $elementGroupId, filter: {query:$pro
4     pagination {
5       cursor
6     }
7     results {
8       id
9       name
10      properties {
11        results {
12          name
13          value
14          definition {
15            units{
16
```

Variables Headers

```
1 {
2   "elementGroupId": "YVWjZH5Lc3dLcTLNNTduc09zNLM4VEJjSVdZX0wyQ342MXVwZ1R0RVJXLVdyVGxDU
3   "propertyFilter": "property.name.category=Walls"
4 }
```

```
{
  "data": {
    "elementsByElementGroup": {
      "pagination": {
        "cursor": "Y3Vyc341MH41MA"
      },
      "results": [
        {
          "id":
          "YVWjZX5Lc3dLcTLNNTduc09zNLM4VEJjSVdZX0wyQ342MXVwZ1R0RVJXLVdyVGxDUgTlVkp3XzE0ZQ",
          "name": "Exterior Curtain Wall",
          "properties": {
            "results": [
              {
                "name": "Description",
                "value": null,
                "definition": {
                  "units": null
                }
              },
              {
                "name": "Manufacturer",
                "value": null,
                "definition": {
                  "units": null
                }
              }
            ]
          }
        }
      ]
    }
  }
}
```



Průzkumník AEC Data Modelu

Extrakce dat

AUTODESK Platform Services AEC Data Model Explorer

fileVersionUrn here ☐ Viewer ☒ Voyager

GetHubs GetProjects GetElementGroupsByProject GetElementsFromCategory GetElementsByFilter GetElementsByFilter GetElementsFromCategory x + GraphQL

```
1 # Task 4 - Get Elements within an ElementGroup using a filter
2 query GetElementsFromCategory($elementGroupId: ID!, $propertyFilter: String!) {
3   elementsByElementGroup(elementGroupId: $elementGroupId,
4     filter: {query:$propertyFilter, pagination:{limit:500}} {
5     pagination {
6       cursor
7       pageSize
8     }
9     results {
10      id
11      name
12      properties (filter: {names: ["Family Name", "Element Name", "Mark"]}) {
13        results {
14          name
15          value
16        }
17      }
18    }
19  }
20 }
21 }
```

Zvětšete velikost seznamu prvků (výchozí: 50, max.: 500)

