bSDD API

Version: 1.0

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Access the API

Note: for any question, you can contact the bSDD support team: bsdd_service_support@catenda.no

API URLs

bSDD provides 2 different instances:

- http://bsdd.buildingsmart.org: Official bSDD dictionary.
- http://test.bsdd.buildingsmart.org: Database allowing to test bSDD, no official content.

The API resources are the same for each instance. The content is different in both instances.

The API entry points are:

- http://bsdd.buildingsmart.org/api/4.0
- http://test.bsdd.buildingsmart.org/4.0

API credentials

The API credentials are the same as the credentials used in the web interface. Credentials are different in the production and in the test database so you have to sign up in each of those to be able to access them from the API resources.

Depending on the resources you want to use, you will need different access rights. The needed access rights for each resource are given in the API documentation.

For example, accessing the API version number (IfdAPI/version) doesn't need to have any rights nor to be logged in.

A succesfull session/login call will send back a cookie that must be sent in the request Headers of next calls needing specific access rights. The cookie will be returned in the Header Set-Cookie of the response and wiil look like:

```
Set-Cookie=peregrineapiusersfullname=Frederic+Grand;Version=1;Path=/;Domain=bsdd.buildingsmart.org;Expires=Fri, 24-Apr-2020 07:07:59 GMT;Max-Age=604800;Comment=bsdd.buildingsmart.org,
```

peregrineapisessionid=2r6CJRGN5DpB9z3LUIzUes;Version=1;Path=/;Domain=bsdd.buildingsmart.org;Expires=Fri, 24-Apr-2020 07:07:59 GMT;Max-Age=604800;Comment=bsdd.buildingsmart.org

API DOCUMENTATION

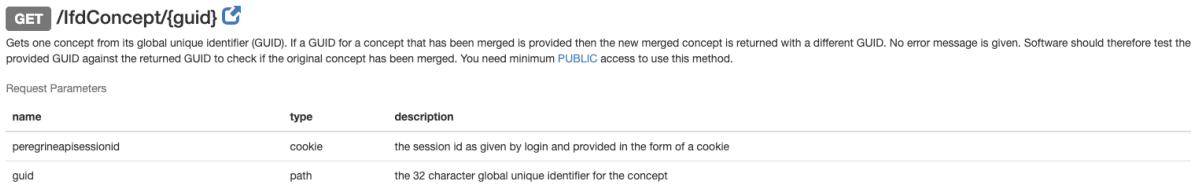
The full documentation is searchable a http://bsdd.buildingsmart.org/docs/. This URL will provide you with a list of available resources and data types available.

By clicking on any resource, you will have access to the list of available requests.

For each request, the documentation will provide:

- A short description
- The method: GET, POST, PUT, DELETE...
- The needed access rights
- The list of parameters
- An example of a response.

For example, for the IfdConcept resource, you can request a concept from its GUID.



The documentation shows:

- Description: Gets one concept from its global unique identifier (GUID). If a GUID for a concept that has been merged is provided then the new merged concept is returned with a different GUID. No error message is given. Software should therefore test the provided GUID against the returned GUID to check if the original concept has been merged.
- Method: GET
- Access rights: You need minimum PUBLIC access to use this method. This means that you don't need to be logged in to access this method.
- Parameters: peregrineapisessionid, guid
- Response example:

Response

```
HTTP/1.1 200 OK
Content-Type: application/json


{
  "guid" : "...",
  "versionId" : "...",
  "versionDate" : "...",
  "status" : "APPROVED",
  "fullNames" : [ {
    "guid" : "...",
    "language" : {
      "guid" : "...",
      "nameInEnglish" : "...",
      "nameInSelf" : "...",
      "languageCode" : "..."
    },
    "name" : "...",
    "languageFamily" : "...",
    "nameType" : "SHORTNAME"
  }, {
    "guid" : "...",
    "language" : {
```

EXAMPLES

NOTE: the examples provided in C# are using the RestSharp library.

LOGIN

session/login

Login example in C#

```
public static string  bSDDLogin() // return the session id
{

   RestRequest request = new RestRequest("http://test.bsdd.buildingsmart.org/api/4.0/session/login", Method.POST);
   request.AddHeader("Content-Type", "application/json");

   request.AddParameter("email", "myemail@myprovider.com", ParameterType .GetOrPost);
   request.AddParameter("password", "*****", ParameterType .GetOrPost);

   RestClient client = new RestClient();
   IRestResponse response = client.Execute(request);
   Console.WriteLine(response.Content);

   string h =response.Headers[3].Name;
   string cookie = response.Headers[3].Value.ToString();

   // getting the sessionid
   string json = @response.Content ;
   JObject o = JObject.Parse(json);
   string sessionid = o.Property("guid").Value.ToString();

   return sessionid;

}
```

