



Users Across the Globe are Transforming Insights with Open Data for Smarter, Faster, and More Efficient Decisions





analytics antruction

BIM and AIM Coordinator

With the help of Python and especially the pandas library, as the DataDrivenConstruction team does, we are now able to perform delivery checks four times faster.

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With the help of Python and especially the pandas library, as the DataDrivenConstruction team does, we are now able to perform delivery checks four times faster. By turning IFC data into a pandas DataFrame and comparing it with quantification tables or classification databases, we have made our expertise fast and reliable.

Nils Strumberger BIM- Coordinator | Fact GmbH

BIM- Coordinator | Fact Gr

The DDC (Data Driven Construction) Excel Plugin is a game-changer, transforming proprietary CAD models into open source data frames for seamless integration and AI interaction.

It significantly improves workflows and offers exceptional value for money by saving time and boosting productivity. Highly recommended for anyone looking to enhance their projects with data-driven insights.



DDC converter and Plugin is a fantastic and helpful tool for visualisation and quantification the meta data from Revit. Thanks for sharing such helpful tools!



Be part of the movement with DataDrivenConstruction! Let's make true freedom in data formats a reality and catalyze a new era of productivity and innovation in construction.

The real and necessary journey from closed to "open" formats has not even started: True freedom in data formats —free from proprietary ties and accessible to all—is what we need to unlock innovation and collaboration across the construction industry, particularly benefiting the 99% of construction, i.e. SMEs and unchaining the sector for accelerated growth



Revit and IFC reports that used to take me almost weeks to create are now updated in just a few minutes. I was able to quickly understand what the DataDrivenConstruction did and thus extend and modify it to fit projects.

The DataDrivenConstruction team showed me examples of blocks and scripts that can automatically generate PDF, XLSX, and DOCX files that mark errors/defects in the model. Additionally, we also now do automatic checks for IFC structure, file naming, etc.



This is a fantastic tool, haven't seen one like this in a long time. In this era, we have countless tools and methods for creating models, drawings, tables, and other forms of data.

The DDC Excel plugin provides me with the capability to manage information in alternative ways.



As a data scientist, I use data every day in every topic and field and think that data can appear in one format to make it easier to use and explore.

After I tried the DDC converter, it became the only solution for me to manage and convert all BIM documents. Thanks to DataDrivenConstruction, I can now work with all IFC and Revit files automatically without having to upload files to the server.

Marie Annette Kittus BIM Manager | Esttareal solution

DataDrivenConstruction Excel Add-In is a wonderful additional tool to help extract data from CAD (BIM) Revit, IFC, DWG files in order to move forward with information validation processes in your workflows.

As we move forward in the industry it is crucial to think about diversity of data and how to find the most suitable outputs in order to keep said data valuable, up to date and usable.

An influential tool with a user-friendly interface helping the construction industry move towards the future!



Great experience: Until now, I used to open IFC files in Blocknote to check the parameters and their structure.

Thanks to the DataDrivenConstruction converter I can check the parameters and see their structure directly in MS Excel in an orderly and SMART way, amazing!



DataDrivenConstruction approach is truly revolutionary and has the potential to transform the construction industry. It's amazing to see how you are empowering users to work with structured data in a userfriendly way, leveraging the power of Excel and open-source tools.

I'm sure that your Excel plugin and data management solutions will be a game-changer for construction projects. Keep up the fantastic work!





The decision to use Jupyter Notebook for results verification turned out to be highly beneficial. Our experience with solutions from Data Driven Construction and Jupyter Notebook has been extremely positive.

Overall, the integration of solutions from Data Driven Construction and Jupyter Notebook has greatly improved our workflows. Their combined capabilities and performance have not only optimized data processing, but also produced meaningful results, making them highly recommended tools.



DataDrivenConstruction products revolutionize data management in construction! Their IFC and RVT to Excel converters enable smooth data analysis and extraction, optimizing project management and documentation.

A powerful, user-friendly solution for construction professionals



M for

automate the verification process

CAD (BIM) data quality

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Move to BIM level 3 Your data is Yours

Solution

Data conversion

processing of data

Provides easy access an



Challenges



Poor quality data Errors in models and parameters can lead to significant financial losses.



Integration complexity Integrating data from different sources and formats requires significant resources.

