

GDLnucleus for MAC OS

Build system for MAC OS X for parallel editing of GDL objects in ArchiCAD and Sublime Text: Pro version

At the beginning of 2015, a Sublime Text Package for the script language GDL appeared on the developer platform Github. The package comes from the German developer "Runxel", <https://github.com/runxel/GDL-sublime>.

Sublime Text is considered by many freelance and professional developers of all kinds of programming languages, but primarily for web applications, to be the ultimate editor.

Sublime Text is extremely versatile and extremely customisable, and also has the option of installing language packages and plug-ins automatically and keeping them up to date via a so-called package control.

Runxel's package contains the complete syntax highlighting for almost all GDL commands and global variables, whereby own colour schemes can be created or adapted. Code snippets are also possible (some are included in the package), which can be entered via shorttag and TAB. Finally, the package also has autocomplete code.

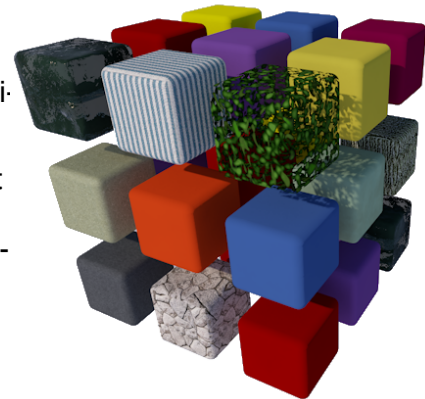
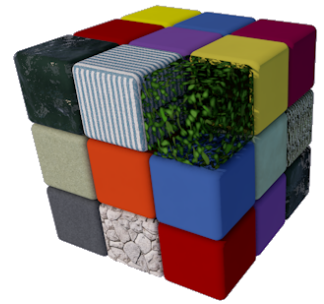
In order for Sublime Text to be used effectively for GDL programming with the present package from Runxel, there should be a direct link to ArchiCAD in some form. Since external editors can theoretically only connect directly with ArchiCAD via the API interface, and since this solution seemed to us too complex and, above all, too expensive, we have established an indirect link with ArchiCAD, whereby the GDL objects are transferred from ArchiCAD to Sublime and visa verce via the LP_XML converter tool (referred to below as the XML converter).

The automation of this process is taken over by the build system described here, which carries out all the necessary conversion steps at the push of a button and thus allows smooth work in such a way that it is possible to switch from ArchiCAD to Sublime Text and back at any time without any losses.

Frank Beister has developed the build system for Windows and Joachim Sühlo the build system for MAC OS X, which we call *GDLnucleus*. This manual only explains how the build system for MAC OS works in the Pro version; the Windows version, which works somewhat differently, is described elsewhere.

Functions and properties

- Triggered by shortcuts in Sublime Text, GSM files created or edited in ArchiCAD are converted into XML files by XML converter and then split into individual script files (3D script, 2D script, master script etc.) so that they can be edited directly in Sublime Text. Old XML files are saved as a backup so that a backup is always available for every build process that is initiated.
- Triggered by shortcuts in Sublime Text, all individual script packages including parameters, headers, etc. are reassembled into a single



XML file and converted back into a GSM file via XM_-Converter. Old GSM files are saved as a backup so that a backup is always available for each build process that is initiated.

- Triggered by shortcuts in Sublime Text, a complete parameter list is output in CSV format
- Triggered by shortcuts in Sublime Text, the graphics stored in special folders are automatically embedded in the GSM files in binary format.
- Simultaneous parallel editing of several GSM files within a Sublime project

Note on the Pro version: The Light version is no longer offered. Instead, the Pro version can be purchased for a voluntary small donation.

Installation

First you need to install Sublime Text if you have not already done so. Download the latest version of Sublime Text from <http://www.sublime-text.com/> and install the program according to the manufacturer's instructions.

Secondly, you need to install the GDL Sublime package from Runxel, see <https://github.com/runxel/GDL-sublime> correspond to the instructions on this website.

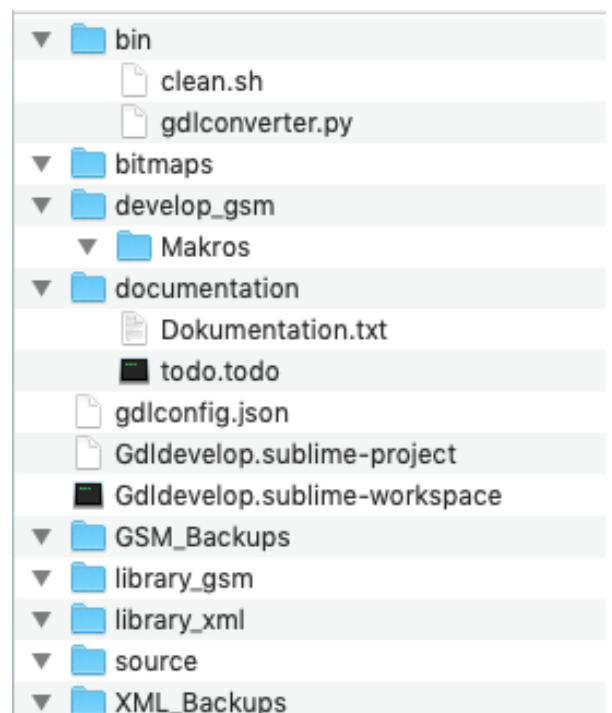
Furthermore, it is recommended to install Package Control, as also recommended by Runxel, and to watch the video tutorials on Sublime Text mentioned there.

You have received a zip file from us which contains the directory structure shown on the right.

Copy the unzipped folder as a template for each new GDL object you are working on. Any necessary global adjustments that you make yourself will you please return to this template at the end of the adjustments so that you are always up to date.

