

Starting right



STARTING RIGHT

It is absolutely vital for a good project process to get things *start right* by making the right decisions in the initial phases of the construction project. It is important to reflect upon the building process and carry out the right activities to increase the chances of success for the project participants and for the project as a whole.

This is about creating clarity about the tasks and interfaces for everyone in the project. From the very start there should be a clearly defined and effective organisation so the right skills come into play at the right time. The project constraints should be well-known and balanced, so everyone is familiar with the relevant assumptions and agreements. A clear framework and agreements provide the best foundation for good communication between the parties to the project, and so form the basis for an effective building process.

This guide focuses on the crucial parameters that need to be understood before the project design work starts. The specific tools and methods in the guide will help the project to get things right from the start and provide for a value-creating project process right through to handover.

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STARTING RIGHT

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CONTENTS

ABOUT THE GUIDE	6
COMMUNICATION – THE KEY TO GETTING IT RIGHT FROM THE START	7
<i>Internal and external communication</i>	7
<i>Stakeholders and politics</i>	7
<i>ICT</i>	7
<i>Communicate the communication</i>	7
CREATE CLARITY	8
<i>Clear values produce the right solutions</i>	8
<i>Organisation and process</i>	10
BALANCE THE CONSTRAINTS	14
<i>The crucial balance</i>	14
<i>Alignment of expectations and collaboration</i>	14
<i>Handling project changes</i>	14
THE RIGHT SKILLS IN ACTION	16
<i>Permanent actors</i>	16
<i>A quiet start and build-up of relationships</i>	16
<i>Make space for the skills</i>	16
<i>Chairing meetings</i>	16
CHECKLIST	18

ABOUT THE GUIDE

The guide describes the key activities that the client organisation and the project design team need to manage proactively to provide for an effective building process.

The activities fall under three headings:

- Create clarity about the task and the process
- Balance the project constraints
- Bring the right skills into action

Across these areas there is a general need for *communication*. Effective communication is a crucial parameter for the success of a construction project.

WHEN AND FOR WHOM?

The recommendations in this guide are aimed at the initial phases of the building process, when the client has just identified the partners who are to handle the project design (and possibly also the subsequent construction). Before this, a process has taken place in which the client's ideas were discussed and clarified¹ to provide a basis for the subsequent project design. Now it is about getting the project right from the start and laying the foundation for a value-creating building process going forward.

The target group for this guide therefore encompasses the client organisation, the consultants and the contractors, who are involved early in medium-sized or large construction projects.

CHECKLIST AND TOOLBOX

The guide ends with a checklist which the client and the team can use to ensure that they have covered all the key topics. There is also an appendix with specific tools for inspiration and practical use. We refer to these tools throughout the guide.

1) See www.i2p.dk for tools and methods for the initial phases of building projects

COMMUNICATION – THE KEY TO THE RIGHT START

Communication is a fundamental factor in a good building process, so it is crucial to make it clear from the start: *how are we going to communicate?* The client and the team should agree on a set of common ground rules for communication, to ensure that nothing gets lost 'between the lines' and that there is room for the necessary questions to be asked and answered.

This can be set out in a communication plan, which is an overall script for the communication work through the building process – note the example in Appendix 1. Preparing for the communication will provide the client organisation with a number of basic rules for how things should be communicated during the project. This plan is then converted into a document applicable in discussions with partners and providing a common understanding of how both internal and external communication should be handled in the actual project.

INTERNAL AND EXTERNAL COMMUNICATION

The client and the team should communicate internally in order to ensure clear areas of responsibility and interfaces and constant progress in the project. Procedures and guidelines should be drawn up and complied with, preventing the project from being flooded with unstructured information which could give rise to misunderstandings and inefficiency. It is important that the project information is accessible, readable and up-to-date.

There should be a clear strategy governing how things are to be communicated to whom, and how often. This is particularly important in relation to external communication concerning project progress to the public, the local area, future users, existing residents etc.

The communication plan should also address more mundane subjects such as the meeting structure, the 'tone' of the meetings, use of e-mails and other digital media etc. It is important to agree on common ground rules and constantly evaluate and modify them as the project evolves.

2) You can find out more about this in Værdibyg's guide to 'User involvement'.