včetně všech dveří (máme 101)

Získej pouze tyto vlastnosti

Variables Headers

```
1 {
2   "elementGroupId": "YVvjZH5Lc3dLcTLNNTduc09zNlM4VEJjSVdZX0wyQ342MXVwZ1R0RVJXJLVdyVGxkDUGtLVkp3",
3   "propertyFilter": "property.name.category=Doors and 'property.name.Element Context'=Instance"
4 }
```

Získej všechny dveře

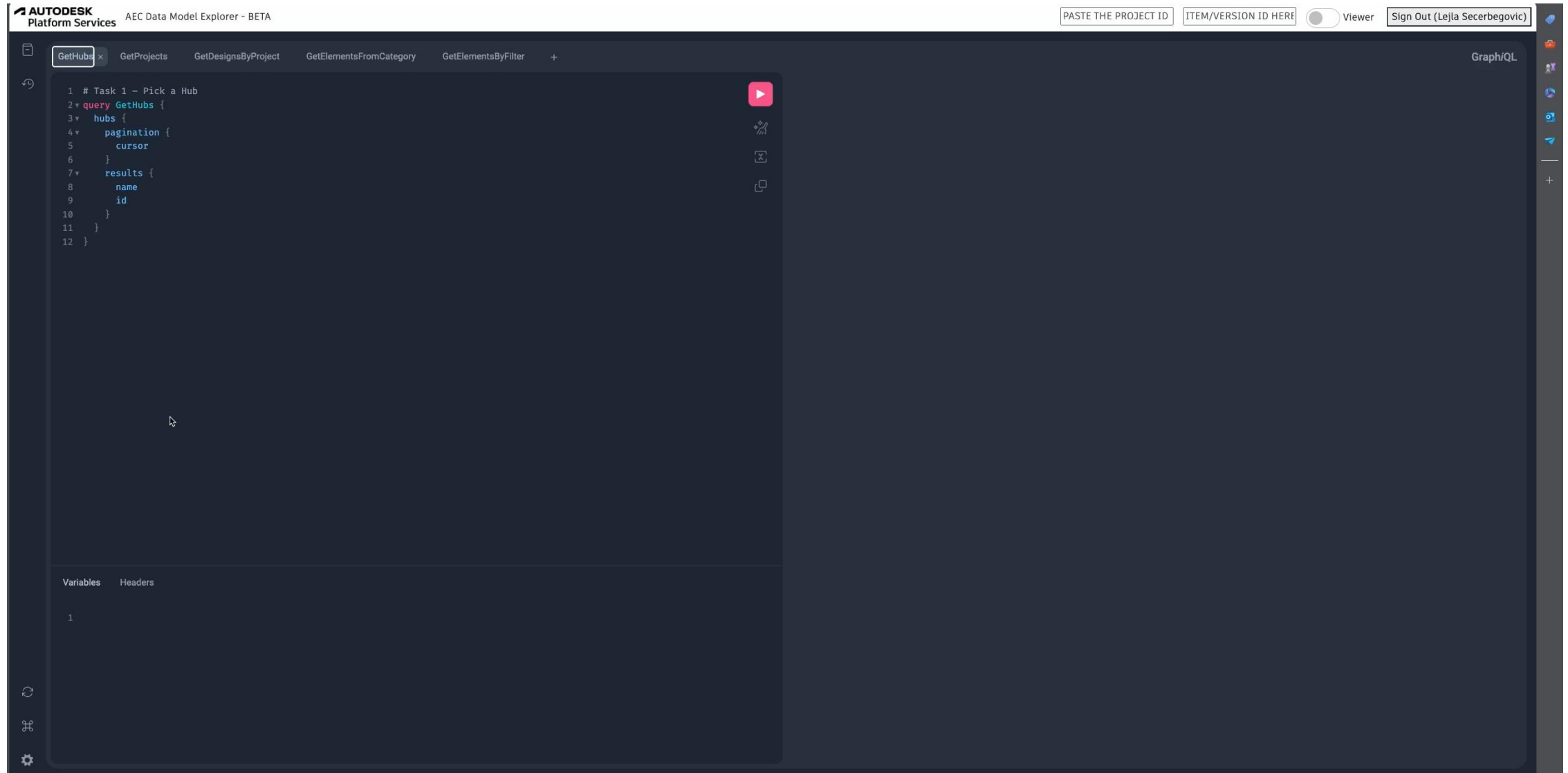
Získej pouze instance dveří umístěné v projektu

```
{
  "data": {
    "elementsByElementGroup": {
      "pagination": {
        "cursor": null,
        "pageSize": 101
      },
      "results": [
        {
          "id": "YVvjZX5Lc3dLcTLNNTduc09zNlM4VEJjSVdZX0wyQ342MXVwZ1R0RVJXJLVdyVGxkDUGtLVkp3XzIzYTRm",
          "name": "0915 x 2134mm",
          "properties": {
            "results": [
              {
                "name": "Mark",
                "value": "122"
              },
              {
                "name": "Family Name",
                "value": "M_Single-Flush-Dbl Acting"
              },
              {
                "name": "Element Name",
