PMT

CARPORT
Project Schedule

Responsibility PMT

1 Inquiry PMT

2 Building application PMT

3 Planning order PMT

4 Static PMT

4 Soil survey

5 Test engineer

6 Offer PMT

6 Installation company

7 Delivery PMT

7 Realization

Responsibility CUSTOMER / EPC

PHASE I
CONCEPT
PRE-DESIGN

1 Inquiry
First conception and cost estimation
Revision according to customer requirements

2 Building application
Assign Architect
Examine building law requirements
Obtaining planning documents

3 Planning order
Detail plan
Consider all planning requirements

PHASE II
FINALIZATION
APPROVAL

4 Static
Static calculation and documentation
Project-specific production plan

4 Soil survey
Commission soil survey
Foundation design

5 Test engineer
Assign external test engineer
Technical release

6 Offer
Prepare orderable offer
Delivery time plan

6 Installation company
Assign Installation company
Order carport
Construction schedule

PHASE III
IMPLEMENTATION

7 Delivery
Order and deliver components

7 Realization
Install carports
Successful project completion

Description
During the initial inquiry, we develop a first concept according to your specifications, considering the site-related snow and wind loads, together with an initial cost estimation.

From our project overview, the power output of each individual carport rows can be derived and the cost estimation gives you an overview of the components, which you can assign individually.

Please note that we need the following data for your initial design:
- Location with exact address
- Sketch of the parking spaces to be roofed
- Module dimensions and module output

Please consider our minimum project size of 120 parking spaces.

Goals
- Layout meets the customer's requirements and satisfies planning specifications of all parties involved
- An according cost estimation is present

Duration
The first rough concept with cost estimation and project overview takes in general 3 days. Usually, several revisions follow until the layout is finalized. The duration of this decision process is highly dependent on the client, customer and other parties involved and can take up to several months.

1 Inquiry

2 Building application

3 Planning order

4 Static

4 Soil survey

5 Test engineer

6 Offer

6 Installation company

7 Delivery

7 Realization

Description
The building application (including object-, drainage and fire protection planning) can be taken over by PMT. Approval planning should be started as early as possible to comply with building regulations - which are essential for the later planning. Depending on the municipality, there are different requirements regarding the implementation.

Examples are:
- Specifications for drainage / infiltration
- Minimum distances to property lines and buildings
- Consideration of fire department movement areas
- Ensuring the supply of extinguishing water
- Compliance with maximum sealed areas
- Green space plans / compensation areas
- Glare guidelines
- Information on explosive ordnance clearance
- Guidelines for nature conservation

The building application must be signed by a person authorized to submit building documents (e.g. an architect), who is responsible as the designer or object planner.

During the application, it is advisable to obtain all relevant planning documents. This includes, among other things, division information (pipe / cable plans), cadastral excerpts (properties, explosive ordnance cadaster, etc.), terrain data, existing soil surveys and other documents relevant to the carport layout.

Goals
- Examination of building regulations
- Compilation of documents relevant to planning
- Building permit

Duration
The building permit usually takes up to 6 months, depending on the municipality and may take longer in individual cases.

1 Inquiry

2 Building application

3 Planning order

4 Static

4 Soil survey

5 Test engineer

6 Offer

6 Installation company

7 Delivery

7 Realization

Description
Within the planning phase, the current layout is checked in detail by commissioning the planning order.

Subjects of this investigation by PMT are:
- Collisions of existing underground line runs with the carport driven piles
- Special requirements, which must meet the building application
- Analyzation of terrain slopes, which may have an impact on the structural design
- Special designs for accessory components (e.g. mounting brackets for inverters, sub-distributors or similar)
- Preparation of project-related installation specifications

Goals
- Layout complies with all planning specifications and building regulations and has been approved by all parties involved
- Statically relevant boundary conditions (type of purlin, roof depth, support spacing, attachment parts,...) are finally defined

Duration
The process usually takes at least 4 weeks up to several months. The scope of the specifications and boundary conditions to be checked, as well as the quantity and complexity of the challenges that arise during this phase are significant for the duration.