Login example in Google Apps script

```
function bSDD_login( login, pswd ) {

  var email = login;
  var password = pswd;

  var payload = {
    "email" : email,
    "password" : password
  };

  var headers = {
    "accept" : "application/json",
  }

  var options = {
    "headers" : headers,
    "payload" : payload,
    "method" : "post",
    "muteHttpExceptions": true
  };

  var response = UrlFetchApp.fetch( 'http://test.bsdd.buildingsmart.org/api/4.0/sessino.login' , options );

  var MyJSON = JSON.parse(response.getContentText());

  var bSDD_UserId = MyJSON.user.guid;
  var bSDDUser    = MyJSON.user.name;
  var SessionId   = MyJSON.guid;

}
```

Example of a JSON response


```
{
 "guid":"3vHuH$0HD2dOyGJg0aqRry",
 "Invalid":"false",
 "timestamp":"2020-04-08T13:05:01.768Z",
 "User":{
        "guid":"1EBA1vGGz6nxTAlpcRgkb8",
         "createdDate":"2015.09.0808:27:04",
        "email":"frederic.grand@catenda.no",
        "memberOf":{
                    "guid":"1Pko5s3HX9ABrE8LChTBW$",
                    "name":"Catenda A/S",
                    "URL":"http://catenda.no"
                   },
        "name":"Frederic Grand",
        "preferredOrganization":"Mediaconstruct",
        "role":"IFD_ADMINISTRATOR"
      }

}
```


GUID of the API session

GUID of the user

Access rights of the user

ACCESS A CONCEPT DETAILS

IfdConcept/{guid}

Access a concept in C#

```
public static void bSSD_ShowConcept( string guid , string peregrinesessionid)
{

   RestRequest request = new RestRequest("http://test.bsdd.buildingsmart.org/api/4.0/IfdConcept/"+guid, Method.GET);
   request.AddHeader("Content-Type", "application/json");
   request.AddParameter("peregrinesessionid",peregrinesessionid , ParameterType.Cookie);
   request.AddParameter("guid", guid , ParameterType.QueryString);
   RestClient client = new RestClient();
   IRestResponse response = client.Execute(request);

   Console.WriteLine("Search for concept : " +  guid  + "\n");
   Console.WriteLine(response.Content);

}
```

Example of a JSON response

{

"guid":"0Q6r2s4Kv6jfSUNP5b90D5",

"definitions":{"guid":"1eUn8ch2TExvVv49VnVfmU","language":{"guid":"3vvsOOoT0Hsm00051Mm008","languageCode":"en","nameInEnglish":"ENGLISH","nameInSelf":"International English"},"description":"The wall represents a vertical construction that bounds or subdivides spaces. Wall are usually vertical, or nearly vertical, planar elements, often designed to bear structural loads. A wall is however not required to be load bearing. NOTE Definition according to ISO 6707-1: vertical construction usually in masonry or in concrete which bounds or subdivides a construction works and fulfils a load bearing or retaining function. NOTE There is a representation of walls for structural analysis provided by a proper subtype of IfcStructuralMember being part of the IfcStructuralAnalysisModel. NOTE An arbitrary planar element to which this semantic information is not applicable (is not predominantly vertical), shall be modeled as IfcPlate. There are two main representations for for wall occurrences: IfcWall with IfcMaterialLayerSetUsage is used for all occurrences of walls, that have a non-changing thickness along the wall path and where the thickness parameter can be fully described by a material layer set. These walls are always represented geometrically by an 'Axis' and a 'SweptSolid' shape representation (or by a 'Clipping' geometry based on 'SweptSolid'), if a 3D geometric representation is assigned. NOTE The entity IfcWallStandardCase has been deprecated, IfcWall with IfcMaterialLayerSetUsage is used instead. IfcWall without IfcMaterialLayerSetUsage is used for all other occurrences of wall, particularly for walls with changing thickness along the wall path (e.g. polygonal walls), or walls with a non-rectangular cross sections (e.g. L-shaped retaining walls), and walls having an extrusion axis that is unequal to the global Z axis of the project (i.e. non-vertical walls), or walls having only 'Brep', or 'SurfaceModel' geometry, or if a more parametric representation is not intended. NOTE The entity IfcWallbElementedCase has been deprecated, IfcWall> with IfcRelAggregates is used to describe occurrences of wall which are aggregated from subordinate elements, such as wall panels. HISTORY New entity in IFC1.0","descriptionType":"DEFINITION"},

"fullNames":[{"guid":"2XuqsAqXKHuO00025QrE$V","language":{"guid":"1ASQw0qJqHuO00025QrE$V","languageCode":"ifc-2X4","nameInEnglish":"IFC","nameInSelf":"IFC 2x4"},"languageFamily":"IFC","name":"IfcWall","nameType":"FULLNAME"},{"guid":"3vuq84oT0Hsm00051Mm008","language":{"guid":"3vvsOYoT0Hsm00051Mm008","languageCode":"de-DE","nameInEnglish":"GERMAN","nameInSelf":"Deutsch"},"languageFamily":"GERMAN","name":"Wand","nameType":"FULLNAME"},{"guid":"2IR_U0qSCHuO00025QrE$V","language":{"guid":"3vvsOOoT0Hsm00051Mm008","languageCode":"en","nameInEnglish":"ENGLISH","nameInSelf":"International English"},"languageFamily":"ENGLISH","name":"WALL","nameType":"FULLNAME"},{"guid":"3vuUOMoT0Hsm00051Mm008","language":{"guid":"3vvsOsoT0Hsm00051Mm008","languageCode":"fr-FR","nameInEnglish":"FRENCH","nameInSelf":"Français"},"languageFamily":"FRENCH","name":"mur","nameType":"FULLNAME"}],

