**DATA CATALOGUE**

**FOR**

**COMBINED SYSTEM DEVELOPMENT SERVICES**

**FOR**  
**LICENSING SELF-CERTIFICATION PORTAL**  
**OF**  
**BUILDINGS DEPARTMENT**

**Version: 1.1**

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# **1. Introduction**

This document provides a description of the data catalog for the Combined System Development Services of the LSCP of the Buildings Department. The system uses a dual-database architecture with MongoDB for operational data and MSSQL for transactional data.

# **2. Definitions**

| Terms | Definitions |
| --- | --- |
| BD | Buildings Department |
| LSCP | Licensing Self-Certification Portal |
| AP | Authorized Person |
| RSE | Registered Structural Engineer |
| IAM Smart | A single digital identity authentication platform for the Hong Kong Government |
| OTP | One-Time Password |
| BD Letter | A formal letter issued by Buildings Department |
| LSO | Licensing Subject Officer |
| MSSQL | Microsoft SQL Server database |
| MongoDB | NoSQL document-oriented database |

# **3. Data Architecture Overview**

The LSCP system employs a dual-database architecture:

## MongoDB Database

MongoDB serves as the primary operational database, handling dynamic application data, user sessions, and day-to-day operations. It provides flexibility for evolving data structures and supports high-volume read operations.

**Key Statistics:**

* Database Size: 88.10 MB
* Collections: 12
* Total Documents: 1,278,983
* Total Data Size: 371.24 MB

## MSSQL Database

Microsoft SQL Server serves as the transactional database, storing structured data related to applications, submissions, and system reference data. It provides robust data integrity and transaction support.

**Key Database:** bd\_scs **Schema:** dbo

## Data Flow Between Systems

* MongoDB handles frontend operational data and user sessions
* MSSQL stores backend transactional data and historical records
* Data synchronization occurs through application services
* Critical data is maintained in both systems with appropriate reconciliation mechanisms

## Data Entity Relationships

The following diagram represents the high-level relationships between key entities across both databases:

+----------------+  
 | Users |  
 +----------------+  
 |  
 v  
+----------------+ +----------------+ +----------------+  
| Applications |<---------->| Cases |<---------->| Submissions |  
+----------------+ +----------------+ +----------------+  
 | | |  
 v v v  
+----------------+ +----------------+ +----------------+  
| Attachments | | Tasks | | Eminutes |  
+----------------+ +----------------+ +----------------+

# **4. Database Specifications**

This section details the structure of both databases used in the LSCP system.

## 4.1 MongoDB Collections

MongoDB is used for operational data with the following collections:

### 4.1.1 tasks

**Collection Statistics**

* Document Count: 5,523
* Size: 0.99 MB
* Average Document Size: 0.18 KB

**Field Structure** | Field Name | Data Type | Description | | :--------- | :-------- | :---------- | | \_id | objectId | Unique identifier | | application | objectId | Reference to application | | createdAt | date | Creation timestamp | | status | string | Task status | | submissionCase | objectId | Reference to submission case | | taskType | string | Type of task | | team | string | Team assigned to the task | | user | string/objectId | User assigned to the task | | \_\_v | int | Version number |

### 4.1.2 eminutes

**Collection Statistics**

* Document Count: 133
* Size: 0.03 MB
* Average Document Size: 0.24 KB

**Field Structure** | Field Name | Data Type | Description | | :--------- | :-------- | :---------- | | \_id | objectId | Unique identifier | | comment | string | Comment text | | content | string | Main content | | createdAt | date | Creation timestamp | | efolio | string | Electronic folio reference | | eminuteId | string | Minute identifier | | from | objectId/string | Sender reference | | status | string | Status of the minute | | subject | string | Subject of the minute | | submissionCase | objectId | Reference to submission case | | sysFileRefId | string | System file reference ID | | to | objectId/string | Recipient reference | | \_\_v | int | Version number |

### 4.1.3 submissions

**Collection Statistics**

* Document Count: 0
* Size: 0.00 MB
* Average Document Size: 0.00 KB

**Note:** This collection exists but currently contains no documents.

### 4.1.4 applications

**Collection Statistics**

* Document Count: 381
* Size: 0.36 MB
* Average Document Size: 0.96 KB

**Field Structure** | Field Name | Data Type | Description | | :--------- | :-------- | :---------- | | \_id | objectId | Unique identifier | | APP13 | object/array | APP13 form information | | AddressOfPremiseCN | string | Premises address (Chinese) | | AddressOfPremiseEN | string | Premises address (English) | | ApplicationNo | string | Application number | | ApplicationType | string | Type of application | | NameOfSchoolCN | string | School name (Chinese) | | NameOfSchoolEN | string | School name (English) | | assignedBS | objectId/string | Assigned Building Surveyor | | assignedGR | objectId | Assigned General Registry | | assignedSBS | string | Assigned Senior Building Surveyor | | createdAt | date | Creation timestamp | | updatedAt | date | Last update timestamp | | \_\_v | int | Version number | | ... | ... | (Additional fields omitted for brevity) |