1 Inquiry

2 Building application

3 Planning order

4 Static

4 Soil survey

5 Test engineer

6 Offer

6 Installation company

7 Delivery

7 Realization

1 Inquiry

2 Building application

3 Planning order

4 Static

Description
Due to strong, technical communication, the structural analysis is commissioned by PMT. The following requirements must be met before the static calculation starts:

- The layout (support distances, roof depth, number of carport rows) corresponds to the final status
- The type of purlin (wood or steel) must be defined
- Special constructions (which are not standard carport) must be defined

Later changes to static influence factors lead to additional expenses. Extra costs need to beared by the customer - unless otherwise at fault.

Goals

- Static design of all components used (concrete base, steel components, purlins, trapezoidal sheet, fasteners)
- Determination of the connection loads for the foundation design
- Summary of all results in a verifiable structural analysis report (proof of stability)
- Preparation of project-related production plans

Duration
The preparation of the structural analysis and the project-related production plans takes approx. 8-12 weeks, depending on the size of the project and the workload.

4 Soil survey

Description
Parallel to the structural design, the soil survey with foundation design can be initiated. The commissioning of a geotechnical office is carried out directly by the customer. We will be happy to provide you with contact details of a suitable office.

A binding dimensioning of the embedment depth by the soil surveyor is important. This eliminates the need for additional verification during the construction of the carports. Depending on the geotechnical office performing the design, the methodology of the design may vary. Usually, pile skin friction and pile tip pressure or pile resistances are determined and foundation depths are calculated based on the connection loads from the structural analysis.

Please note that, in general, no binding embedment depth can be measured from existing soil surveys (pile driving, pile core probing, load plate pressure tests, test trenching,...). Existing soil surveys are, however, very helpful in the initial project phases in order to be able to assess the soil quality at an early stage.

Goals

- Determination of local soil properties
- Calculation of a binding embedment depth
- Summary of all results in a verifiable report

Duration
The soil survey including reporting takes about 3-4 weeks.

5 Test engineer

6 Offer

6 Installation company

7 Delivery

7 Realization

1 Inquiry

2 Building application

3 Planning order

4 Static

4 Soil survey

5 Test engineer

6 Offer

6 Installation company

7 Delivery

7 Realization

Description
After structural analysis and foundation design have been completed, the proof of stability (static calculation and all belonging documents) must be checked by an external expert in accordance with § 9 PrüfSStBauVO (German law). In general, the external test engineer is commissioned by the building owner. A list of all recognized test engineers for all German states can be found at www.bvpi.de.

Please note, the need for an external test engineer depends on state law. We request an early-stage clarification of this topic with local authorities, in case the project site is not located in Germany.

Objects of this inspection are proof of compliance with all technical regulations and verification of the static calculation and belonging documents submitted. If necessary, changes must be made to the static approaches or component design. Furthermore, the inspection includes random checks during construction by the responsible test engineer.

The documents for the inspection must be submitted to the test engineer in form of two written copies. The scope of required documents varies depending on the testing office, but includes at least:

- Static documentation / proof of stability
- Foundation verification
- Production plans incl. installation plans of purlins

Please note that under no circumstance construction is allowed to start before technical release by the test engineer!