Closed data formats The use of proprietary formats makes it difficult to access and process data.

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Objectives

Ensure high quality of data coming from CAD and BIM systems

> **Reduce errors and** inconsistencies in models



Open Data Formats Use granular, structured data for simplified data integration



Improve the process of data integration and processing for later use



Process Automation Use Python and LLM to validate, analyze data

STEPS FOR **ENSURING QUALITY** OF CAD (BIM) DATA



Creating validation rules

- 03 Fully automatic quality control
- 04 Fill the model with the right data
- Presentation of verification data 05

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no API needed no f			file base	d	no hidden fees	
no internet needed no			no limit	tatio	ons	no quality loss
no plugins no subscription no CAD-BIM needed						

BIM level 3	granul	lar data	open data	a unified
DataFrame	LLM	analytic	c open s	ource tools
data-driven c	struct	ured data	pipelines	

streaming check within seconds

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Move to BIM level 3
 Your data is Yours

Checking the quality



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no API need	led	no file based			no hidden fees		
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DataFrame	LLM	analytic	c open s	ource tools
data-driven d	lecision	struct	ured data	pipelines



FUNCTIONAL APPLICATIONS AVAILABLE IN THE DATADRIVENCONSTRUCTION PLUGIN FOR EXCEL

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Check Create Comparing Merging Export Export Export Export	

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no API need	led	no file base	d no	hidden fees
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no plugins	no s	subscription	no CA	D-BIM needed



Data filling in CAD (BIM)

converter

data export

project data

dwg

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Move to BIM level 3 Your data is Yours

Benefits

Data Security Data is under complete control and accessible without third-party vendors

Interoperability Interoperability between different systems, regardless of their origins

> Improved Collaboration Collaborate in real time with open data and tools

Scalable Solutions Solutions that easily scale to any project size

free and open source tools



Cost Efficiency Reduce costs by utilizing



Jupyter

plugin

model filling



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no file based no API needed no hidden fees

no limitations no internet needed no quality loss no plugins no subscription no CAD-BIM needed

BIM level 3	granu	lar data	open dat	a unified		
DataFrame	LLM	analytic	open s	open source tools		
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PDF

XLS

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Moving from Files to Granular Data

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Online and Offline

Workshops



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The workshop consists of several modules, which can be chosen in any order and in any number, allowing you to tailor the learning process to your interests and needs. Each module is designed to be concise and as informative as possible, lasting 40-60 minutes.



Introduction to Data in Construction

- 1.1 Data Automation and Workflows in Construction
- 1.2 Data Management Systems in Construction
- 1.3 Different types of Data, Databases and Excel 1.4 Data-Driven Decision Making in Construction Projects



History and Development of CAD/BIM

- 2.1 The Evolution of CAD: From 2D to 3D Design 2.2 Autodesk's Acquisition of Revit and the Rise of BIM
- 2.3 Closed vs. Open BIM: The Debate and Its Consequences
- 2.4 The Role of IFC in BIM Standards and Open Data Formats

CAD/BIM and Data Parameterization

- 3.1 Automated Data Processing Workflow in Construction
- 3.2 Exporting and Processing Project CAD (BIM) Data 3.3 Quality Control in CAD (BIM) Project Data
- 3.4 The Future of CAD (BIM) Data Processing
- 3.5 Solving Problems of Closed Data Formats in BIM



Challenges of BIM, openBIM, and IFC

- 4.1 Common Challenges in BIM Implementation
- 4.2 Limitations of Closed BIM Systems
- 4.3 The Role of openBIM and the Limitations of the Concept
- 4.4 Overcoming Interoperability Issues with IFC 4.5 The Final Level of BIM Maturity

Open Data and Tools in Construction

- 5.1 Transitioning to Open Data Systems in Construction
- 5.2 Challenges and Benefits of Implementing Open BIM
- 5.3 Process Automation Using Open Tools
- 5.4 Integrating Open Source Tools into Construction Processes

Data Types in Construction

6.1 Managing Structured Data: Excel and Relational Databases 6.2 Processing Unstructured Data: Text, PDFs, and Documents 6.3 Working with Semi-Structured and Geometric Data 6.4 Understanding CAD (BIM) Data and the BOM-BIM Concept