                "value": "0915 x 2134mm"
              }
            ]
          }
        },
        {
          "id": "YVvjZX5Lc3dLcTLNNTduc09zNlM4VEJjSVdZX0wyQ342MXVwZ1R0RVJXJLVdyVGxkDUGtLVkp3XzIzYWFl",
          "name": "0915 x 2134mm",
          "properties": {
            "results": [
              {
                "name": "Mark",
                "value": "124"
              },
              {
                "name": "Family Name",
                "value": "M_Single-Flush"
              },
              {
                "name": "Element Name",
                "value": "0915 x 2134mm"
              }
            ]
          }
        }
      ]
    }
  }
}
```

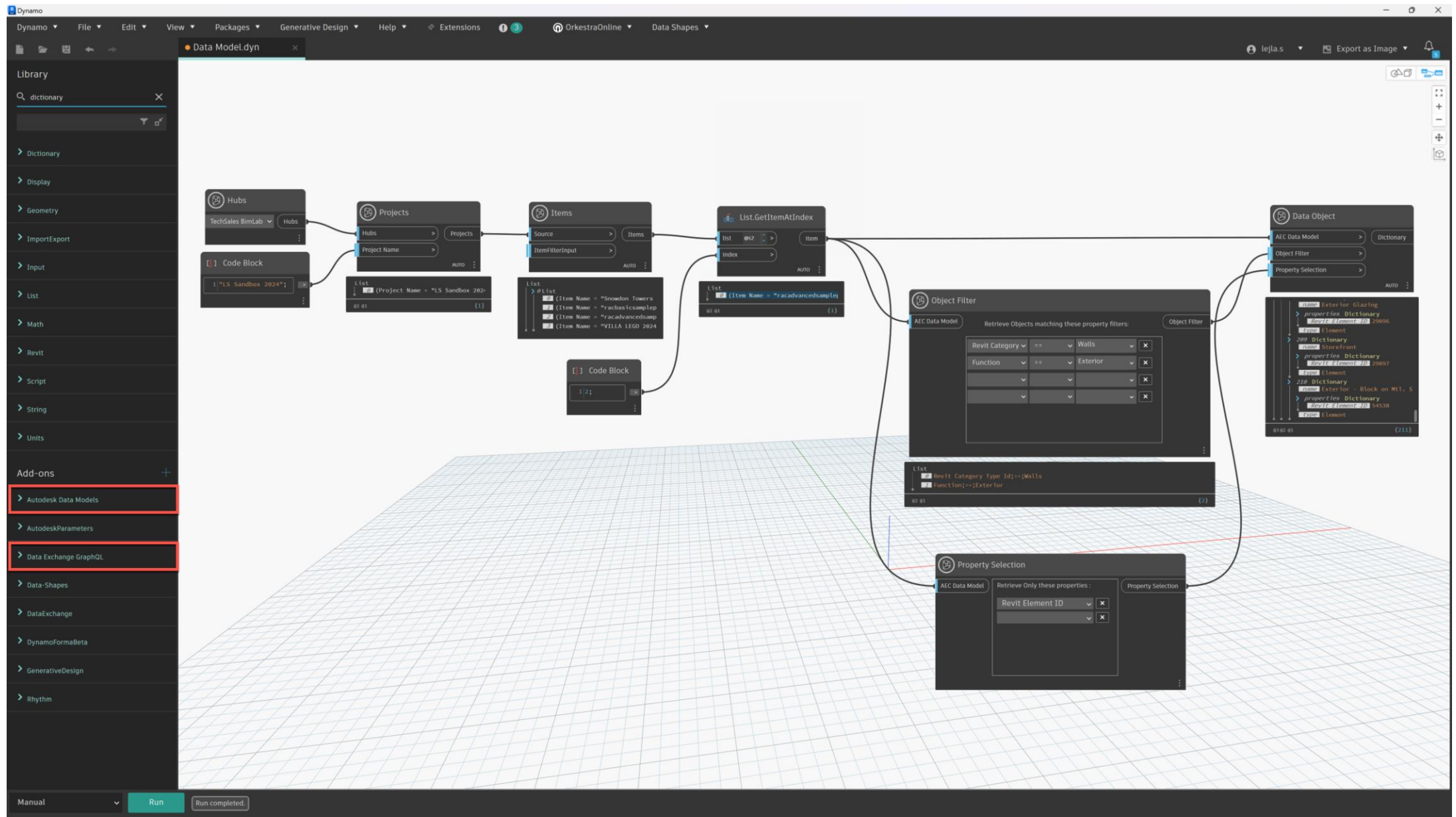
Výstup: Seznam dveří ve formátu JSON
→ Načtěte tento soubor pomocí Power Query v aplikaci Microsoft Excel nebo PowerBI pro QA/QC a analýzu dat

Příklad Průzkumníka modelu

<https://aecdatamodel-explorer.autodesk.io/>



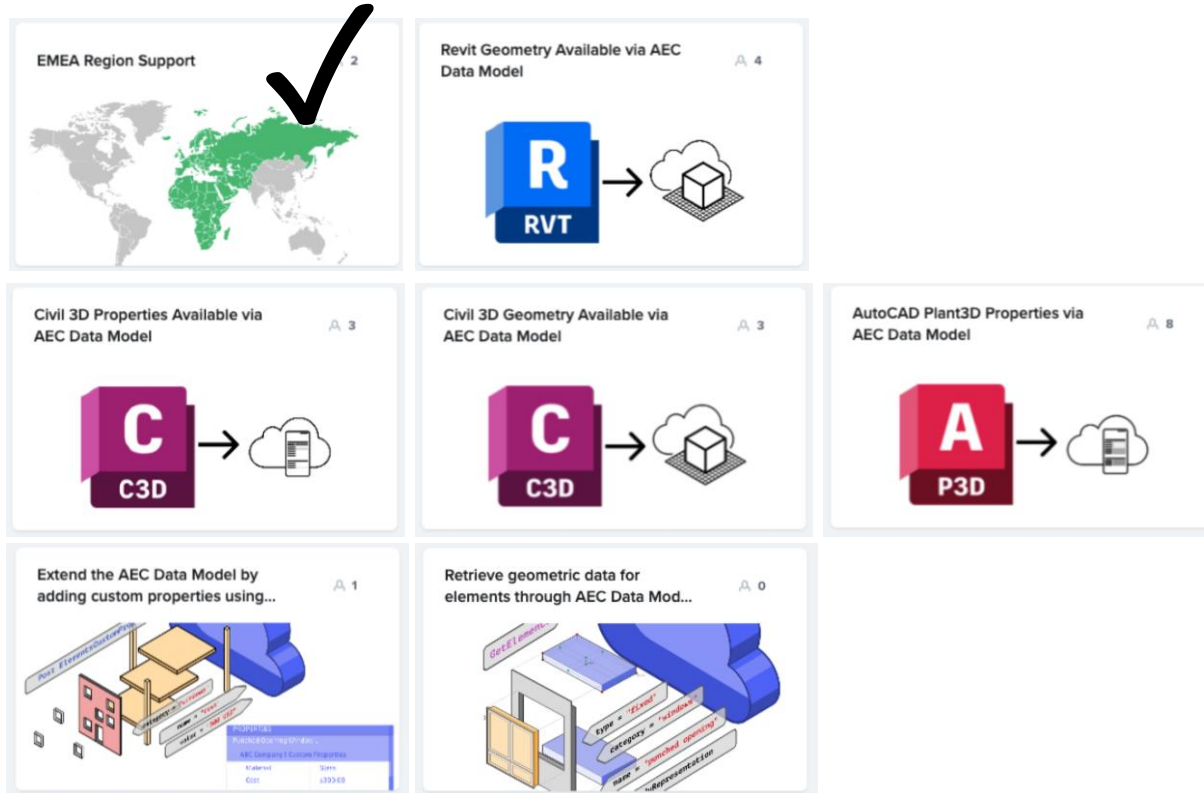
Využití v Dynamo



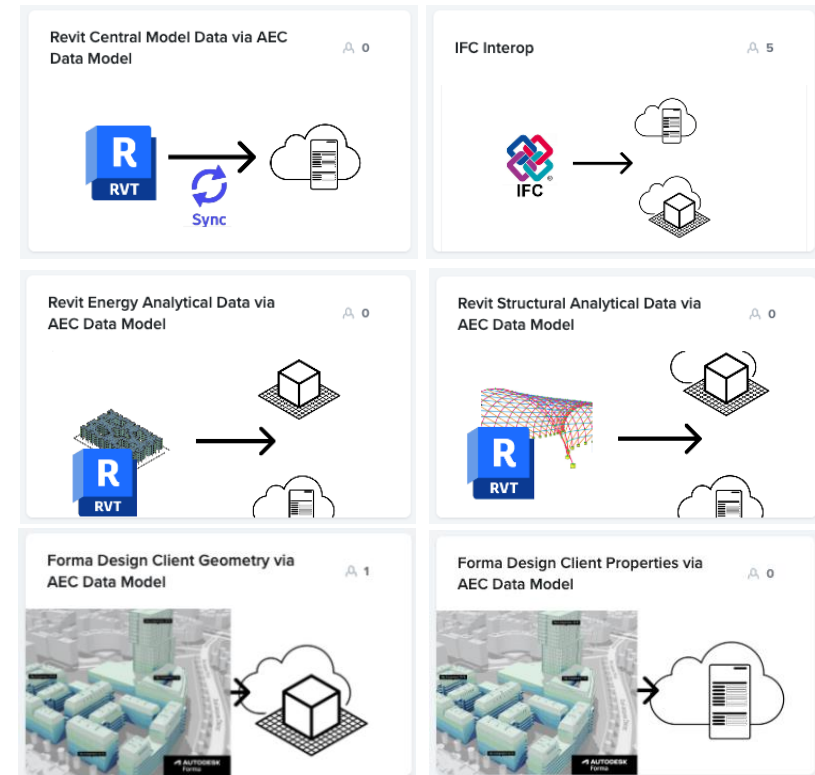
