DATA AIN’T DIFFICULT

NIGEL DAVIES, DIRECTOR
WHO ARE WE?

- **Nigel Davies**
  - 20+ years’ experience in Engineering and Architecture
  - Chair of the AEC (UK) CAD & BIM Protocols
  - Regular writer and presenter

- **Evolve Consultancy**
  - CAD & BIM Management Services
  - Technology integration
  - Project support & mentoring

- **Bennetts Associates, John McAslan + Partners, MLM Group, Tideway, Wilkinson Eyre…**
DATA ACCORDING TO THE BOOK OF BIM

A.73 Information modelling

Use of data to provide information through better understanding of functions to calculate.

A.97 Project information model (PIM)

Information model developed during the design and project consisting of functions to calculate.

Fundamental principles for Level 2 information modelling

NOTE 2 One of the key Level 2 requirements is the exchange standard of COBie and PDF, as well as intended copies of the native files.

NOTE 3: The model is developed into a virtual construct containing all the objects to be or constructed. It becomes the Information Model once handed over.

Supplier's information exchange

Employer's decision point

1

2

3

evolve consultancy
WHAT IS COBIE?

Construction (to) Operations Building Information Exchange
Can’t Operate a Building In Excel
WHAT IS COBIE?

“COBie information only answers three questions:

• What rooms and equipment are delivered in a building?
• Where does a technician go to work on that equipment?
• How is the equipment operated and maintained?”
WHAT IS COBIE?
UNDERSTANDING COBIE

4.2.3.2.2 Specific COBie spreadsheet terms and definitions
UNDERSTANDING COBIE

BSI Standards Publication

BS 1192-4:2014

6.3.1 General

Part 4: Fulfilling employer’s information exchange requirements using COBie – Code of practice
### COBIE CONTENT

<table>
<thead>
<tr>
<th>text</th>
<th>required</th>
</tr>
</thead>
<tbody>
<tr>
<td>text</td>
<td>reference to other sheet or pick list</td>
</tr>
<tr>
<td>text</td>
<td>external reference</td>
</tr>
<tr>
<td>text</td>
<td>if specified as required</td>
</tr>
<tr>
<td>text</td>
<td>secondary information when preparing product data</td>
</tr>
</tbody>
</table>
### COBIE CONTENT

#### 4.2.3.2.2.1 contact
A worksheet in the COBie spreadsheet. Each row in the Contact worksheet identifies a person or company referenced elsewhere in a COBie spreadsheet. Contact.Email is the primary key for this worksheet.

<table>
<thead>
<tr>
<th>Email</th>
<th>ContactId</th>
<th>CreatedOn</th>
<th>Category</th>
<th>Company</th>
<th>Phone</th>
<th>EmailSystem</th>
<th>EmailObject</th>
<th>EmailUnsubscribe</th>
<th>Description</th>
<th>Notes</th>
<th>Projects</th>
<th>Name</th>
<th>Title</th>
<th>Location</th>
<th>Region</th>
<th>Status</th>
<th>Timesheet</th>
<th>Usage</th>
<th>UsageCost</th>
<th>UsageDescription</th>
<th>WorkSchedule</th>
<th>ProjectId</th>
<th>ProjectType</th>
<th>Team</th>
<th>Description</th>
<th>Notes</th>
<th>Phone</th>
<th>ProjectName</th>
<th>Role</th>
<th>Sites</th>
<th>Street</th>
<th>Town</th>
<th>State</th>
<th>PostalCode</th>
<th>Country</th>
</tr>
</thead>
</table>

#### 4.2.3.2.2.16 Facility
A worksheet in the COBie spreadsheet. There may only be one row in the facility worksheet. Projects composed of multiple facilities, shall be described by separate COBie spreadsheets. Facility.Name is the primary key for this worksheet.
COMPONENT EXAMPLE

<table>
<thead>
<tr>
<th>Name</th>
<th>CreatedBy</th>
<th>CreatedOn</th>
<th>TypeName</th>
<th>Space</th>
<th>Description</th>
</tr>
</thead>
</table>

4.2.3.2.2.86
**Component.Name**

the Component.Name must match the value found on design drawing schedules at the equivalent project stage of the current deliverable. For equipment scheduled by Type (and not Component) naming requirements to ensure unique names for every component shall be specified by contract.
## COMPONENT EXAMPLE

