



ides **MasterConcept**[®]
ACCESSIBLE FOR ALL PROJECT MEMBERS

Developed by
ides

BIM AEC

Ides MasterConcept for BIM
– from the beginning of the project
all the way to operation





Infrastructure projects

Ides offer solutions for both the project management as well as sub suppliers for all BIM-projects covering all types of infrastructure projects such as Airport, Railroad, Metro, Road and Bridges.



Architects and engineers

From the very beginning of the planning and design of a building project there should be a control over two major areas such as Documents and Volumes of functional Equipments and volumes of Structures. Documents, drawings, 3D models has the be handled with care by 100% control of versions and revisions. The document revisions you produce represent your companies skills and profession and will end up in many stakeholders hands. Ides MasterConcept has full support for 3D models and traditional CAD software used by stakeholders such as Architects, Engineering companies within Electrical, Heating, Plumbing, Ventilation and Water. Our software platform for BIM is designed to streamline your design business processes and to create a standard of exchange formats based on documents and object properties for the BIM industry.



Hospitals and medical care

Projects within Hospital and Medical care have characteristics of high complexity with many stakeholders combined with a distinct time and budget control of the project. With Ides MasterConcept the project and the operator will have a well-structured IT-platform designed to take care of all technical information in combination with technical documentation.



Maintenance and services

Maintenance is depending on that the documentation is up-to-date and that it can be found in one place. The basic requirement for the maintenance organisation working in the facility that they easily can find information about what kind of equipment there is and if there are any spare parts on store.

Technical data is a requirement to be able to conduct professional and safety maintenance.

Full transparency for all stakeholders in BIM and AEC projects

One central IT-platform for all stakeholders in a BIM Project

Building Information Modelling (BIM) has become a concept for all who are active in the building industry and the use of BIM as a requirement in procurement are more common for every day. Business areas where the impact of BIM has come fast are infrastructure, hospitals, healthcare and commercial buildings. Most projects have clear requirements on project participants that they conform to working procedures and standards defined in BIM.

Benefits that all want to achieve are primary:

- decreased cost
- increased productivity

One of the key-areas of BIM is to increase the coordination between stakeholders and the information sharing during the whole project. The tar-



Commercial and public buildings

This is an area that has high demands on safety and technical solutions to solve both logistics problems as well as changes in space. The operator/owner has not just requirements on the as-built documentation but also requirements to be able to feed the maintenance organization with relevant data. With Ides MasterConcept the BIM-operations will have an IT-platform during the hand-over phase as well as during the entire lifecycle of the building.



EPC Projects

To visualize documents for all stakeholders within an EPC Project is vital to keep the project budget and milestones. Ides Engineering Data HUB opens up information for all users no matter if they are running an advanced 3D-system or work with contracts and procurement issues.

Well connected with the ERP system all planning of resources for the project are easily made. It gives you a complete overview of status.



get is not just to be more efficient during the construction phase of the project but more requirements have come to look at the whole lifecycle. Information and data from the project has to support the owner during the operation and maintenance where the goal is to minimize the total cost during its lifecycle. This new requirement creates new demands on both the project owner but also sub-suppliers during the project.

Still design and civil engineering has to deal with traditional processes around electrical-, mechanical-, building-design. Building information structures have to be defined parallel with the huge amount of documentation that is created, specifications of specific components that is prepared for procurement. Requirement of information sharing with all stakeholders and feedback to the Main Contractor has to work the whole project. The BIM model has to be handled also by different disciplines during each sub-project.

> *HUGE IMPROVEMENTS IN COORDINATION BETWEEN STAKEHOLDERS*

> *DECREASED COST DURING LIFECYCLE RELATED TO MAINTENANCE AND OPERATION*

> *BUSINESS BENEFITS FOR EVERYONE IN ALL STAGES*

“BIM has become a concept for all who are active in the building industry”



“Our platform become the gearbox between different applications”

MasterConcept Engineering BIM Data HUB

In the past 20 years we have developed a platform to our customers so that they can be more efficient during the design phase of their projects. By creating a BIM collaborative platform where we integrate CAD and 3D-CAD with MasterConcept central database our database become an “Engineering BIM Data HUB”, the central storage place for all stakeholders and participants in the project.