The following adjustment steps are necessary so that you can adapt your template to your needs and always start projects with this basis:

1. Open the file `gdlconfig.json`. Change the path of your preferred XML converter here. Attention: The default setting is the XML converter for ArchiCAD 18. If you create



objects in ArchiCAD 19 or higher, you must use the XML converter 19 ++; if you use the XML converter 19 ++, the objects can only be read in AC19 ++ upwards.

In this file you can also assign a password for the encryption of the GDL object according to the given example. If the object already has a password, it is mandatory to enter it here, otherwise the conversion will fail.

This file also contains the names of additional backup directories.

2. If necessary, you can change some defaults in the `gdlconverter.py` in the bin order, but you do not have to.
You have to adjust line 15 in every project anyway. This is the path of the GSM files and their macros. Please choose different names for the main folder in each project.
Lines 16 - 24: Here you can adjust the folder names in inverted commas if necessary, but then you must also rename the folder names themselves.
Lines 33 - 40: The front part contains the names of the source files, which are arranged in the order 0-9, A-Z in the source folder; recommendation: important scripts at the top, unimportant ones at the bottom. In the back part you will find the script names: please do NOT change them.
3. In the file `Gdldevelop.sublime-project`, you can exclude files and folders from being displayed in the editing area in the "folders" area according to the examples shown there: this is for better clarity.
4. After this step, you should save everything and update your template file. Changes to the template are then only necessary if you want to change the version of the XML converter or make other global adjustments.

The following adjustment steps are required before you can start with a GDL object:

1. Rename the copied folder `GDL-Nucleus.project` to the name of your project, e.g. `cash_desk.project`.
2. Rename the subfolder `"develop_gsm"`. This folder and its subfolders are later to be loaded into the ArchiCAD library.
3. Open the file `gdlconverter.py` in the bin folder: Change line 15 according to point 2.
4. Drag at least one GSM file into the `*.project/*-develop_gsm` folder; drag macros into the macros folder. (All GSM files must be created in ArchiCAD before they can be used in Sublime Text).
5. Start Sublime. In Sublime: Project -> Open Project -> `*.project/GDL-Nucleus.sublime-project`
6. Select Tools --> Build System --> GSM2XML (all Files) from the menu; then click TOOLS --> BUILD (Command B, or F7); the first BUILD process starts and converts the GSMs to XML files and creates the necessary individual scripts in the source folder, each object in its own subfolder.

Use

The first project is now ready for use.

Start ArchiCAD. Add the folder *.project/*develop_gsm to your loaded library.

In ArchiCAD, create one or more GSMs, each with its own GUID, in addition to the file already created under point 4 above and create the parameters there. Save this GSM file in the *.project/*-develop_gsm folder or in the macros folder (if macros are involved).

Go to Sublime Text and select Tools >> Build System >> GSM2XML and press the shortcut for Tools >>Build (ctrl + B or F7).

Now all GSMs created in ArchiCAD should be available in Sublime Text with all scripts and the parameter list, each file in its own subfolder of the source folder. You can now edit all scripts in Sublime Text, theoretically also add parameters manually (but this is easier in ArchiCAD; transferring parameters from one file to another is of course much faster in Parameters.xml).

Change to ArchiCAD

You have edited some scripts in Sublime Text and now want to have the scripts checked in ArchiCAD, test the 3D model or check the user interface.

In Sublime Text, under Tools >> "save all on build" should be activated; this ensures that all open files are saved before a build; if there is no check mark there, you have to save the open files manually before the build process.

Now select Tools >> Build System >> XML2GSM (all Files) or (current file) and then press the shortcut for Tools >>Build (ctrl + B or F7). This causes the build process to write all the individual files back into a single XML file and starts the XML converter, which converts the XML file into a GSM file, creating a backup of the old GSM file with a time stamp in its name.

In ArchiCAD you now click on your shortcut for "Reload libraries" and all the changes you have made in Sublime are available in ArchiCAD.

Another change to Sublime Text

You have created some new parameters in ArchiCAD or made script changes that needed to be checked more frequently in the 3D preview. Now you want to continue working in Sublime Text.

IMPORTANT : Be sure to save your GSM file in ArchiCAD now: unsaved GSM files are not covered by the build system backup.

Now select Tools >> Build System >> GDL2XML (all Files) or (current file) and then press the shortcut for Tools >>Build (ctrl + B or F7). This

starts the build process XML converter, which converts the GSM file(s) into one (or more) XML file(s), creating a backup of the old XML file with a timestamp in the name.

You can then continue working immediately in Sublime Text.

Embedding graphics

- First manually insert a preview image into the GSMs in ArchiCAD.
- Then GSM2XML (all files) or (current file)
- Now the thumbnail is in a subfolder of "bitmaps" (or the thumbnails).
- In the same folder you put all the pictures that are also to be included in the object(s).
- If you now trigger the picture build (Update Picture.xml), the bitmap scripts will be written to GDLPict.xml.
- and the bitmaps are included in the next XML2GSM.

Generating a parameter list as CSV

- Use the build system Parameter.csv (if you select "current file" please mark current Parameter.xml); the output ends up in the folder documentation.
- (Open Office displays the CSV better than Excel for me).

System requirements

This tool works from MAC OSX 10.12.
You also need a version of ArchiCAD that allows saving files.

Questions and suggestions

Questions and suggestions are most welcome, as I would like to know how users use the tool, what the disadvantages, limitations, requests for improvement, etc. are.

Exclusions and licences

This software is delivered "as is". The tool has been extensively tested, but the programmer makes no warranty for possible data loss, data corruption, or hardware damage and other damages including damages for loss of profits, business interruption, loss of business information or data, or other financial loss.

This object is not freeware. All copyrights are held by Auto Joachim Suehlo.

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