Goals

- Obtain complete technical release in the form of multiple test reports

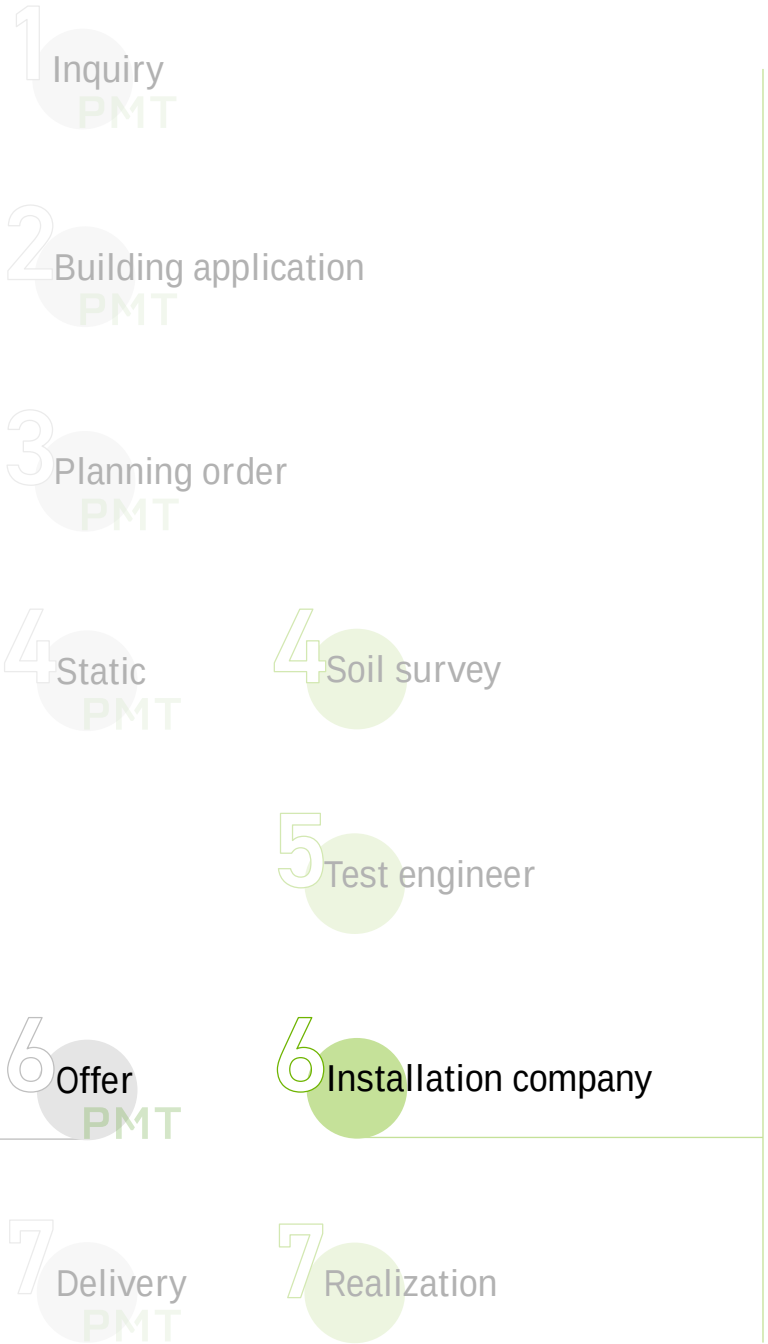
Duration
The review of the documents takes about 6-8 weeks, depending on the workload of the test engineer.

Description
The inspection of the project has been completed and the design of all structural components has been officially confirmed. Quotations can now be obtained from our suppliers. Out of this, we will prepare a complete, orderable offer for the project for the first time.

To coordinate the delivery times, the provision of a construction schedule by the customer or the installation company is necessary.

Goals
- Offer (available for order) for the carports and all desired accessories
- Delivery schedule

Duration
The provision of the orderable offer takes about 2-3 weeks.



Description
At the same time, the customer gets into contact with an Installation company. Please ensure sufficient qualification in the departments of steel construction and precast concrete components. An early inspection of the site by the Installation company is recommended.

The execution plan is transmitted, special features of the project are discussed in advance and delivery dates of the individual components are coordinated. The installation company provides a quotation for the desired scope of work as well as a construction schedule.

We will be happy to provide you with contact details of a suitable Installation company.

Goals
- Coordination of installation-related issues
- Installation offer
- Construction schedule

Duration
The preparation of the construction schedule and the internal coordination vary depending on the project and take approx. 3-6 weeks.

