

TABLE OF CONTENTS

| | |
|--|----------|
| 1. WHAT IS RESULTS BUILDER? | 2 |
| 1.1. WHAT IS RESULTS BUILDER?..... | 2 |
| 1.2. WHAT IS THE RESULTS BUILDER SDK? | 2 |
| 1.3. TO WHOM IS IT ADDRESSED? | 2 |
| 1.4. WHAT ARE THE MOST INTERESTING FEATURES FOR API DEVELOPERS? | 2 |
| 1.5. WHAT ARE THE BENEFITS FOR REVIT USERS? | 3 |
| 1.6. WHAT IS THE DIFFERENCE BETWEEN THE REVIT AND THE RESULTS BUILDER API? | 3 |
| 1.7. WHAT PRODUCTS CAN THIS TECHNOLOGY BE APPLIED TO?..... | 3 |
| 1.8. HOW DO I GET STARTED? | 3 |
| 2. SYSTEM REQUIREMENTS | 3 |
| 3. CONFIGURATION..... | 3 |
| 4. FIRST PROJECT CREATION..... | 3 |
| 4.1. VISUAL STUDIO SOLUTION..... | 4 |
| 4.2. DEVELOPMENT | 5 |
| 5. CREATE RESULTS BUILDER ACCESS | 5 |

1. WHAT IS RESULTS BUILDER?

1.1. What is Results Builder?

The primary goal of Results Builder component is to provide common place to store and access results data in Revit. Results Builder provides additional API layers dedicated to results.

The outcome of this approach is:

- Acceleration of results related add-ins development
- Better consistency across results related add-ins

Results Builder is a component supporting development of add-ins that use analysis results like Structural Code Checking Applications for Revit or other 3rd party applications that want to store or access analysis results in Revit

The primary goals for the Results Builder component can be defined as follows:

- Provide a higher level of API interaction with Revit
- Provide a component that allows for analysis results consumption
- Enable analysis results exchange
- Provide an interface for remote analysis providers

1.2. What is the Results Builder SDK?

The Results Builder SDK is a set of documents and examples that helps to create results related add-ins.

The Results Builder SDK is composed of:

- Documentation
 - Getting Started
 - API documentation
 - Samples

1.3. To whom is it addressed?

The advantages of this technology can be useful to all Revit API developers making results related applications:

- Developing links between Revit and analysis software
- Developing links between Revit and other products consuming analysis results
- Creating Code Checking Applications for Revit

1.4. What are the most interesting features for API developers?

- Ability to query results for structural elements for load cases and load combinations defined in Revit
- Ability to query results envelopes
- Ability to define and use arbitrary results

- Ability to use predefined static analysis results
- Support for multiple results packages
- Interfaces for remote results providers implementation

1.5. What are the benefits for Revit users?

The primary advantages for end-users are:

- Enabling results visualization and documentation
- In long term Results Builder will enable results related applications ecosystem growth around Revit

1.6. What is the difference between the Revit and the Results Builder API?

The Results Builder SDK does not provide any additional access to internal Revit functionality. The Results Builder API extends the Revit API functionality with a set of new components dedicated to results.

1.7. What products can this technology be applied to?

The Results Builder component is dedicated for Revit Structure and Revit products but there are no restrictions to use it for Revit Architecture and/or Revit MEP products.

1.8. How do I get started?

This document describes how to start using Results Builder in your project. The next stage will be to create a more complex one. For this, the pre-defined ResultsInRevit sample will be useful to understand features exposed via the Results Builder SDK and how to use them.

2. SYSTEM REQUIREMENTS

- MS Visual Studio 2012
- .NET Framework 4.5
- Revit 2016, Revit Architecture 2016, Revit Structure 2016 or/and Revit MEP 2016