3) ICT specifications and instructions for the building industry, bips, 30 June 2011

4) Guide to digital project design, FRI and DANSKE ARK, 2012

STAKEHOLDERS AND POLITICS

A good basis for producing a communication plan is a stakeholder analysis, identifying the stakeholder groups involved in the project².

It is important to proactively identify the key stakeholders and interests and to pin down the areas where e.g. political decisions could affect the progress of the project.

ICT

ICT (Information and Communications Technology) plays an important role for communication in a project team. The use of ICT offers great potential for knowledge-sharing across functions which can provide for an optimisation of the project. But this requires that information and drawings are structured in order to prevent misunderstandings and duplication. It is important for everyone to use software systems that are compatible with each other for a fluent exchange of information and data. A project website is also a useful platform for exchanging files.

The ICT guidelines must not be decoupled from the rest of the process; rather, they should help to support the overall goals of the project throughout the process. The ICT guidelines will often be produced by specialists, but it is important for the ICT specifications to be written in a straightforward language and for the guidelines to be communicated and handed over to all new actors in the project.

It may help to look up the bips directions for ICT specifications³ or the FRI and DANSKE ARK's supplement to the Service Specifications for handling ICT in the building project⁴.

COMMUNICATE THE COMMUNICATION

It is essential that the communication plan is disseminated and that management actively supports the implementation of the desired communication culture in the project. The communication plan will typically be part of an overall project plan or project handbook.

CREATE CLARITY

Before a building project gets properly started, all parties should be clear about:

- What are we building and why?
- What are the client's needs and wishes, and how should they be satisfied?
- How does the organisation appear?
- What should the process be like?

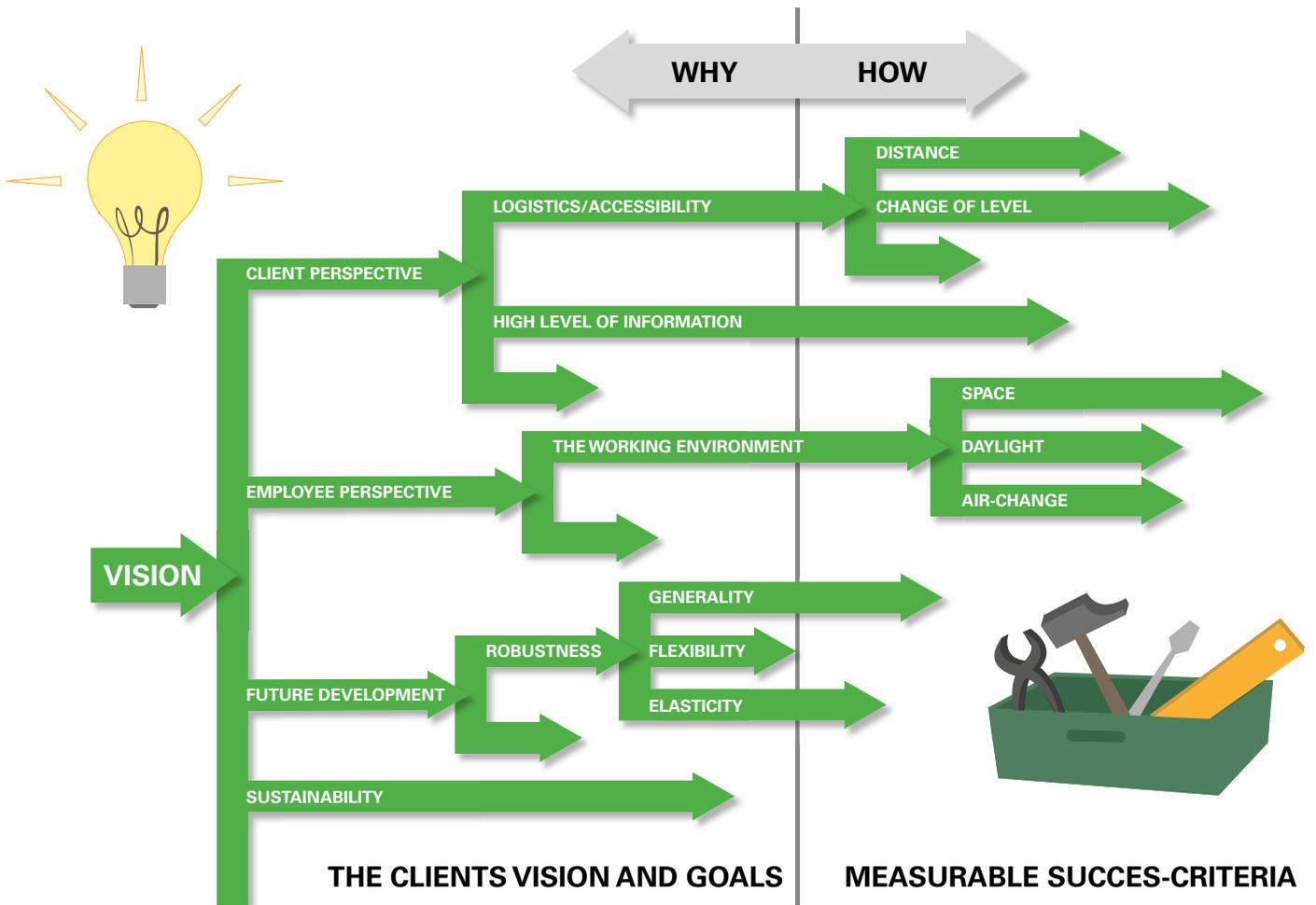
CLEAR VALUES PRODUCE THE RIGHT SOLUTIONS