Description
The components are delivered according to the schedule. Please ensure proper incoming goods inspection with photo documentation before and during unloading of the delivered components. Notice of damage after unloading usually cannot be clearly identified as transport or manufacturing defects and makes it more difficult to file a complaint.

Goals
- Smooth delivery and provision of the carport material incl. the ordered accessories

Duration
A production time of 10 - 14 weeks from order is to be expected for the entire material. Individual components can be delivered earlier by agreement. The duration of delivery depends on the construction schedule.

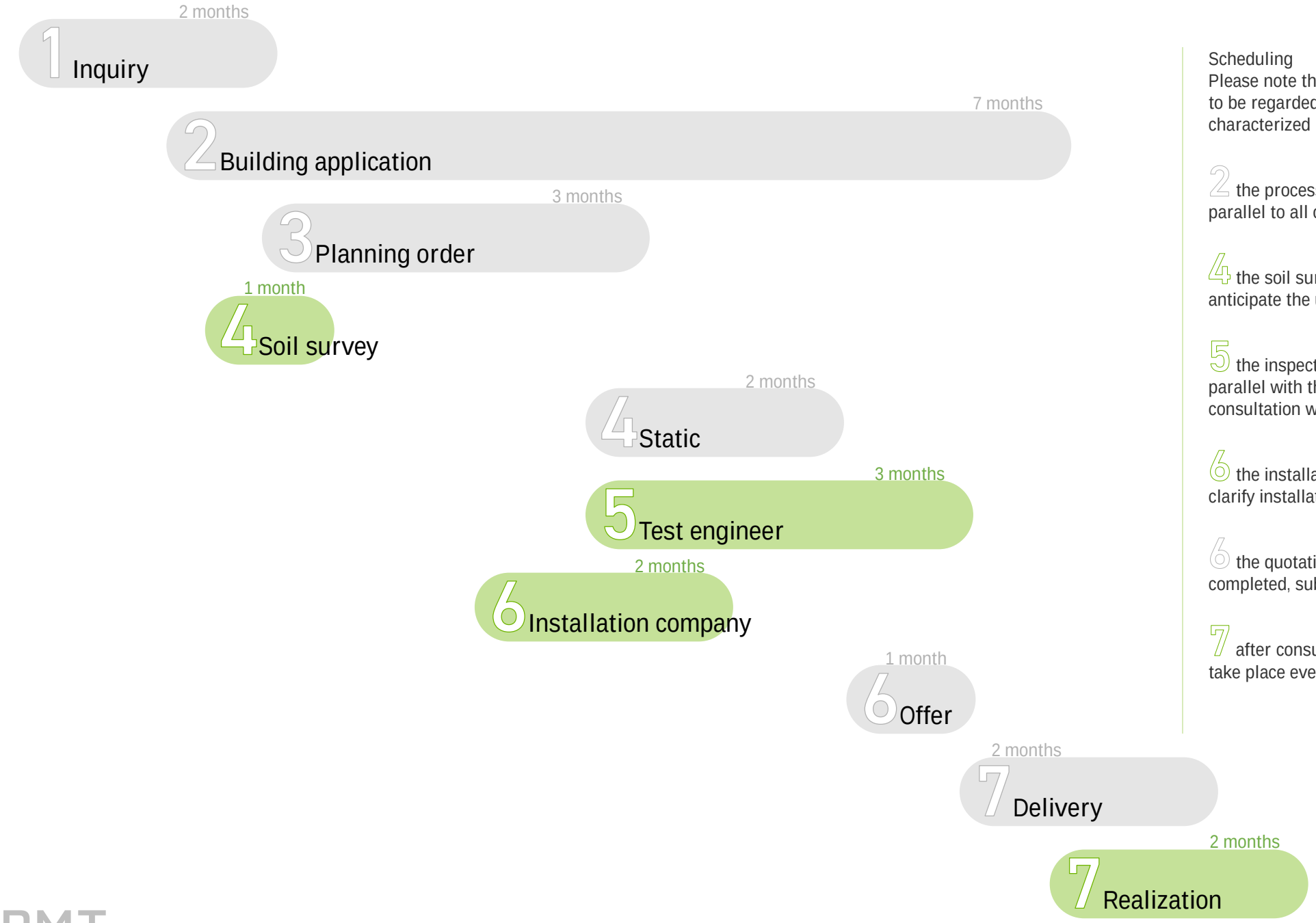
Description
The carport will be erected in close consultation with the customer and the installation personnel. The test engineer will carry out inspections during construction and check the installation for correctness. The installation personnel will record the process in the form of construction site documentation.