Data Quality and Requirements

- 7.1 Ensuring Data Quality in Construction Projects
- 7.2 Creating Requirements and Task Parameterization
- 7.3 Automating Data Quality Assurance Processes
- 7.4 Data Validation Methods and Reporting Results



- Data Management in Construction Projects
- 8.1 Data Integration Between ERP and BIM Systems
- 8.2 Data Modeling and Standardization Techniques
- 8.3 Integrating Diverse Data Systems and Formats
- 8.4 Converting Unstructured Data into Structured Formats







Automating the Design Process

9.1 Serial Construction and Design Parameterization 9.2 Libraries, families and metadata

- 9.3 Visual Programming Tools: Dynamo and Grasshopper
- 9.4 Understanding APIs and the Role of Python in Construction 9.5 Creating an Automated Workflow and Pipeline for Projects



Data Analytics and Data-Driven Decision Making 10.1 Structuring and Granularity of Multi-Format Data

- 10.2 Introduction to the Analytics Tool for Data Automation
- 10.3 Replacing Excel Data Processing via Data Analytics
- 10.4 Visual Representation and Analytics for Insights
- 10.5 Tracking KPIs and Project Performance with Dashboards
- 10.6 Analyzing and Interpreting Data for Strategic Decisions



Data Analytics and Visualization Tools 11.3 Automating Data Cleaning and Transformation

11.4 Visualizing Construction Data with Python and Pandas 11.5 Advanced Techniques and Integration with Databases 11.6 Automation of report generation based on Excel and PDF sources



Big Data and AI in Construction

12.1 Using Big Data in Construction Projects 12.2 Collecting Data from Diverse Sources 12.3 Forecasting with Machine Learning Methods 12.4 Improving Decision-Making with Big Data Analytics 12.5 Applying ChatGPT and LLM Models for Data Analysis



Digital Transformation in Construction

13.1 Challenges of Digitalization in the Construction Industry 13.2 Impact of Digital Tools on Project Management 13.3 Ensuring Data Quality During Digital Transformation 13.4 Key Stages of Transformation That Companies Will Have to Go Through



Cost Estimation and 4D/5D in Construction

14.1 Frameworks and Methods for Estimating Volumes, Costs, and Timelines

- 14.2 5D BIM: Cost Estimation and Budgeting
- 14.3 Creating Cost Estimates for Construction Projects
- 14.4 Implementing 5D BIM and Automating 4D/5D Processes 14.5 Future Trends in Project Calculation Methods

Carbon Footprint and Environmental Automation







Challenges in Data Management

16.1 Addressing Data Quality Issues in Construction Projects 16.2 Integration Challenges Between Different Data Systems 16.3 Overcoming Obstacles of Closed Data Formats

ERP Systems in Construction

17.1 Overview of ERP Systems in Calculations and Estimates 17.2 Modular Design of ERP Systems 17.3 Challenges and Transparency Issues in ERP Systems 17.4 Role of ERP Systems in Digital Transformation

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Unlock Efficiency: **Embrace Digital Transformation**



Online and Offline

Workshops



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Combined Pipelines: From Input to Insight

8.1 Upload File to Python Transformation to n8n
8.2 Quantity Checks, Dashboards, KPI Alerts for Projects
8.3 Automate CAD/BIM Data Conversion: Revit, IFC, DWG
8.4 Data Validation: Check for Missing Parameters, Reports
8.5 Quantity Takeoff: Calculate Volumetric Parameters, Reports

n8n Use Cases from DataDrivenConstruction



The workshop consists of several modules, which can be chosen in any order and in any number, allowing you to tailor the learning process to your interests and needs. Each module is designed to be concise and as informative as possible, lasting 40-60 minutes.