"status":"DRAFT",

"versionDate":"2018.01.05 13:38:30",

"versionId":"1",

"conceptType":"SUBJECT"

}

GET THE CHILDREN OF A CONCEPT

IfdConcept/{guid}/children

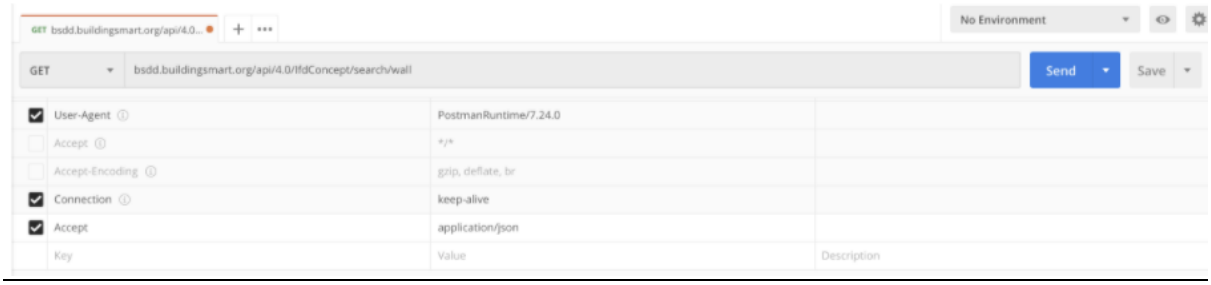
Get the children of a concept in C#

```
public static void bSDD_GetChildren(string guid , string peregrinesessionid){

   RestRequest request = new RestRequest("http://test.bsdd.buildingsmart.org/api/4.0/IfdConcept/"+guid+"/children", Method.GET);
   request.AddHeader("Content-Type", "application/json");
   request.AddParameter("peregrinesessionid",peregrinesessionid , ParameterType.Cookie);
   request.AddParameter("guid", guid , ParameterType.QueryString);
   RestClient client = new RestClient();
   IRestResponse response = client.Execute(request);

}
```

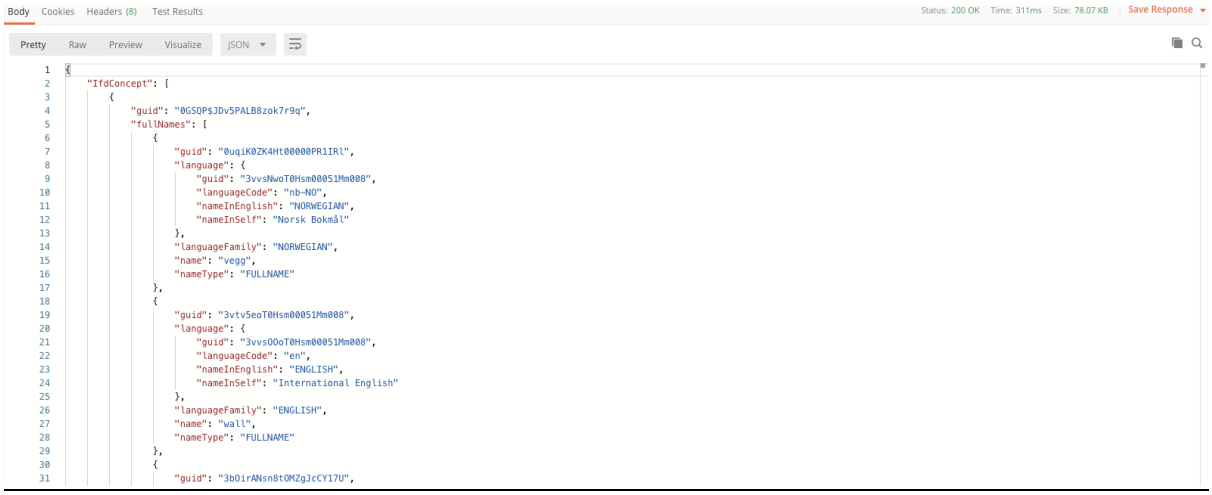
SEARCH FOR CONCEPTS

IfdConcept/search/{searchstring}

Search for ‘wall’ using Postman



JSON response



GET THE LIST OF ALL CONCEPTS THAT EXIST IN BUILDINGSMART DATA DICTIONARY OF A GIVEN TYPE

Get the list of all Subjects in C#

```
public string bSDD_DoGetFilteredListByType(string _ConceptType){ // Tested with _ConceptType = SUBJECT
        RestRequest request = new RestRequest(“http://bsdd.buildingsmart.org/IfdConcept/filter/” + _ConceptType,
Method.GET);
        request.AddHeader("Cookie", Cookie); // Cookie returned by the session/login ressource
        IRestResponse mRep = bSDD_DoRequest( request );
        return mRep.Content;
}
```