Should there be any complaints, these will be immediately forwarded to PMT and clarified as quickly as possible.

After completion of all construction measures, the test engineer prepares the proof of construction supervision for the building authorities. The building authority carries out a completion inspection.

Goals
- Successful project completion
- Construction supervision certificate and completion acceptance test

Duration
Depending on the size of the project, the installation takes at least 4 weeks (120 parking spaces) up to 6 months (1,200 parking spaces).



Scheduling

Please note that the linear representation of the project schedule is to be regarded as a simplified model. The real process is characterized by iterative and parallel individual steps. For example:

2 the process leading up to the building permit generally runs parallel to all other processes and takes up a lot of time.

4 the soil survey can be carried out at an early stage in order to anticipate the uncertainty of the building ground.

5 the inspection of the structural analysis can be carried out in parallel with the preparation of the structural analysis after consultation with the test engineer.

6 the installation company can be called in at an early stage to clarify installation-related difficulties in a professional manner.

6 the quotation may be prepared even before the external audit is completed, subject to any necessary changes.

7 after consultation with the building authority, the realization can take place even before the final issuance of the building permit.

2 months
1 Inquiry
Project layout and cost estimation
Approval by customer

7 months
2 Building application
Building regulations obtained
Planning documents complete
Building permit

3 months
3 Planning order
Detail plan
Execution plan
Planning requirements are fulfilled

1 month
4 Soil survey
Geotechnical report
Binding foundation design

2 months
4 Static
Static documentation
Project specific production plans
Purlin installation plans