Roadmap

<https://aps.autodesk.com/aec-data-model-roadmap>

Ve vývoji



Budoucnost



Začněte s AEC Data Modelem

- **Aplikace**

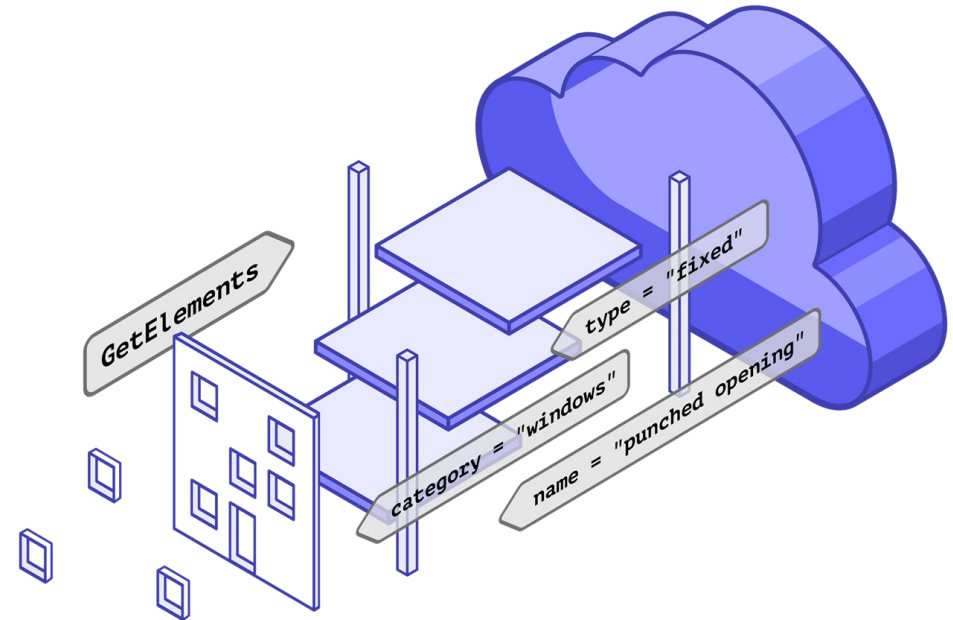
<https://aecdatamodel-explorer.autodesk.io/>

- **Tutorial**

<https://autodesk-platform-services.github.io/aps-aecdm-tutorial/>

- **AE Data Model API**

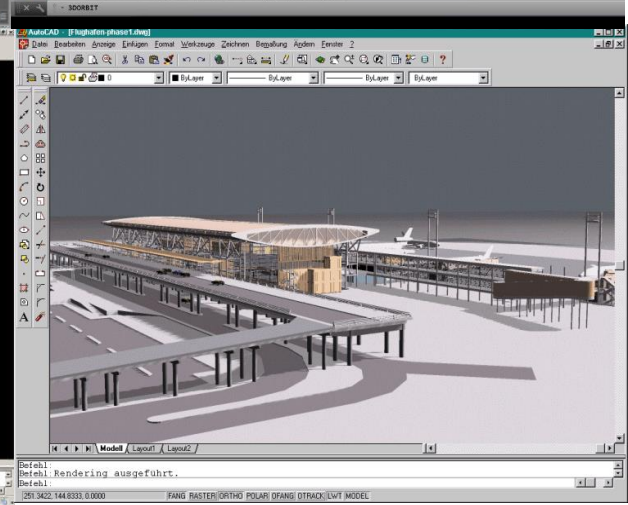
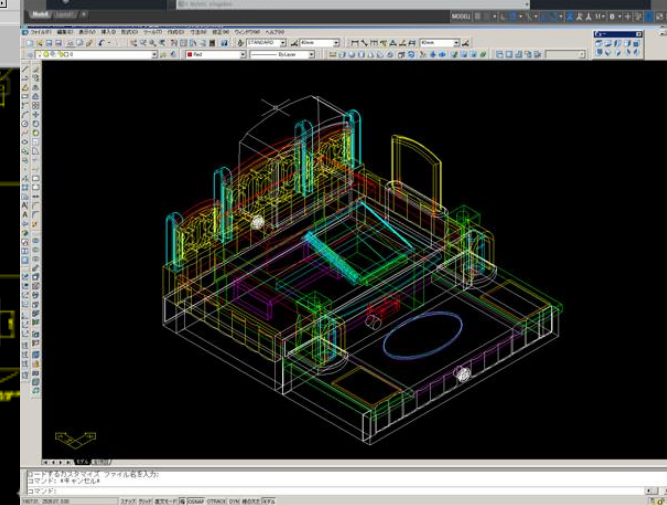
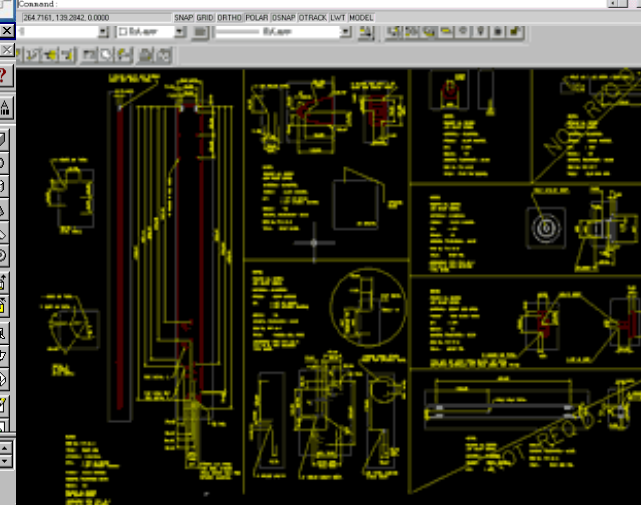
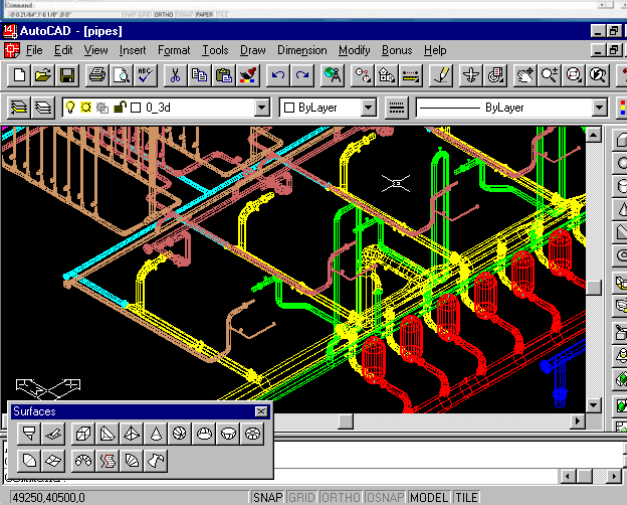
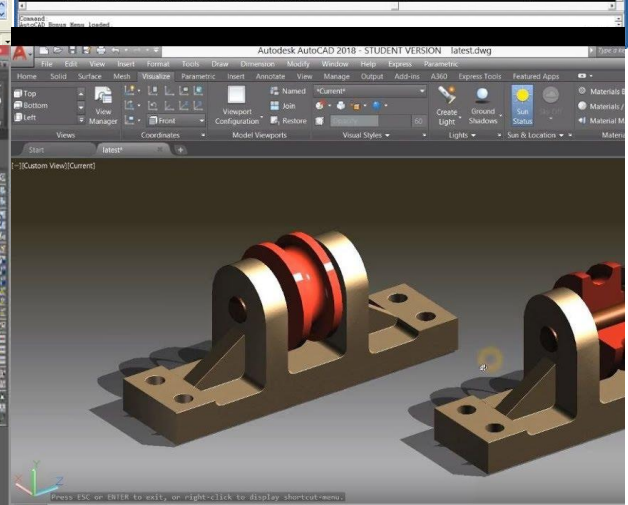
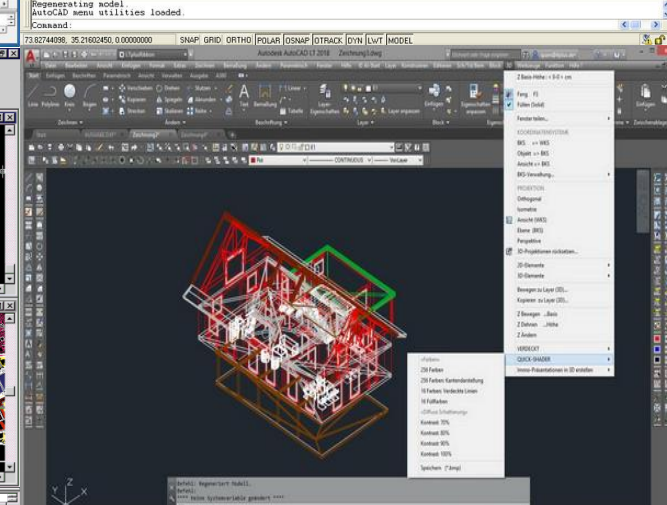
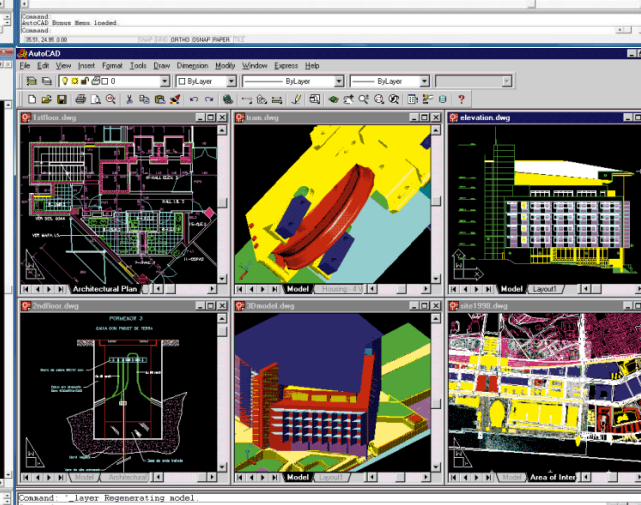
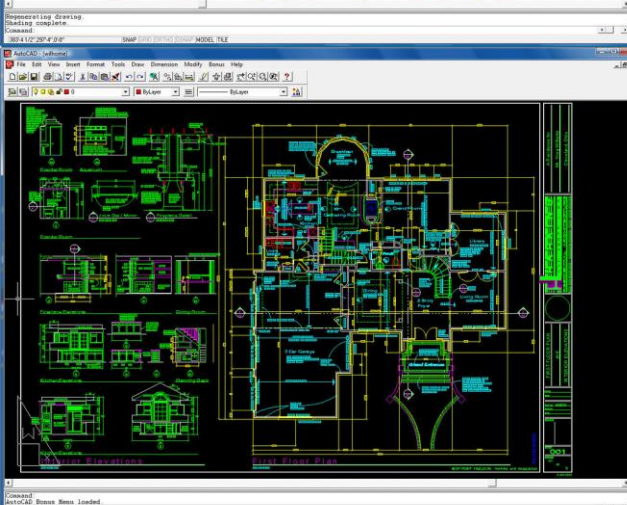
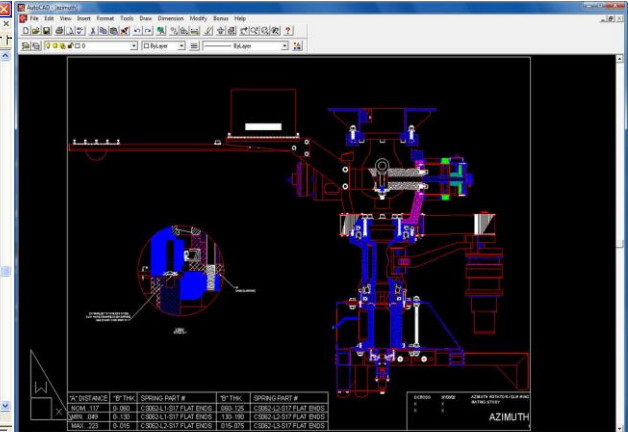
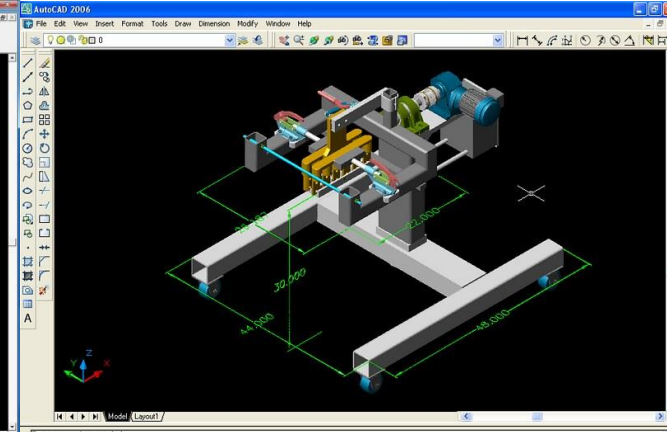
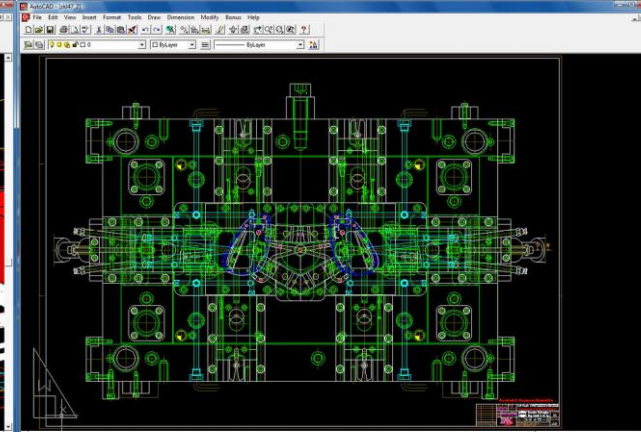
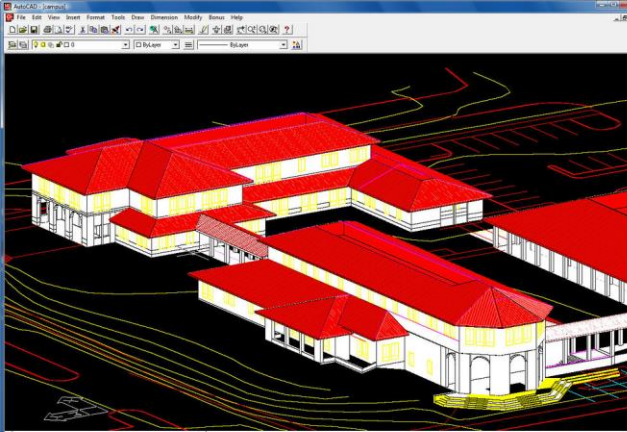
<https://aps.autodesk.com/en/docs/aecdatamodel/>



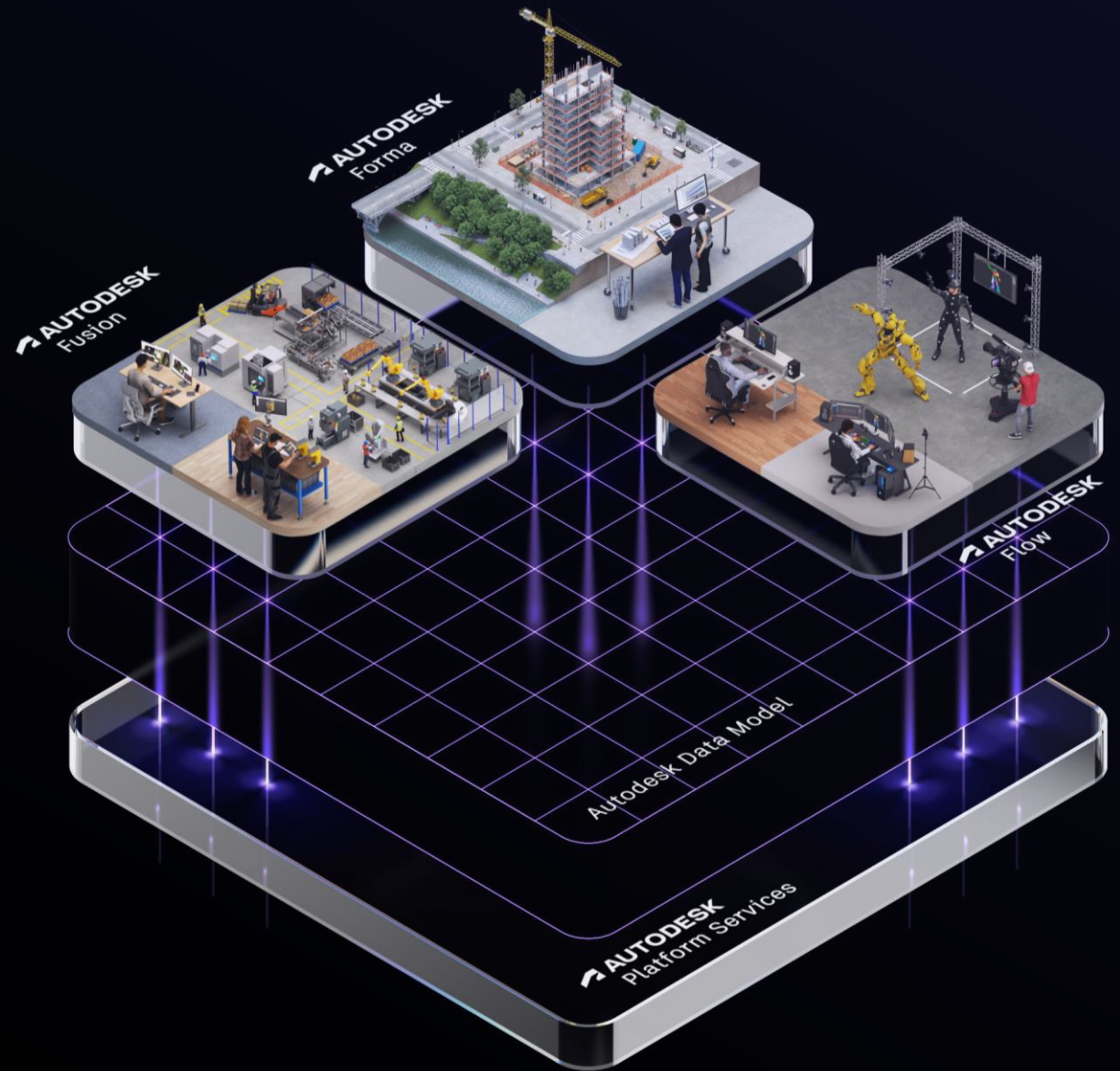


Autodesk Platform Services

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Autodesk Platform