The client and the team should start by aligning their expectations, perceptions and ideas about the

forthcoming project, so work can continue on the right solutions to the right needs. The client organisation itself may be a complex entity made up of builders, lawyers, politicians, users, finance people, operators etc., so clarifying needs and values is a process that demands some effort.

The design specification should contain the project's underlying visions, needs and values as well as the assumptions and requirements established in the early phases. The design specification alone cannot support knowledge-sharing from planning through to project design. The needs and values of the client organisation and the specified task should be compared with the conception of the job by the project team.





THE VALUETREE

To ensure that the values are adhered to throughout the project, a *value tree* can be used. The value tree is a discussion tool to establish coherence between vision and more concrete criteria for the project design. It acts as a proactive compass and allows for the subsequent design process to be monitored and evaluated in a measurable way.

The value tree should be completed jointly by the client and the team in order to arrive at a shared understanding of the fundamental values behind the project. It is important to give everyone a hearing and to challenge needs and solutions with the specific knowledge possessed by each member of the team. It is furthermore important for the value tree to reflect a series of measurable success criteria which the team can then incorporate in the project design process.

The client kicks off with his needs and wishes, and then the team describes in specific and measurable ways its intentions of meeting these.

The value tree is thereby a discussion tool offering answers to how the overall vision and goals should be addressed as well as to why the chosen solutions are appropriate. A detailed value tree can be seen in Appendix 2.

It is essential to remember that the building process is a learning process, and that it may be necessary to modify the value tree along the way. The value tree thus becomes a dynamic tool that can be changed and expanded as further and more detailed decisions are taken.

ROUTES TOWARDS A COMMON UNDERSTANDING

There are many useful activities for the team and the client to undertake to ensure a common understanding of the content and scope of the assignment and of the needs of the client or future users:

- **Study visits** to completed or ongoing reference projects will give the team a better understanding of the client's wishes and may inspire thinking along new lines.
- **Studies of the end-users' day-to-day behaviour** and culture will enable the consultants to understand and challenge the specified needs (see example below).
- **1:1 mock-ups**, which involve building a prototype of parts of the building (e.g. a bedroom or a flat), will stimulate practical dialogue between the team and the client. They also allow users, operation staff, contractors etc. to get a better idea of the end-result and to uncover possible errors and problems.
- **Scenario-building** provides different views of directions, such as market changes, lifestyle trends and climate change, in which the context surrounding the building can evolve. It allows the team and the client to discuss needs and values in a longer-term perspective – what do we want for the future?

USER STUDIES

In connection with the expansion of Copenhagen University's Department of Veterinary Clinical and Animal Sciences, the consultants visited the vets, doctors and nurses at the existing hospital. The workflows that they observed made the consultants better qualified to draw up and propose suitable solutions for the extension of the hospital, including operating theatres, recovery, admissions, reception etc.