## 4.2 MSSQL Tables

MSSQL database (bd\_scs) contains the following tables in the dbo schema:

### 4.2.1 \_\_EFMigrationsHistory

**Description**: Stores Entity Framework migrations history

**Table Structure** | Column Name | Data Type | Length | Nullable | PK | Description | | :---------- | :-------- | :----- | :------- | :- | :---------- | | MigrationId | nvarchar | 300 | No | Yes | Migration identifier | | ProductVersion | nvarchar | 64 | No | No | EF Core product version |

### 4.2.2 AdrBlk

**Description**: Stores building address information

**Table Structure** | Column Name | Data Type | Length | Nullable | PK | Description | | :---------- | :-------- | :----- | :------- | :- | :---------- | | ADR\_BLK\_ID | bigint | 8 | No | Yes | Address block ID | | BLK\_TYPE\_ID | bigint | 8 | Yes | No | Block type ID | | BLDG\_CAT\_ID | bigint | 8 | Yes | No | Building category ID | | BLDG\_USAGE\_ID | bigint | 8 | Yes | No | Building usage ID | | SYS\_REGION\_ID | bigint | 8 | Yes | No | System region ID | | SYS\_DISTRICT\_ID | bigint | 8 | Yes | No | System district ID | | AREA\_ID | bigint | 8 | Yes | No | Area ID | | BLK\_DESC\_E\_ID | bigint | 8 | Yes | No | Block description English ID | | BLK\_NO\_NUM | int | 4 | Yes | No | Block number (numeric) | | BLK\_NO\_ALPHA | nvarchar | 20 | Yes | No | Block number (alphanumeric) | | BLDG\_NAME\_E1 | nvarchar | 90 | Yes | No | Building name English 1 | | BLDG\_NAME\_E2 | nvarchar | 90 | Yes | No | Building name English 2 | | BLDG\_NAME\_E3 | nvarchar | 90 | Yes | No | Building name English 3 | | BLDG\_NAME\_C1 | nvarchar | 160 | Yes | No | Building name Chinese 1 | | BLDG\_NAME\_C2 | nvarchar | 160 | Yes | No | Building name Chinese 2 | | BLDG\_NAME\_C3 | nvarchar | 160 | Yes | No | Building name Chinese 3 | | OSADR\_E1 | nvarchar | 90 | Yes | No | Original source address English 1 | | ... | ... | ... | ... | ... | ... | | OBSOLETE | nvarchar | 160 | Yes | No | Obsolete flag | | CreatedAt | datetime2 | 8 | Yes | No | Creation timestamp | | UpdatedAt | datetime2 | 8 | Yes | No | Last update timestamp |

### 4.2.3 AdrBlk\_T

**Description**: Temporary table for building address information

**Table Structure** | Column Name | Data Type | Length | Nullable | PK | Description | | :---------- | :-------- | :----- | :------- | :- | :---------- | | ADR\_BLK\_ID | bigint | 8 | No | Yes | Address block ID (identity) | | BLK\_TYPE\_ID | bigint | 8 | Yes | No | Block type ID | | BLDG\_CAT\_ID | bigint | 8 | Yes | No | Building category ID | | ... | ... | ... | ... | ... | ... | | createdAt | datetimeoffset | 10 | No | No | Creation timestamp | | updatedAt | datetimeoffset | 10 | No | No | Last update timestamp |

### 4.2.4 ApplicationCases

**Description**: Stores application case information

**Table Structure** | Column Name | Data Type | Length | Nullable | PK | Description | | :---------- | :-------- | :----- | :------- | :- | :---------- | | Id | bigint | 8 | No | Yes | Case ID (identity) | | ApplicationNo | nvarchar | 30 | Yes | No | Application number | | CreatedAt | datetime2 | 8 | Yes | No | Creation timestamp | | CreatedBy | nvarchar | 200 | Yes | No | Creator | | UpdatedAt | datetime2 | 8 | Yes | No | Last update timestamp | | UpdatedBy | nvarchar | 200 | Yes | No | Last updater | | FromId | bigint | 8 | Yes | No | Source ID | | FileDate | datetime2 | 8 | Yes | No | File date |

### 4.2.5 ApplicationFiles

**Description**: Stores application file information

**Table Structure** | Column Name | Data Type | Length | Nullable | PK | Description | | :---------- | :-------- | :----- | :------- | :- | :---------- | | Id | bigint | 8 | No | Yes | File ID (identity) | | FileName | nvarchar | 200 | Yes | No | File name | | DocumentType | nvarchar | 40 | Yes | No | Document type | | SignType | nvarchar | 60 | Yes | No | Sign type | | FilePath | nvarchar | 510 | Yes | No | File path | | CreatedAt | datetime2 | 8 | Yes | No | Creation timestamp | | ... | ... | ... | ... | ... | ... | | RemoveStatus | nvarchar | 100 | Yes | No | Remove status |