Řešení na míru, která splní vaše potřeby



DASHBOARDY



DIGITÁLNÍ DVOJČE



PODNIKOVÉ
INTEGRACE



PREFABRIKACE



KATALOGY
SOUČÁSTÍ



KONFIGURÁTORÝ
& AUTOMATIZACE
DESIGNU

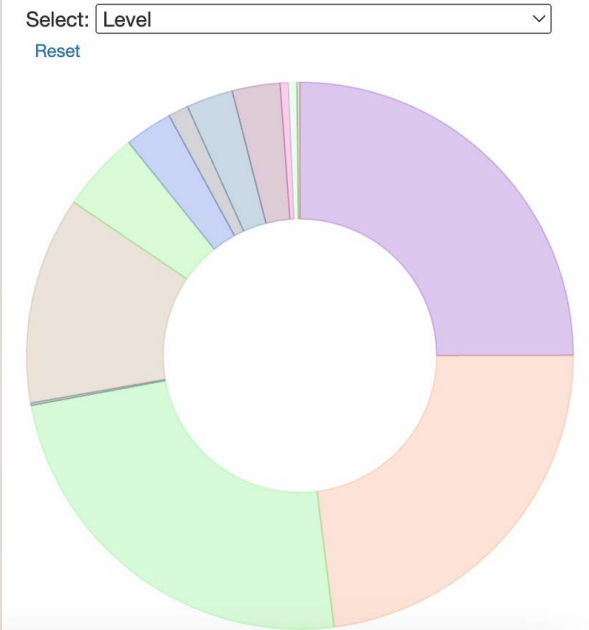


DATA
KONEKTORY



AR / VR

- Select:
-
- | Category | Count |
|-----------------------|-------|
| Walls | 1575 |
| Curtain Wall Mullions | 1625 |
| Roofs | 2225 |
| Plumbing Fixtures | 275 |
| Casework | 337 |
| Furniture | 687 |
| Windows | 912 |
| Topography | 225 |
| Stairs | 25 |
| Railings | 75 |
| Handrails | 25 |
| Generic Models | 125 |
| Sprinklers | 837 |



Řešení na míru, která splní vaše potřeby

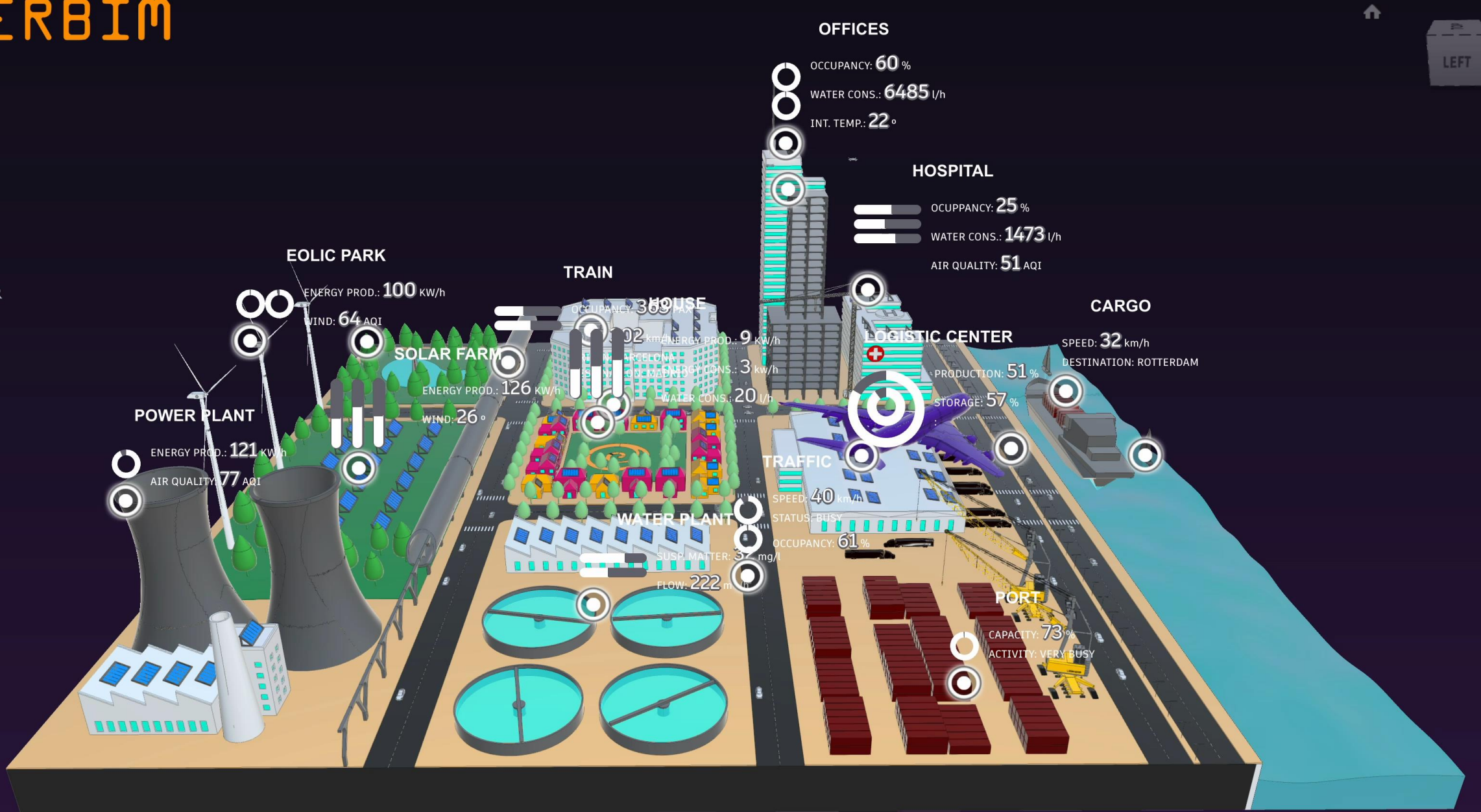


POWERBIM

PLAY

STARTING VIEW

POWER PLANT
TRAIN
WATER PLANT
PORT
CARGO
TRAFFIC
LOGISTIC CENTER
HOSPITAL
OFFICES
SITE
HOUSING
HOUSE
FOREST
EOLIC PARK
SOLAR FARM
FINAL VIEW



Řešení na míru, která splní vaše potřeby



DASHBOARDY



DIGITÁLNÍ DVOJČE



PODNIKOVÉ
INTEGRACE



PREFABRIKACE



KATALOGY
SOUČÁSTÍ



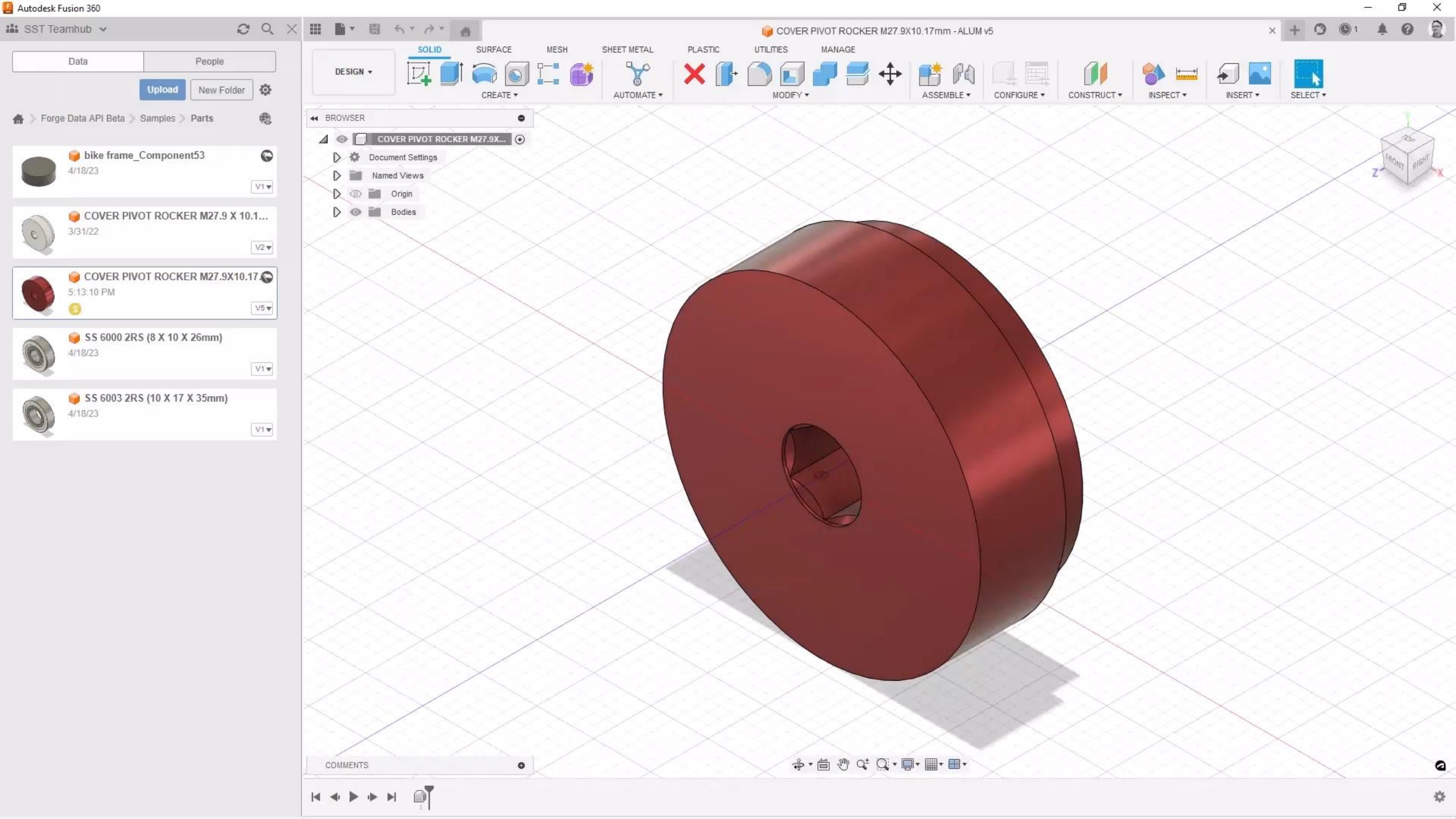
KONFIGURÁTORÝ
& AUTOMATIZACE