ORGANISATION AND PROCESS

Apart from creating clarity about the needs and how they are to be met, it is important to be clear about the organisation of the project and the coming process – *who does what, and when?*

A number of good tools are available for this:

- **Organisation chart**
A graphical depiction of the contractual relationships and of the decision and communication paths in the joint project organisation
- **Service specification**
The client's description of the consultant's role and services
- **Interface form**
Schematic overview of activities at the interfaces between the individual actors
- **Terms of reference**
Description of roles, responsibilities and decision-making authorities of various sub-groups (e.g. steering group, advisory group, project management etc.)
- **Project plan**
Overall description of organisational and management structures and procedures

DIAGRAMS

The placing of roles and responsibilities should be communicated clearly and precisely to the client organisation and the team. A sensible method is to distinguish between diagrams such as:

- Contract organisation – who has a contract with whom?
- Decision-making organisation – who can decide on what?
- Communication chart – what paths do we use to communicate?

Example diagrams can be found in Appendix 3.

We recommend that the organisation is simplified as far as possible to provide for a more straightforward decision-making process and to make it easier for everyone to understand the organisation and act in accordance with the specified structure.

The communication chart can be supplemented with more details via sheets showing the participants in the project with photo, contact details and principal function (e.g. ICT manager, project design manager, technical manager etc.).

TERMS OF REFERENCE

The project organisation chart may be supplemented with terms of reference for horizontal sub-groups (e.g. steering group, user group, project management, advisory group etc.). The terms of reference describe the tasks to be performed by the different project units and the constraints within which they can act. An example table of contents for terms of reference for user involvement is given in Appendix 4.

The terms of reference should be communicated widely across the project organisation, so that all parties involved know what functions and tasks any sub-groups have, who has the authority to make decisions, and hence what each of the them can expect from the others.

SERVICES AND INTERFACES

In producing the contract documentation, the client should be very precise about the services expected of the team. We recommend expanding on FRI and DANSKE ARK's specifications of services by adding an extra column containing additions and exceptions to the standard specifications. This will provide recognizability and also allow the specifications to be adapted to the project in hand. For an example, see Appendix 5.

The problems often arise at the interfaces between the services of the different actors. Building installations are particularly prone to interface problems, when e.g. ventilation, heating and electrical installations are integrated into an overall automated control system for the indoor climate in the building (see also example relating to doors). In these cases, it is useful to produce an interface diagram; an example can be found in Appendix 6.

INTERFACES AROUND DOORS

There are many issues to be considered when designing doors:

- **Functionality**
General design, illumination and visibility, flow, automatic opening and closing
- **Structures**
Structural coherency and dimensioning of wall and floor
- **Fire**
Location of fire doors, automatic closing
- **Risk of theft/access controls**
Locking systems, security doors
- **Electricity**
Coherency between electrical components and general electrical supply to the building, monitoring and control

This area contains interfaces between the architect, fire engineer, security engineer and the overall electrical project. There may also be specific acoustic factors to consider, requiring consultation with suppliers, carpenters, security and electrical contractors.

Thus a door project often involves coordination among 8-10 different actors. It may give rise to serious problems if all the requirements for collaboration are not in place.

THE PROJECT PLAN

– A HANDBOOK FOR THE PROJECT

To provide an overview of the project organisation and process, a project plan should be produced. The project plan works as a handbook to the project and contains not just an overview of the various structures and procedures in the project but also an overall description of the project process right through to operation.

