

RALLY FIELD TECHNICIAN APP – DATABASE ERD

This document describes the core database tables and their relationships (Entity Relationship Diagram in textual form) for the Rally Field Technician App and Admin Panel.

1. TABLE: users

Columns:

- id (PK)
- name
- email (unique)
- password_hash
- role (TECHNICIAN / ADMIN)
- status (ACTIVE / DISABLED)
- created_at
- updated_at

Relationships:

- One-to-many with tech_pdfs (created_by)
- One-to-many with buildings (optional: last_updated_by)

2. TABLE: buildings

Columns:

- id (PK)
- display_name
- short_name (optional)
- address_line1
- address_line2 (optional)
- city
- state
- country
- lat (optional)
- lng (optional)
- serviced_by (enum/string)
- technology_type (e.g., GPON, DSL)
- infrastructure_type (e.g., ClearTrack, Conduit)

- techs_per_install_raw (string from Excel)
- complexity_score (int 0–100)
- required_techs (int)
- notes (text)
- created_at
- updated_at

Relationships:

- One-to-many with floors
- One-to-many with risers
- One-to-many with images
- One-to-many with tech_pdfs
- Many-to-many with technologies (via building_technologies)

3. TABLE: technologies

Columns:

- id (PK)
- name (e.g., Nokia, Huawei, SmartOLT, Positron)
- description (optional)

Relationships:

- Many-to-many with buildings (via building_technologies)
- One-to-many with tech_pdfs

4. TABLE: building_technologies

Columns:

- id (PK)
- building_id (FK → buildings.id)
- technology_id (FK → technologies.id)
- is_primary (bool)

Relationships:

- Many-to-one to buildings
- Many-to-one to technologies

5. TABLE: floors

Columns:

- id (PK)
- building_id (FK → buildings.id)
- floor_label (string: "G", "1", "2", "PH")
- sort_order (int)
- created_at
- updated_at

Relationships:

- Many-to-one to buildings
- One-to-many with risers (if riser is anchored to a floor)
- One-to-many with images (floor-specific images)

6. TABLE: risers

Columns:

- id (PK)
- building_id (FK → buildings.id)
- name (e.g., "Riser 1", "Riser East")
- side (enum: SINGLE / EAST / WEST)
- floor_id (FK → floors.id) (main floor where riser is located)
- description (text)
- created_at
- updated_at

Relationships:

- Many-to-one to buildings
- Many-to-one to floors
- One-to-many with images (riser-specific)
- Optional: Many-to-many to floors via riser_floor_links (for coverage)

7. TABLE: riser_floor_links (optional advanced)

Columns:

- id (PK)
- riser_id (FK → risers.id)
- floor_id (FK → floors.id)
- distance_meters (optional)

- `is_above` (bool) // in relation to riser's main floor

Used for:

- More advanced “nearest above / below” calculation for risers.

8. TABLE: images

Columns:

- `id` (PK)
- `building_id` (FK → buildings.id)
- `floor_id` (FK → floors.id, nullable)
- `riser_id` (FK → risers.id, nullable)
- `category` (enum: PARKING / RISER / LOBBY / OTHER)
- `title`
- `description`
- `file_url`
- `sort_order`
- `created_at`
- `updated_at`

Relationships:

- Many-to-one to buildings
- Optional many-to-one to floors
- Optional many-to-one to risers

9. TABLE: tech_pdffs

Columns:

- `id` (PK)
- `building_id` (FK → buildings.id)
- `technology_id` (FK → technologies.id)
- `title`
- `file_url`
- `created_by` (FK → users.id)
- `created_at`
- `updated_at`

Relationships:

- Many-to-one to buildings

- Many-to-one to technologies
- Many-to-one to users (created_by)

10. ERD SUMMARY (TEXT DIAGRAM)

```
users (1) ■■■■■< tech_pdfs >■■■■■ (1) technologies
^
|
v
buildings (1) ■■■■■< floors
| | \■■■■■< risers >■■■■■ (optional) riser_floor_links >■■■■■ floors
|
■■■■■< images

buildings (M) >■■■■■< (M) technologies via building_technologies
```

Key Relationships:

- A building has many floors, risers, images, and tech_pdfs.
- A technology can be linked to many buildings.
- A riser belongs to a single building and is anchored to a main floor.
- Images can belong to a building, and optionally a specific floor or riser.
- ONT PDFs (tech_pdfs) are building + technology specific and are created by users.

This schema supports:

- Technician app lookups for building → floors → risers → images → PDFs.
- Admin panel CRUD for all related entities.