3 months
5 Test engineer
Technical release

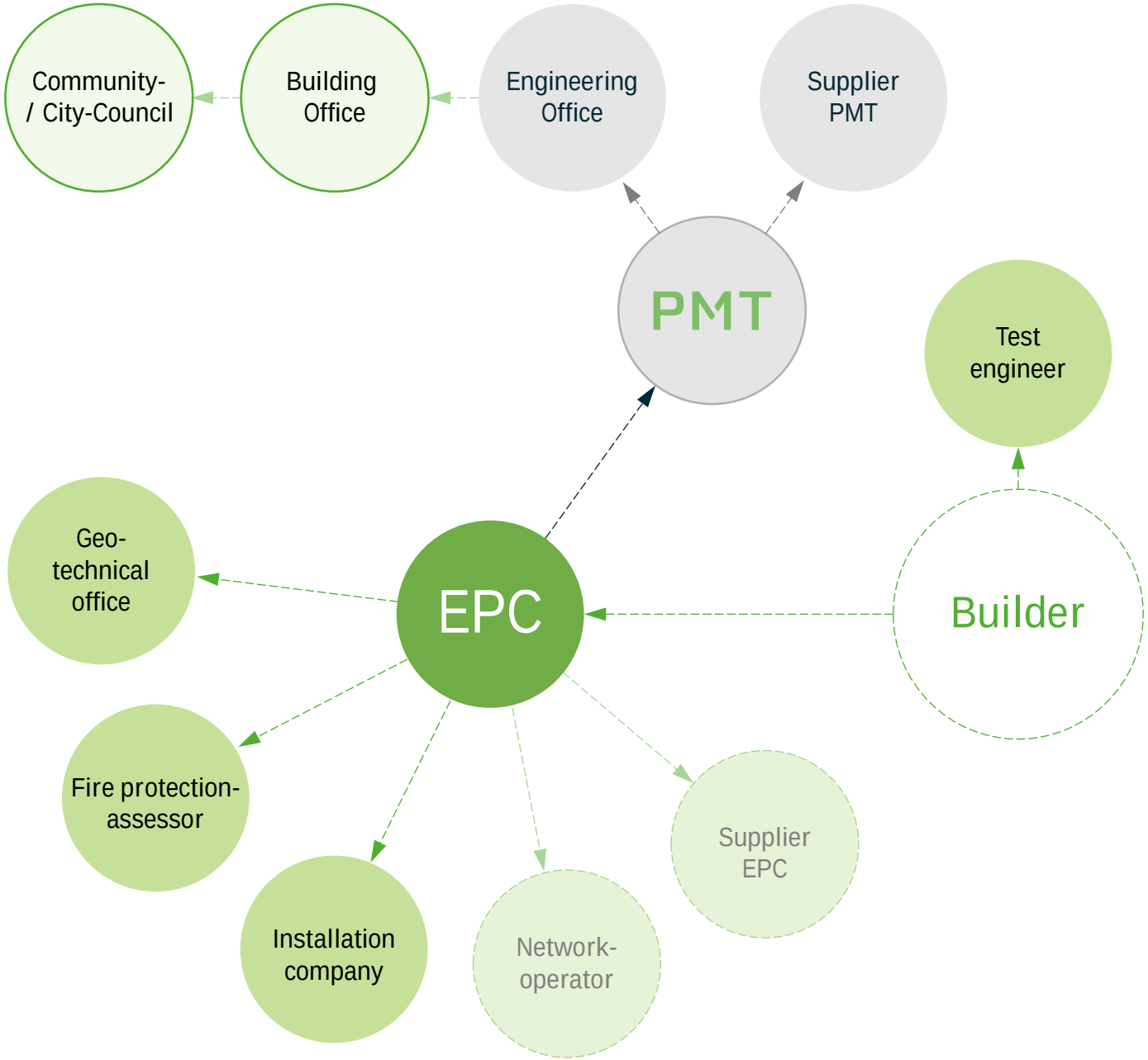
2 months
6 Installation company
Installation offer
Construction scheduling

1 month
6 Offer
Carport offer
Construction scheduling

2 months
7 Delivery
Components delivered

2 months
7 Realization
Project completion
Construction supervision certificate
Completion acceptance

Milestones
According to the goals defined for each sub-process, different milestones are to be achieved. The sequence can vary in principle, but the overall scope of milestones should be given constant attention.