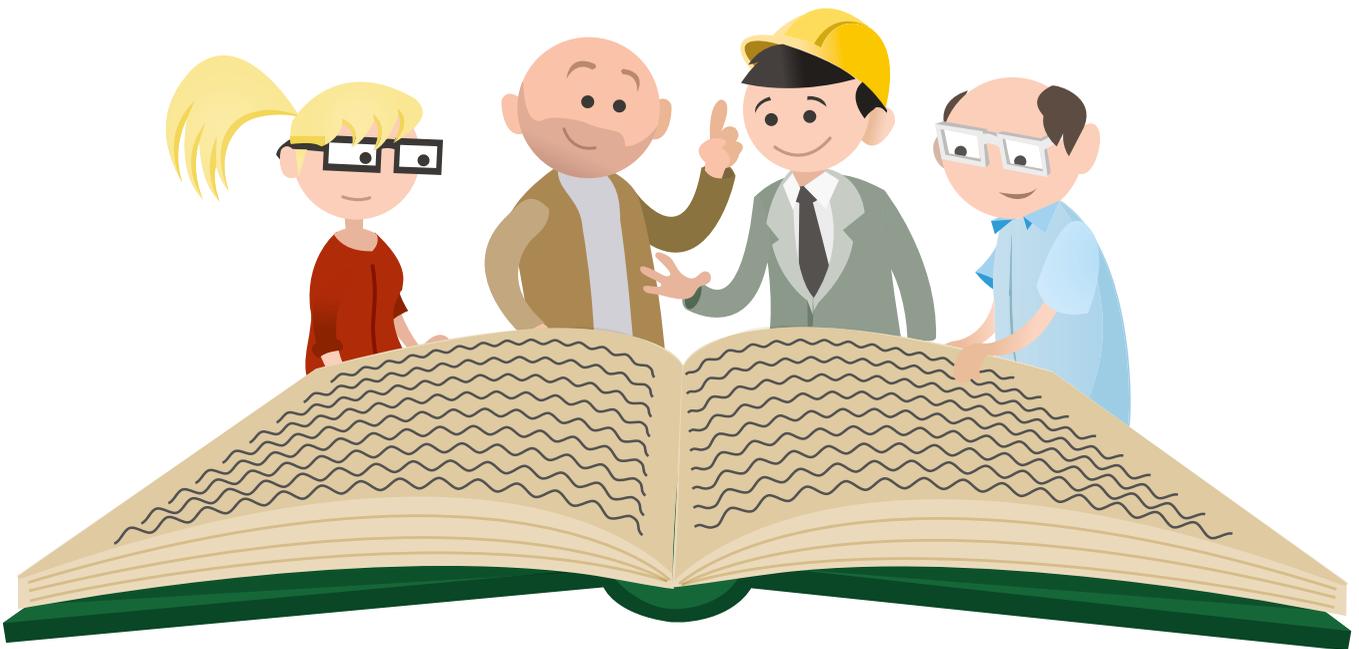
The project plan unites the guidelines, diagrams, terms of reference etc. It may also include a timetable and descriptions of procedures for e.g. project economy, time and quality management, including critical milestones and risk management. The project plan should give the team and the client organisation a clear answer to how the process is to be implemented.

It is a dynamic tool to be used and modified throughout the process. The individual elements of the project plan must work together, so that e.g. the results of

the stakeholder analysis are reflected in the interface charts, the communication plan, the organisation chart etc.

Preparation of the project plan should involve the parties who are to apply it. This will ensure that all parties know in advance how the project is going to be constructed. The process of creating the project plan is thereby another activity which provides for collaboration and coordination across the disciplines involved in the project.

The project plan should be concise but it should also contain the essential details of the project. When the project plan is handed over to new actors in the project, there should always be an oral presentation and discussion of the content.



PROJECT PLAN

EXAMPLE OF A TABLE OF CONTENTS

1 INTRODUCTION

- 1.1 INTRODUCTION TO THE PROJECT
- 1.2 VISION AND SUCCESS CRITERIA
- 1.3 BEHAVIOUR AND CULTURE IN THE PROJECT

2 ORGANISATION

- 2.1 PARTIES TO THE CONSTRUCTION PROJECT AND THEIR FUNCTION
- 2.2 CONTRACT ORGANISATION
- 2.3 DECISION HIERARCHY AND PROCEDURES
- 2.4 OTHER STAKEHOLDERS AND INTERFACES

3 GENERAL ASSUMPTIONS AND REQUIREMENTS

4 PROJECT PHASES AND TIMETABLE

5 USER INVOLVEMENT

6 FINANCIAL MANAGEMENT

7 TIME AND ACTIVITY MANAGEMENT

8 QUALITY ASSURANCE

9 RISK MANAGEMENT

10 HEALTH AND SAFETY

11 TENDERING STRATEGY

12 SUSTAINABILITY

13 COMMUNICATION AND DOCUMENT MANAGEMENT

14 CONFLICT HANDLING

15 REFERENCES

16 APPENDICES

BALANCE THE FRAMEWORK CONDITIONS

Framework conditions set the boundaries for the task and are defined by the client and the surrounding community. Such boundaries to a building project may be legislation (e.g. governmental regulations for public buildings), municipal planning issues, the governing overall budget, geotechnical factors and deadlines.

THE CRUCIAL BALANCE

Balanced framework conditions are a fundamental requirement for a good project. With an agreed balance between the task, the desired quality, time, budget and risk, the building project can be implemented to the satisfaction of all parties. Good contracts produce a win-win situation for all parties, balancing roles and responsibilities.