Introduction to Tools for Automation and Analytics

1.1 Why Data Tools Matter in Construction Digital Transformation 1.2 Starting with Practical, Flexible Tools Without Huge ERP Systems 1.3 Overview of n8n, Python, and Jupyter for Data Optimization 1.4 Replacing Repetitive Manual Work and Improving Data Quality 1.5 Enabling Smart Decision-Making Without IT Departments



Jupyter Notebooks – Interactive Data Analysis

2.1 Combining Text, Code, and Visuals in One File for Engineers 2.2 Running Calculations and Validating Construction Data 2.3 Explaining Logic with Code and Visual Outputs 2.4 Working with Python Libraries: Pandas, Matplotlib, Openpyxl 2.5 Exporting Results as CSV, Excel, or Interactive Dashboards

Python - The Language of Automation

3.1 Custom Scripts for File Parsing and Data Wrangling
3.2 Libraries for Tabular Data (Pandas), Excel Handling (Openpyxl)
3.3 Generating PDF/HTML Templates with pyPDF
3.4 Integrating with n8n for Extended Functionality in Pipelines

Jupyter & Python Engineering with Data

4.1 Analyze Slope of Pipes from Excel

4.2 Mass and Cost Calculation

4.3 Site Progress Dashboard: HTML from Photo Data, Track KPIs

4.4 Data Cleaning Scripts: Identify Duplicates, Inconsistent Units 4.5 Advanced BIM Data Processing: Validate and Transform CAD

- n8n Visual Automation Platform
- 5.1 Drag-and-Drop Interface and Low-Code Concept
- 5.2 Integrating Tools: Telegram, Email, Google Drive, Revit, Databases
- 4.3 No Programming, but Allows Advanced Scripting with JavaScript
- 5.4 Automating Construction Workflows Locally5.5 Reducing Time on Tasks Like Quantity Takeoff and Estimation
- n8n Construction Automation

Without Developers

6.1 Telegram Bot for Site Reports and Task Managments
6.2 Voice Message Transcriber: Voice to Text, Auto-Reply in Telegram
6.3 Excel Validation Workflow: Check Contractor Files
6.4 Document Generation: Create Contracts and Specs from Table
6.5 Connect Revit/IFC: Parameter Checks and File Handling

n8n + LLM Smart Workflows with GPT or Claude

7.1 GPT-Based Table Validation: Excel to LLM for Error Lists 7.2 Auto-Generate Technical Reports and Memos from Templates 7.3 Al-Based Classification: Tag Raw Elements with DIN and Uniclass 7.4 LLM Integration for Text Generation and Data Analysis 7.5 No-Code Pipeline Creation: Ask LLMs to Generate JSON Workflows





9.1 Pre-Export QA: Ensure Model Data Completeness Before Deliverables 9.2 Standards Compliance: Verify BIM Models Meet Project Requirements 9.3 Project Management: Telegram Bot for Tasks and Photo Reports 9.4 Revit/IFC Verification: Validate Data Quality in BIM Projects

Advanced n8n Workflows for BIM and CAD 🔧

10.1 Automated Conversion Pipeline for .rvt, .ifc, .dwg
10.2 Quality Checking: Assess Revit and IFC Projects for Errors
10.3 Import Excel to Revit: Parameter Values from Databases
10.4 ETL Pipelines: Extract, Transform, Load wiht CAD-BIM Data
10.5 Cost Estimation Automation: Classify Materials, Search Prices



Cost Estimation Automation: Classify Materials, Search Prices, Generate Reports

11.1 Processing Unstructured Data: PDFs, Texts into Structured Formats
11.2 Data Quality Assurance: Automate Validation and Reporting
11.3 Big Data Collection: From Diverse Sources Like ERP, CAFM
11.4 Forecasting with ML: Integrate Machine Learning for Predictions



n8n for Data Analytics and Visualization

12.1 Structuring Multi-Format Data: Excel, Databases, BIM Exports
12.2 Automating Data Cleaning and Transformation Processes
12.3 Visualizing Construction Data: Dashboards with Integrated Python
12.4 Tracking KPIs: Project Performance Monitoring and Alerts
12.5 Report Generation: From Excel/PDF Sources to Automated Outputs



n8n in Digital Transformation Challenges

13.1 Addressing Data Quality Issues in Construction Projects
13.2 Integration Between ERP, BIM, and Other Systems
13.3 Overcoming Closed Data Formats with Open Tools
13.4 Key Stages: From Manual to Automated Workflows