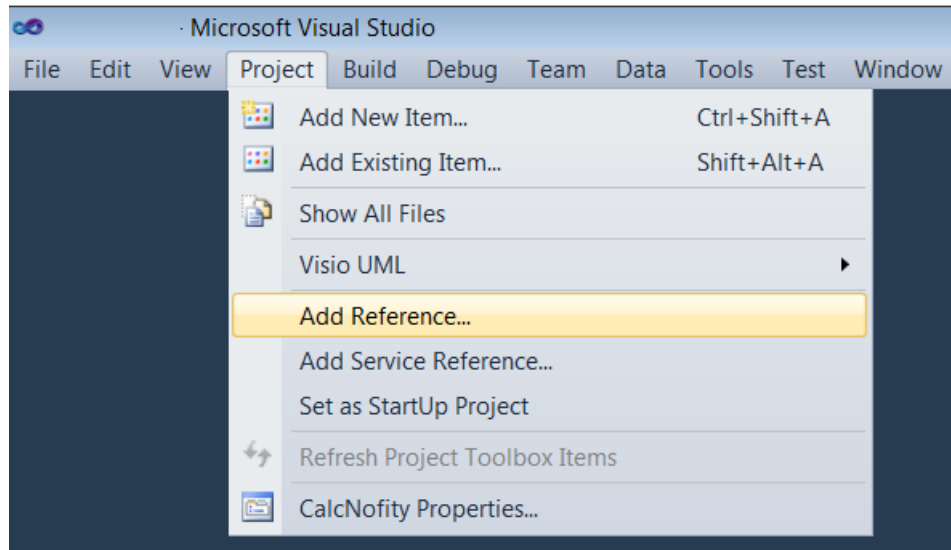
3. CONFIGURATION

No configuration is needed.

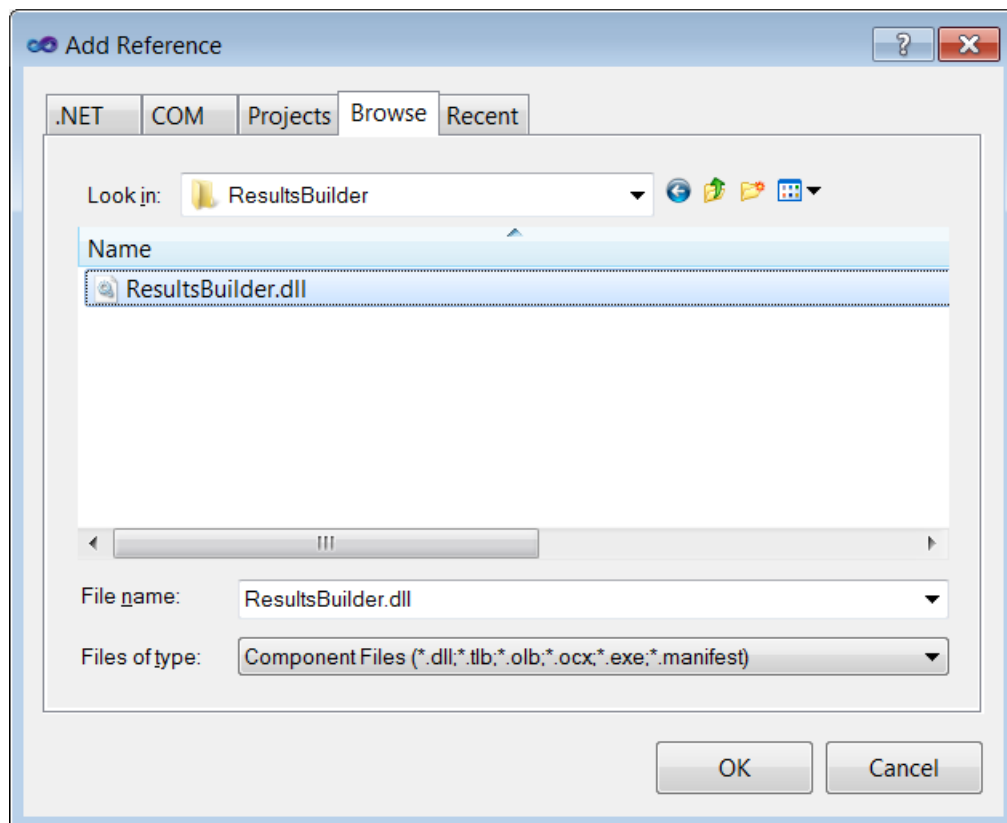
4. FIRST PROJECT CREATION

4.1. Visual Studio solution

In order to start using Results Builder you must add a reference to ResultsBuilder.dll to your project. Choose Add Reference (**Project / Add Reference...**).



The dialog below will appear.



ResultsBuilder.dll is located in “C:\ProgramData\Autodesk\ApplicationPlugins\Structural Toolkit for Revit 2016.bundle\Contents\WinAll\ResultsBuilder” folder.

Select Browse tab and navigate to ResultsBuilder.dll. Click OK.

4.2. Development

Add following using directive line to your source code where you want to use Results Builder:

```
using Autodesk.Revit.DB.ResultsBuilder;
```

This will be enough for anyone who just wants to read results stored in Revit model.

Add following using directive line to your source code if your application wants to store some results in Revit model:

```
using Autodesk.Revit.DB.ResultsBuilder.Storage;
```

5. CREATE RESULTS BUILDER ACCESS

Add creation of ResultsAccess object (passing Autodesk.Revit.Document as parameter) in your source code:

```
ResultsAccess results = ResultsAccess.CreateResultsAccess(doc);
```

and start its methods and properties.