The balanced framework conditions and agreed expectations should be reflected in both the overall contracts and in the behaviour of the project participants and the managements approach to the project. On this basis, the team and the client will be better equipped to handle the challenges that emerge in the course of the project.

ALIGNMENT OF EXPECTATIONS AND COLLABORATION

Early in the process the client and the team should each clarify what they expect of the proposed project. It is important to be honest about the parties' different goals and to recognise that all parties have a good case in order for the project to become a success. The entire project team – including the client – must collaborate and be prepared to help each other if any party unintentionally gets into difficulties. And this in turn places demands on the underlying contract documentation, where early involvement and incentive structures can help to reinforce the parties' interest in achieving a common goal.

It is a good idea to kick off the collaboration between the team and the client organisation with a start-up workshop, focusing among other things on the expectations of the project content and the process protocol.

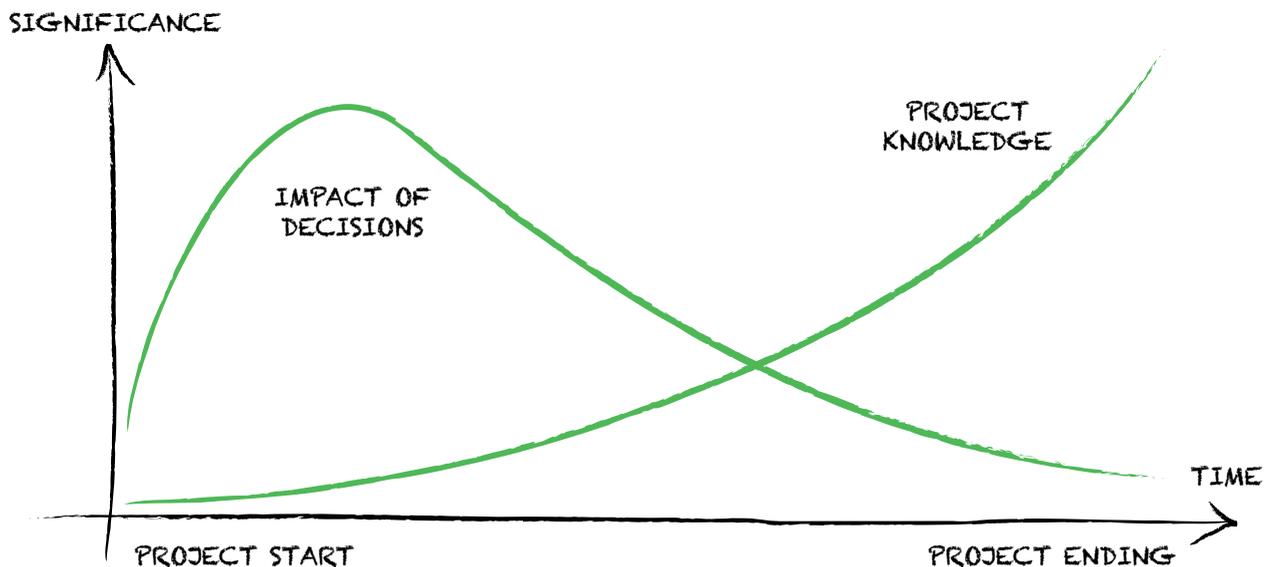


At the start-up workshop, the participants should draw up a joint declaration of intent, describing the ground rules for collaboration in the project. The declaration of intent is not a legal document, but it represents ground rules for the process and can later be used as a basis for the regular evaluation of the collaboration⁵.

HANDLING PROJECT CHANGES

There may be many reasons why changes are required in the project along the way during design and production; new users may introduce new requirements; market developments may change the preconditions for the project etc. With one-off buildings in particular, it is hard to predict time and budget and thus to achieve a balance between framework conditions. In these cases there will often be a need to make continuous adjustments to the project. Project changes are often a source of frustration for both the client and the project team, and can cause conflicts and delays in the process.

⁵You can read more about the start-up workshop and aligning expectations in Værdibyg's guide to 'Establishing collaboration'.



THE PROJECT PARADOX

The reason why it may be necessary to make changes to the project can be found in the 'project paradox'. When the project starts, we know very little about it but, paradoxically enough, this is when the most important decisions must be taken. Many of the assumptions made at the beginning may turn out not to hold water. So we have to make continuous changes and adjustments, even if this calls for greater coordination and re-planning.