Ides MasterConcept offer a total solution for the design phase to gain

- *maximal efficiency during the design phase with great support for technical document management.*
- *a standardized interface for sharing and exchange of data and documents.*
- *a relation to BIM-Objects.*

Our platform become the gearbox between different applications who manipulate and connects to each BIM-Object. Data is extracted from the 3D-model from each 3D-entity without any interference with the application graphical data model.

The huge amount of equipment and material that has to be procured, technical data that has to be used to be specified during procurement as equipment requirement are now accessible to all in the entire project. A platform for project management, department managers, departments for planning, maintenance, construction-planning and procurement.

Ides MasterConcept Engineering BIM Data HUB will become your “glue” between ERP and BIM and opens up possibilities for project control in combination with project financial control.

> MAXIMIZED EFFICIENCY

> STANDARD INTERFACE OF EXCHANGE

> NO INTERFERENCE WITH BIM APPLICATIONS DATA MODELS



MasterConcept Engineering BIM Data HUB

Building Information Modeling (BIM) has become a concept for all who are involved in design within the construction industry. It became the equal sign between 3D models and BIM, but the development shows that the fact is not so. The Term “Modelling” is a generic term for the Abstract information about the total Digital model of the building or construction. Both 2D and 3D models are components within the Digital abstract model called BIM. We can add more dimensions such as time and cost what science has declared as 4D and 5D. There are other aspects of the model such as warranty, control systems controlling the indoor climate, all are a part of the total Model.

BIM-Object accessible for all in Ides BIM

MasterConcept can collect object properties from 3D models and CAD drawings and make all data accessible for all project members. MasterConcept become synchronized with models and CAD drawings.

Objects can be such as Door, Window, Valve or Ventilation Fan. If the engineer remove one window in the 3D model it will be removed in MasterConcept. If any data is changed in MasterConcept on the Door the data will be updated in the 3D model.

By extracting data outside 2D/3D/CAD- systems in to MasterConcept more participants can start working early in MasterConcept, parallel with the design. The team have control of Volumes, Prices, Suppliers, construction time, estimates etc.

Complex CAD-systems need smart document systems

BIM Industry, or more known as AEC Industry, has during the past years taken many steps to modernization and transformation from traditional file oriented approach over to advanced 3D modeling. The complexity in a digital modern environment and time limited projects have resulted in less control of the document workflow. Workflow steps and approval check points are built in the business process, but files are stored everywhere in an open environment and revision handling is hard or even impossible to keep track on. Read more how we organize your documents and files.

For all in the planning in the design phase

MasterConcept for architects, interior designers and civil engineers

MasterConcept is built to support all aspects of the design phase. Support to those who write the functional documentation and create the first 3D models in the project. Aspects of a building is slowly developed and later in the project all models and documents will be reviewed by many in the project.

In this chapter we will try to describe to you what the benefits are for you in your profession by using MasterConcept.

MasterConcept for Electrical, Heating, Water and Ventilation. MEP and HVAC

Your work is representing the Functional areas in a building from transporting people in an elevator or see to that the building have fresh air or just light in the entrance hall.

By designing functions in a building there will be a huge amount of equipment's who belong to different functions and systems. Data need to be shared between different engineer aspects. Electrical, Ventilation, Instrumentation & Control all this areas or aspects of the building have to be able to Share and Coordinate documents and data between each other.



During Operation of the building

MasterConcept in the facility management and operation

With the operation during many years there will be many projects for refurbishment that has to be managed and documents need to be updated new documents will be created and some will be sent to the trash bin. With MasterConcept you receive revision and workflow on documents as well as MasterConcept make them searchable. Searchable for the users who work with the documents and maybe after a shift of generation all obvious labeling and numbering of documents is not as clear as it was for the new comers.

You know how easy it is to find the photo on your disk you took on your holiday 10 years ago in Paris in front of the

view of the Eifel Tower... Not searchable, just a stupid filename generated from the camera and not Meta data.

It is a fact that the digital world has too many zeros!