<table>
<thead>
<tr>
<th>Name</th>
<th>CreatedBy</th>
<th>CreatedOn</th>
<th>TypeName</th>
<th>Space</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instance.Mark</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 4.2.3.2.1.1 CreatedBy

*the contact email of the person or company creating or updating a row of COBie data.*

**Email**

nigel@evolve-consultancy.com
## COMPONENT EXAMPLE

<table>
<thead>
<tr>
<th>Name</th>
<th>CreatedBy</th>
<th>CreatedOn</th>
<th>TypeName</th>
<th>Space</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>InstanceMark</td>
<td>Email</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</table>
COMPONENT EXAMPLE

<table>
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</thead>
<tbody>
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<td>Instance.Mark</td>
<td>Email</td>
<td>Date</td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

```
4.2.3.2.2.55
Type.Name
the Type.Name must match the value found on design drawing schedules at the equivalent project stage of the current deliverable.
```
COMPONENT EXAMPLE

4.2.3.2.2.41  
**Space.Name**

the Space.Name must match the value found on design drawings at the equivalent project stage of the current deliverable.

e tc
RELATIONSHIPS

• BS1192-4 section 6.3.1

a) Every Space (location) should be assigned to one Floor (region).
b) Every Space (location) should be assigned to at least one Zone.
c) Every Floor and Zone should have at least one Space (location).
d) Every Component should be assigned to at least one Space (location), from which it is used, inspected or maintained.
e) Every Component should be assigned to one Type.
f) Every Component should be assigned to at least one System, identifying its function.
g) Every Type should apply to at least one Component.
RELATIONSHIPS

- Facility.SiteName
- Facility.Name
- Floor.Name
- Zone.Name
- System.Name
- Space.Name
- Component.TypeName
- Component.Name
**EXTERNAL DOCUMENTS**

<table>
<thead>
<tr>
<th>Name</th>
<th>Created By</th>
<th>Created On</th>
<th>Category</th>
<th>Approval By</th>
<th>Stage</th>
<th>Sheet Name</th>
<th>Row Name</th>
<th>Directory</th>
<th>File</th>
</tr>
</thead>
</table>

**4.2.3.2.2.157**

**Document**

### EXTERNAL DOCUMENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>CreatedBy</th>
<th>CreatedOn</th>
<th>Category</th>
<th>ApprovalBy</th>
<th>Stage</th>
<th>SheetName</th>
<th>RowName</th>
<th>Directory</th>
<th>File</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performance Spec</td>
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<td></td>
</tr>
</tbody>
</table>

#### 4.2.3.2.2.157 Document


- Name = document name
### EXTERNAL DOCUMENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>CreatedBy</th>
<th>CreatedOn</th>
<th>Category</th>
<th>ApprovalBy</th>
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<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

#### 4.2.3.2.2.157 Document


- **Name** = document name
- **SheetName** = to which sheet is the document associated
EXTERNAL DOCUMENTS

4.2.3.2.2.157
Document


- Name = document name
- SheetName = to which sheet is the document associated
- RowName = the Name value of the related sheet and row
ATTRIBUTES

4.2.3.2.2.168
Attribute
a worksheet in the COBie spreadsheet. Attribute records identify external files that provide information associated with data in a given COBie deliverable. Attribute.Name, Attribute.SheetName, Attribute.RowName, Attribute.Category comprises the compound key for this worksheet.

4.2.3.2.2.157
Document

3.6.2 Attribute
named specific characteristic associated to an asset

Constant Attributes (excluding identification, quantities and location details) should be assigned to:

• the Type or System, not the Component; and
• the Floor (region) or Zone, not the Space (location).
ADDITIONAL DATA

Any additional sheets specified by the employer should occur in the deliverable after the final PickLists sheet.

Any additional columns specified by the employer should occur to the right of the final specified columns and should have a header column name.

Any additional PickList values specified by the employer should occur below the recommended values.

The format of each information exchange shall be defined by the organization that has defined the OIR and the AIR.

*NOTE 2 Where COBie is used for information exchange then the content of the COBie files should be determined by the AIR.*
IT’S AS EASY AS FLYING…

“THE KNACK OF FLYING IS LEARNING HOW TO THROW YOURSELF AT THE GROUND AND MISS”

Douglas Adams

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