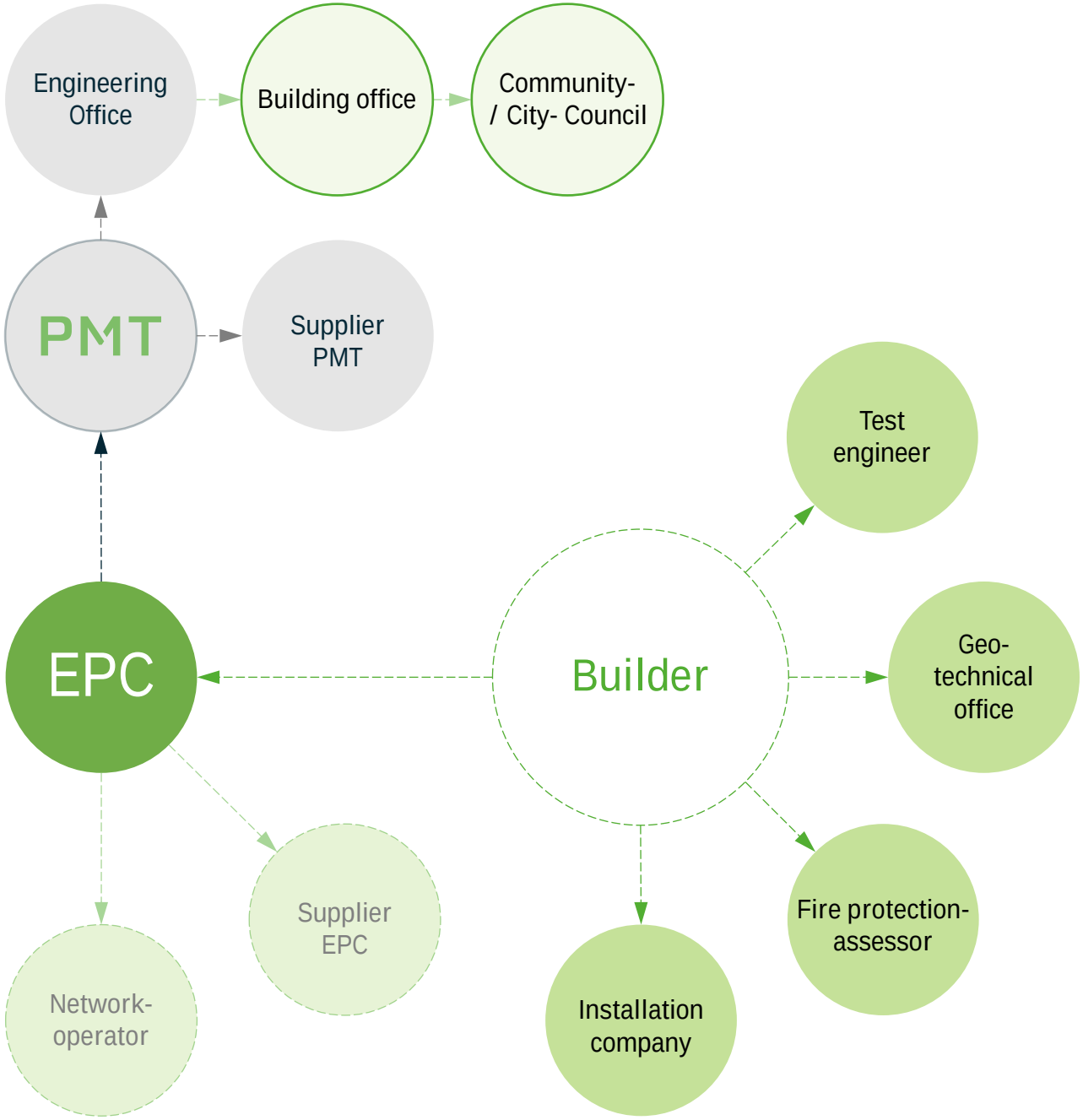


Stakeholder
Please note that this is an exemplary and simplified model showing the EPC as general contractor. The quantity and structure of the parties involved basically varies from project to project. Likewise, parts of the necessary services can be commissioned directly by the client, for example.

As the project progresses, it may be necessary to involve other parties, for example:

- Glare assessor
- Fire safety inspector
- Local fire department
- Bomb disposal team
- Environmental and green space office
- Nature conservation union
- BG Bau (German employer's liability insurance association of the construction industry)
- Landscape architect
- Owners of adjacent properties
- Residents / neighbors

The number of participants is significant for the complexity and the time required for the overall project. It is recommended to appoint a person in charge, who is responsible for the coordination of the whole project.



Stakeholder
Please note that this is an exemplary and simplified model showing the owner as the overall responsible party. The quantity and structure of the parties involved basically vary from project to project. Likewise, parts of the necessary services can be commissioned directly by the EPC, for example.

As the project progresses, it may be necessary to involve other parties, for example:

- Glare assessor
- Fire safety inspector
- Local fire department
- Bomb disposal team
- Environmental and green space office
- Nature conservation union
- BG Bau (German employer's liability insurance association of the construction industry)
- Landscape architect
- Owners of adjacent properties
- Residents / neighbors

The number of participants is significant for the complexity and the time required for the overall project. It is recommended to appoint a person in charge, who is responsible for the coordination of the whole project.

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