13.5 Impact on Project Management: Efficiency Gains Without Vendors

Impact on Project Management: Efficiency Gains Without Vendors

14.1 Frameworks for Estimating Volumes, Costs, Timelines 14.2 5D BIM Automation: Budgeting from Model Data 14.3 Creating Estimates: Al-Assisted Material Classification 14.4 Implementing 4D/5D: Timeline and Cost Processes 14.5 Future Trends: Al-Enhanced Calculation Methods

n8n for Carbon Footprint and Environment



15.1 Estimating CO₂ Emissions from Construction Data
15.2 Automating Calculations with 6D, 7D, 8D Dimensions
15.3 Integrating Environmental Data into Workflows
15.4 Reporting Sustainability KPIs Automatically
15.5 Linking with Databases for Green Analytics



Challenges in Data Management

16.1 Handling Data Silos and Inconsistencies
16.2 Connecting Diverse Systems and Formats
16.3 Converting Unstructured to Structured Data
16.4 Standardization Techniques for BIM/ERP
16.5 Validation Methods for Strategic Decisions

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build smart, build precise

Date analytics in construction

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Move to BIM level 3 Your data is Yours



Key Benefits

Improved Project Planning

Data analytics enable predictive modeling for better accuracy in timelines and budgeting

Efficient Resource Management Optimize allocation of materials, machinery, and manpower with real-time data

Risk Mitigation

Advanced analytics help identify potential risks and devise proactive strategies to mitigate them

Our Approach

Data Integration Seamless aggregation of data from various sources including BIM, CAD, and IoT devices

Custom Analytics Solutions Tailored analytics frameworks that align with specific project needs and goals



Continuous Support and Training Ensuring your team is equipped to utilize analytical tools and methodologies effectively



Life Is Short, Use Python to work with construction project data **Data Visualization Machine Learnina** م٩٥ **Data Manipulation** P Pandas Ρ ilil NumPy N



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DataFrame	LLM	analytic	open so	ource tools
data-driven d	decision	structure	ed data	pipelines



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Unlock the full potential of your construction projects with our specialized consulting services at DataDrivenConstruction.io. Our expertise in CAD (BIM) data integration and management transforms your workflow efficiency and decision-making process.

What We Offer



Customized Data Strategies

Tailored solutions for data collection, management, and analysis that fit your specific project requirements



CAD Conversion and Integration

Streamline your project documentation with our advanced CAD conversion tools, making data easily accessible and usable



Training and Support

Empower your team with the knowledge to leverage BIM data, enhancing productivity and innovation



Your Benefits

Reduce Costs and Save Time Our strategies optimize resource allocation and project timelines

Enhanced Decision Making





Competitive Edge



Stay ahead in the industry with cutting-edge data practices that set your projects apart

With better data at your fingertips, make more informed decisions that lead to successful project outcomes

Transform your approach with DataDrivenConstruction and lead your projects to success with data!



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become our ambassador or partner

Join the Open Data and Tools Movement!

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Move to BIM level 3 Your data is Yours

We offer everyone the opportunity to be part of the future where data is accessible, open, and easy to integrate. With our support, you can transform complex design and construction processes into automated, efficient, and accessible solutions

Why Become an Ambassador?



Influence the Industry

You will have the chance to directly impact industry standards and practices by promoting the use of open tools



Exclusive Access to Resources

Gain early access to our materials, updates, webinars, and tools that will keep you at the forefront of innovation



Build Your Personal Brand

As an ambassador, you position yourself as an expert in using simple and open technologies, boosting your reputation in the professional community



Professional Growth

You will learn and grow alongside leading experts in automation, data analytics, and open formats, expanding your skill set

Who Are We Looking For?

We are seeking enthusiasts, experts, and innovators who want to:

Promote the use of open data formats and tools

Organize training sessions, seminars, or webinars

Contribute to the development of open technologies through articles, blogs, social media, or videos

Collaborate with us to attract new companies and professionals to the use of simple and free tools

How to Become a Partner?

Benefits for

Partners

step of the way

Recognition for your

Ambassadors and

Exclusive materials and tools

Support from our team every

contribution to the community

Submit an Application Share your contact details and tell us about yourself, including why you're interested in this project We'll discuss cooperation together We will provide you with all the necessary materials and instructions to become an expert in using our solutions Start Sharing Knowledge Host training events, write articles, or share information on social media, helping others implement simple and open tools in their work

Ready to Join?

Contact us to learn more about becoming an ambassador or partner, and let's build the future together with open data and simple solutions!



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DataDrivenConstruction Guidebook

Navigating the Data Age in the Construction Industry