TOOLS FOR HANDLING CHANGES

It is clear that not all suggested changes inevitably have to be implemented. It is important to thoroughly consider whether a change proposal is worth the necessary effort. When a change to the project is decided, there are various tools available to maintain a balance between the framework conditions:

- **Frequent estimates**

In projects with fixed budgets it may be recommended to make frequent estimates of the overall costs of the project. In this connection the design should be constantly adjusted to the finances (and not the other way round) in order not to re-start the budgeting process. Estimates may be made, for example, by **successive calculation**⁶, which is a tool for risk management and cost estimation.

- **Decision process**

When there is a need for changes, it is important for the client organisation to be geared for quick decision-making. Long drawn-out decision-making can kill any progress and cause both the budget and the schedule to slip. A decision plan should be drawn up, in which the delivery team, the project management and the client commit themselves to deadlines with a process for efficient decision-making. An example decision plan is shown in Appendix 7.

- **Flexibility**

A possible strategy is to work on a basic design with various additional options, so everything does not need to be re-designed if the budget comes under pressure.

Changes may lead to a slipping schedule, and extending the construction period will often entail substantial costs. Furthermore, handling ongoing changes to the content of the project is a demanding process. In this regard, it is absolutely crucial for clients to communicate how they prioritise time, cost and quality, so any change is not made at random but according to a deliberate, structured and well-considered process.

⁶ See e.g. Steen Lichtenberg: *Projektplanlægning – i en foranderlig verden [Project planning in a changing world] (1990)*

THE RIGHT SKILLS IN PLAY

A good project is heavily dependent on the right skills coming into play at the right time and being utilised in the most advantageous way. Continuity, relationships, skills and leadership are keywords in this regard.

PERMANENT ACTORS

In the transition from planning to project design, it is important to ensure that there are a number of permanent people who can carry forward the original ideas and visions, and that new actors are integrated as quickly as possible in order to maintain efficient team work. This process can be encouraged by assembling the project group so relationships can be established – e.g. via workshops, kick-off seminars or team building events.

Likewise, it is important that the appropriate skills are brought into play at the right time. Many architects' firms are very aware, for example, that it is mainly creative people who should be deployed at the start of projects, with more production-oriented staff joining in later in the process.

START SLOW AND BUILD RELATIONSHIPS

A project team will not perform 100% from day one. To begin with, a new project team member will focus on finding his or her own place in the project and on forming an overview of relationships and roles, rather than focussing on the assignment. Many new actors may cause a temporary drop in efficiency. This represents another good reason for creating clarity around roles and services early in the process.

Building relationships through social events provides the benefit of creating better communication between the parties. It is simpler to call or write someone if you have met one another. It is important to create a sense of confidence in the project group, so everyone dares to ask clarifying – so-called 'stupid' – questions, and enter into a discussion.