DESIGNU



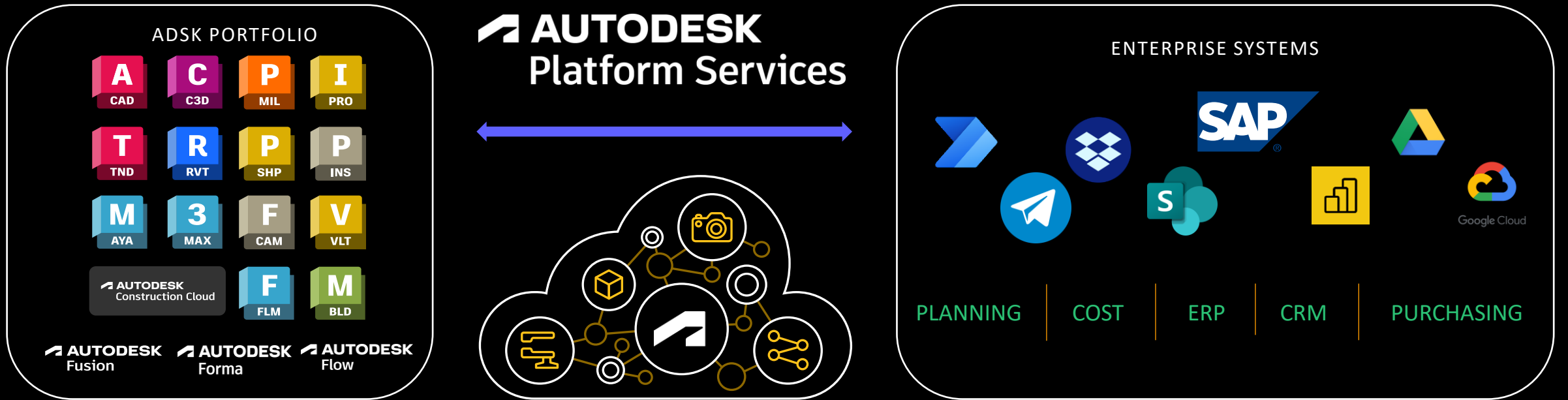
DATA
KONEKTORY



AR / VR



Connecting Design and Make data with Enterprise data



A close-up, high-contrast image showing a granular, textured surface. The surface is composed of many small, irregular particles and fragments, creating a rough, uneven appearance. The lighting is dramatic, with strong highlights and deep shadows, emphasizing the three-dimensional nature of the granules.

GRANULÁRNÍ

A close-up, high-contrast image showing a textured surface with a complex, wavy pattern. The surface appears to be made of many small, interconnected elements, creating a sense of depth and movement. The lighting is dramatic, with strong highlights and deep shadows, emphasizing the intricate details of the texture.

INTEROPERABILNÍ

A close-up, high-contrast image showing a bright blue sky with white clouds. The sun is visible, creating a strong lens flare effect that radiates across the sky. The clouds are fluffy and white, contrasting sharply with the deep blue of the sky.