MasterConcept offer you the possibility to register your digital files and documents in a way that meta data make them searchable but also create relations to building or equipment. Due to relations to many other aspects you have more search criteria to find the right information in the future. With information Objects in MasterConcept you have the possibility to structure all information in as many aspects as you wish. No limit.



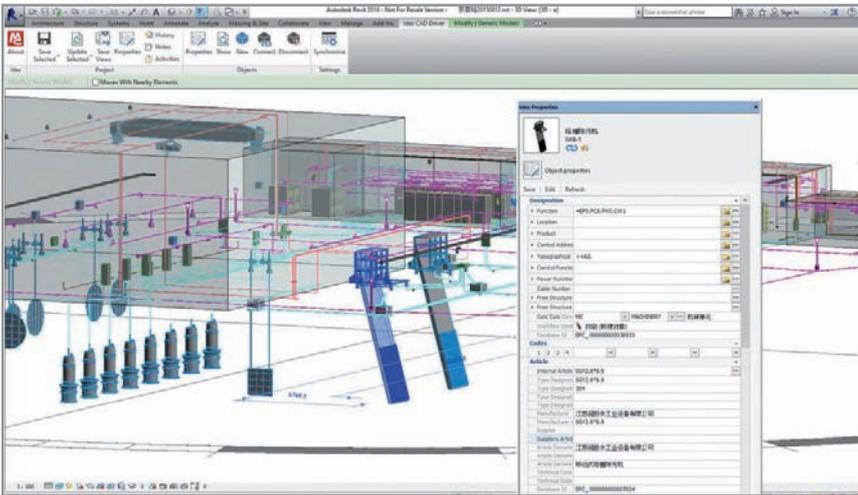
Construction with mobility & precision in BIM models

MasterConcept for Construction

Its always important that every participant has the right documentation and that the document distribution is easy and fast.

With MasterConcept you have a simple handling of all published documentation in an simple and easy to use format. No advanced file formats anymore just a simple PDF document file. With a digital briefcase you distribute all documents fast and easy.

To make documentation available for the entire project you just choose the mobile solutions in MasterConcept and create your personal Project Cloud. All stakeholders in the project can easily browse to your Project Cloud to find all documents and use any kind of device for this. Ides MasterConcept Cloud show documents with a "published" status to be sure there are not other documents there that has not been approved.



CAD and 3D CAD

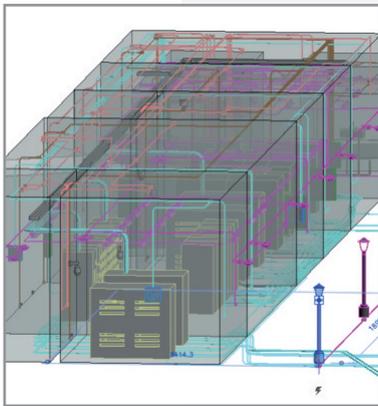


Ides CAD-Driver for BIM CAD and 3D

MasterConcept specific BIM CAD Driver applications operates inside both Revit and AutoCAD and extract data from CAD and 3D-models in to functional and structural element/object in MasterConcept database. This is done without disturbing or interfering with the graphical data. The handling of graphical exchange of data based on i.e. IFC(Industrial Foundation Classes) is done by the CAD application.

You might say that we tear apart the entire model in to small pieces and identify each element as one object without manipulation of any graphical entity. With this great functionality, the project team get a transparency of all 3D models and CAD drawings.

Other team members can directly start working with calculations or analyzes independent of graphical models and application.

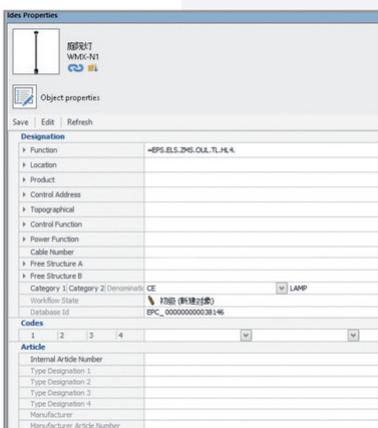


MasterConcept Revit and AutoCAD CAD Driver applications can also add properties in to each CAD element. Search of object data or equipment data in MasterConcept will search through all documents and 3D models.