PŘÍSTUPNÝ



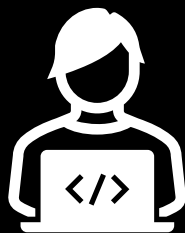
Cross-Industry APIs



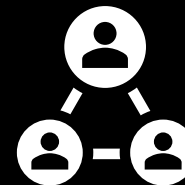
Jak můžete začít?



**Autodesk App
Store**



Interní vývojáři



Poskytovatelé řešení

Autodesk Platform Services - Certifikovaní partneři

AUTODESK
Consulting



MONARCH
INNOVATION PVT. LTD.

_ioLabs

Chetu
World-Class Software Solutions

SolidCAD
A Cansel Company

build.works

cadcraft

TECHNOLOGIES

Xinaps

SURMOUNT
SAFE . SUSTAINABLE . SMART

CCTech

ARKANCE
SYSTEMS

Norconsult
Informasjonssystemer

应用技術株式会社

Cadac Group

cordly

SPINALCOM

nti

CIDEON

eklo dale
BIM SOFTWARE
DEVELOPMENT
AND CONSULTING

FORIDA LIMITED

IMAGINIT
TECHNOLOGIES

Capgemini

SIVAR

BIM6D

SOFTWARE
COMMUNITIES

BIMLAUNCHER

belpro
DIGITAL

TECHTURE
ISO 9001:2015 Certified

nCircle
infinite possibilities

BUILD INFORMED

MOICON

SYMETRI
ADDNODE GROUP

Codeo

CAD & COMPANY

CAPA
FROM AKIHABARA

SystemMetrix

PROTOTECH
SOLUTIONS

KOPE

apogea

BAD MONKEYS

BlackSmithSoft

ofcdesk

SRINSOFT

Applied Software
We Build Solutions.

AMC BRIDGE

db-lab

Contecht
IT Solutions for the construction industry

PIRO CIE

das
Design Automation Systems

menschenmaschine
CAD as CAD can

GRAITEC

e-verse

Vitus



COOLORANGE

one team

LAGARSOFT
INFORMATION TECHNOLOGY

one team

cadix

Neilsoft

voyansi

WEBIM
SERVICES

DIGITAL DOTS

DSI

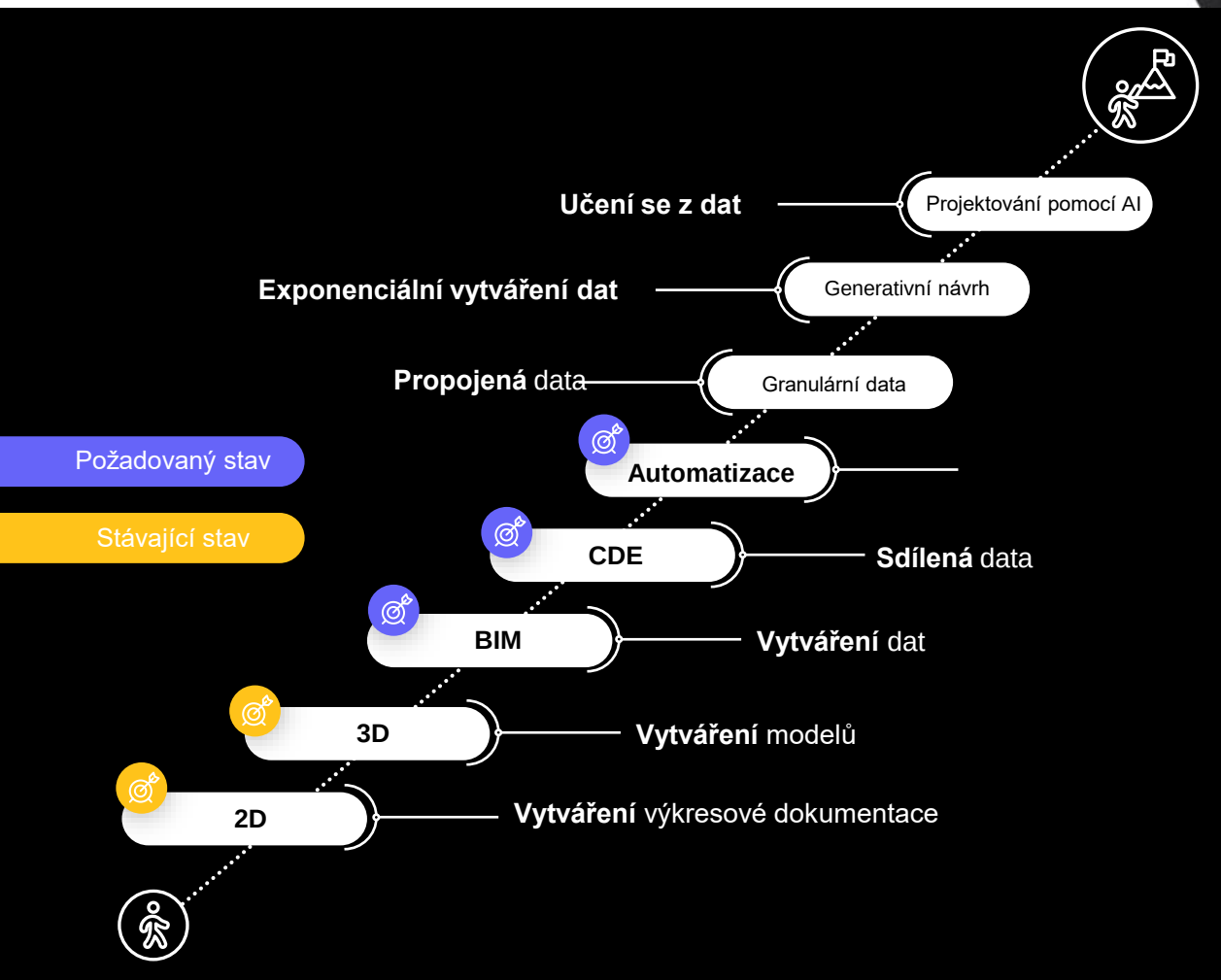
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Závěr

Digitalizace firmy

Projektování na základě informací a dat



Stávající stav

????

Požadovaný stav

????

Je vaše firma vhodný kandidát na využití APS?

TOP 5 otázek



4-5 ANO

Jste **velmi dobrý** kandidát na využití APS.



1-2 ANO

Zatím **ještě nejste** vhodný kandidát na využití APS

Vhodnost

☐ **Digitální transformace**

Jste odhodláni jít cestou digitální transformace?

☐ **Podpora vedení**

Podporuje vedení společnosti Digitální transformaci?

☐ **Doplňky/Add-ins**

Používáte doplňky pro některé produkty společnosti Autodesk?

☐ **Automatizace, integrace**

Provedli nebo zaplatili jste za nějaké přizpůsobení/automatizaci produktů Autodesku nebo integraci jiných platform?

☐ **Problémy se sdílením dat**

Máte problémy s přístupem, používáním a sdílením dat v rámci organizace nebo externě?

Autodesk Construction Cloud