Take control of the transformation of the 3D model to 2D files

The software where the 3D-model is built created has the possibility to create 2D views from the 3D model. The View is like a snap shot from a specific angle or view that changes at the same time as the user changes the model.

The 2D view is there to support the construction documentation or for detailed design in places where it's needed. The 2D views can be added in to a view called Sheet where a drawing frame is added to become a Dynamic 2D drawing that is automatically updated in phase with the change of the 3D model. Users mostly want to export the 2D "Sheet" in to files in order to make the blue print for document distribution to different stakeholders during the project or in the construction phase.



With MasterConcept CAD Driver applications, MasterConcept take over the View inside the 3D application before it has become an exported file. The system also handles the export automation as well as transformation from 3D model to a 2D document to an open file format such as PDF.

With MasterConcept the 2D exported files becomes actual documents with document number and Meta data. MasterConcept keep track of changes of the Views and alert the user if the document export need to update the existing document in to a new document revision.

It not only gives new opportunities to the project and revision control of exported document files, but also a platform for all to reach all documents. Most important of all everyone can look at the PDF drawings.



Enterprise Asset Management (EAM) MasterConcept as an integrated part of the Plant

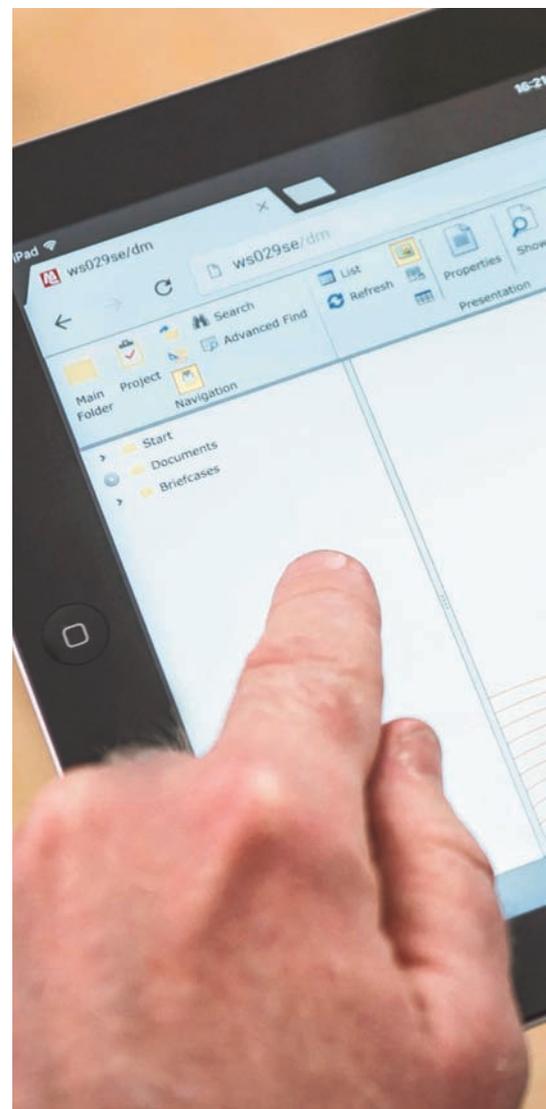
EAM as part of the project and design

Enterprise Asset Management or EAM is for many a business critical process where security, availability and cost are the focus for maximum profitability.

In many Projects and activities the maintenance work begins as the plant becomes operational. Our experience shows that there are huge profits to include the maintenance aspect at the construction and commissioning. The plant maintainability should be considered in the project's early phases and maintenance specified in an early stage before the plant is commissioned. The goal is as quickly as possible to achieve the planned capacity and fault-free operation. All aspects of the plant information shall be made available for the maintenance and the operation in relation with the start of operation.

Property description and documentation is the basis for effective maintenance.

During a plant project, many documents are created describing the entire plant all systems with object functions, technical components, equipment dependences and relations, all this specified in plant structures in Ides MasterConcept. The information is the basis for an effective maintenance and should in the early stages be made available for the maintenance and operation through the electronic transfer of asset data. With Ides MasterConcept all the information sharing is handled during the project. MasterConcept also handles the functions of transmission of plant data and documentation to the plant owner's operation and maintenance systems.





Maintenance

- > INCREASED RELIABILITY OF THE PLANT
- > OVER ALL EQUIPMENT EFFECTIVNESS(OEE)
- > MAXIMUM USE OF MAINTENANCE RESOURCES
- > REDUCE COSTS FOR MAINTENANCE AND SERVICE
- > MANAGE A LARGE AMOUNTS OF DOCUMENTATION
- > OPTIMIZE THE SUPPLY AND PURCHASE

“MasterConcept as an integrated part of the Plant Maintenance”

ISO/IEC Standard for BIM

IEC/ISO 81346-12 in MasterConcept for the AEC industry

The Object Management in MasterConcept follows the ISO/IEC standard Principles for Structure Handling in order to structure plant objects by different perspectives and functions in a smart and simple way. It was first implemented in MasterConcept 1993 and today the development has gone further with this latest standard in MasterConcept.

Today it's used for buildings and all its building functions. The new standard is labeled as IEC/ISO 81346-12. The last digits (-12) refers to the BIM area. The new standard have examples how to structure the data. There are two main areas how to structure a building.

Products of construction works are construction units, by which a building is assembled, e.g. foundation, wall, column, ceiling, facade, door, window.

Products of building services are units such as technical plants, plant sections, components, and other equipment used for realizing functions of building services.





“By creating work processes with the support of MasterConcept, the maintenance specifications can be defined in good time before the start of operation”

Our experience shows that there are huge profits to include the maintenance aspect at the construction and commissioning

Specification of preventive maintenance in the project's early stages

The value of considering a plant maintainability are already under Construction enormously from a lifecycle profit perspective. By creating work processes with the support of MasterConcept Maintenance, the maintenance specifications can be defined in good time before the start of operation. Reliability analyses and RCM definitions can be conducted and result in a complete maintenance specification for each plant object.

Preventive maintenance -specifications in Ides MasterConcept Maintenance is defined in a format corresponding the maintenance structures of traditional EAM-applications. At an early stage "convert" suppliers maintenance documentation into structured maintenance plans create the right conditions for data exchange between plant project and the plant owner.

With this collaboration between Design and Maintenance the design will be updated from a maintenance perspective what can be found in how to access equipment and the choice of equipment. Unfortunately it is all too common with a plant design that does not consider maintainability of the plant, which will eventually cause unnecessarily long interruptions for maintenance work and consequently lost revenues.



With premade interfaces towards ERP and EAM systems you have the freedom to put your ambition on your own level

Ides MasterConcept Maintenance as a part of EAM

With Ides MasterConcept you already have the basic functions for efficient maintenance such as facility, articles, individuals and all documentation. You can to this add Ides MasterConcept Maintenance and receive a fully integrated solution for your maintenance organization with the modules

- *Plant/facility*
- *Documentation*
- *Preventive maintenance plan*
- *Work orders*
- *History and follow-up*

Ides MasterConcept gives you support for the plant's entire Life cycle where design, maintenance and operation work together to achieve maximum capacity utilization. With complete interfaces to business and maintenance systems, you also have full freedom to choose the level of ambition and choice of solution that fits you.

Transfer of information from the project to maintenance

Working with MasterConcept during all Project phases means that the plant information and documentation can be electronically transferred to your maintenance and business systems.

If the plant owner already have an existing maintenance system, all preventive maintenance specifications and work order history can be transferred . The result is a fast up and running preventive maintenance with the start of operation. This will affect usage of capacity and profitability of the new plant.

- >ELIMINATES COSTS
- >SUPPORT FOR PREVENTIVE MAINTENANCE AND WORKORDER DURING COMMISIONING
- >INCREASED PERSONAL SAFETY
- >PLANT LIFE CYCLE HISTORY AND WARRANTY FOLLOWUP



ides **MasterConcept**®
ACCESSIBLE FOR ALL PROJECT MEMBERS



“Full transparency
for all stakeholders
in BIM and AEC
projects”