MAKE SPACE FOR THE SKILLS

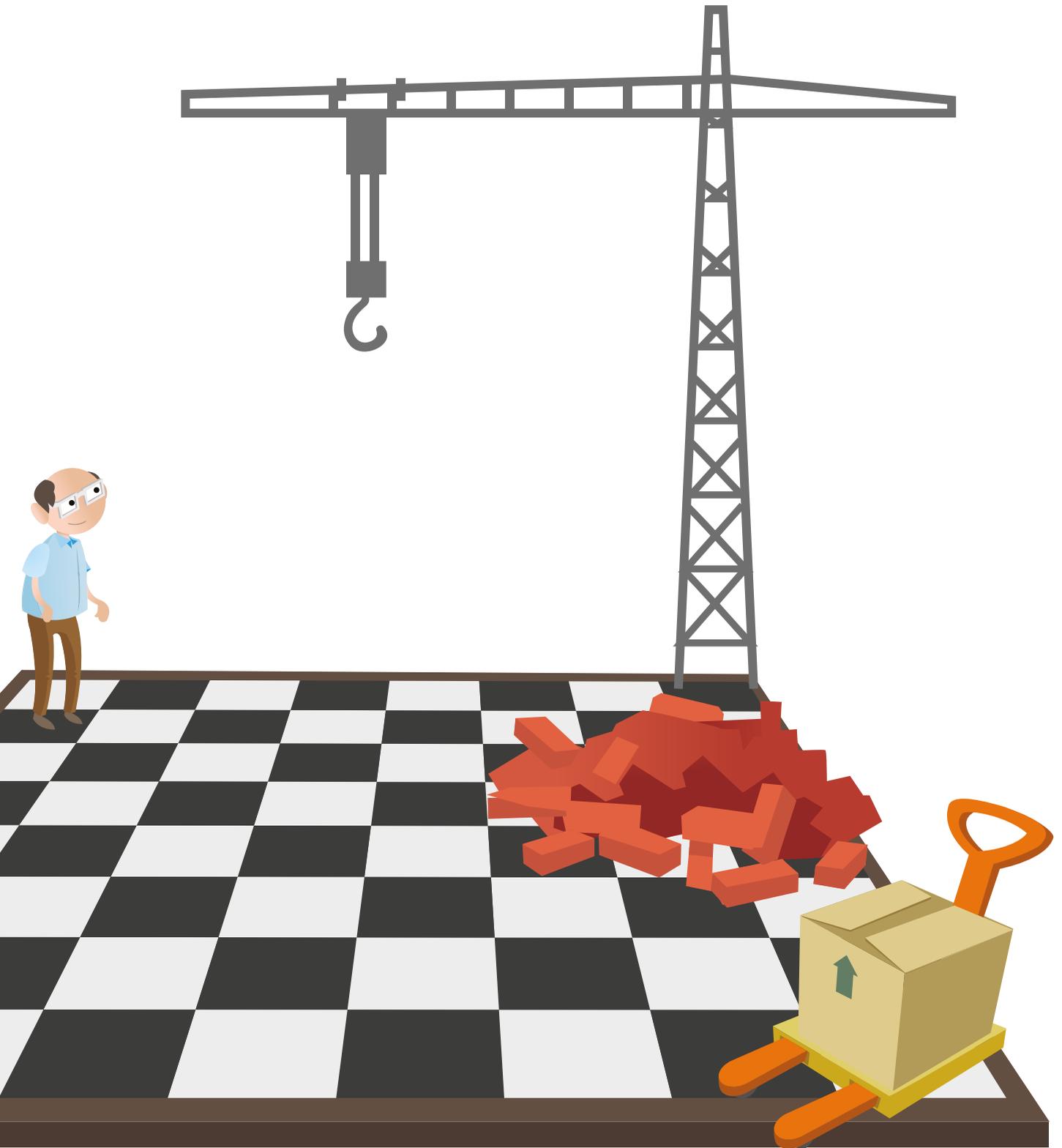
The right skills should not merely be in place at the right time; they should also have the time and space to develop. It is undesirable for the project manager to become absorbed in technical details, or for the architect to be spending all his time managing budgets. So it is essential to create a structure in the project to allow all of the actors to do what they are best at.

CHAIRING MEETINGS

Bringing the right skills into play requires an overview from the people managing and coordinating the project. When it comes to solving a specific problem a good project manager will be aware that the important skills may be 'hidden' in people who perhaps are not so dominant in meetings. So good management is often a matter of chairing good meetings and getting everyone to take an active part where it adds value.

In larger workshops, you can make use of an external facilitator, who has not only general knowledge of building projects but also special expertise in group dynamics. An external facilitator can more easily create a space in which it is permitted to ask the difficult questions which the project participants cannot or dare not ask. A 'speak your mind' culture should be established early in the project, making it OK to question the project and the decisions that have been taken. See Appendix 8 for good tips on chairing meetings.





CHECKLIST

This sums up the good advice given in the preceding sections. The checklist is intended as a tool for the client organisation to ensure that all the necessary aspects have been considered.

- ✓ How are we to communicate, and with whom – both internally and externally?
- ✓ Is the communication plan clear and comprehensible to all?
- ✓ Are the values and visions for the project clearly conveyed to the users?
- ✓ Have activities been planned to provide for a common understanding of the assignment?
- ✓ Have the framework conditions been identified and communicated?
- ✓ Have the organisation, terms of reference and interfaces been defined?
- ✓ Have the process and the schedule been formulated?
- ✓ How is the follow-up on the process and the handling of changes ensured?
- ✓ Who possesses the right skills?
- ✓ Are the skills supported and brought into play at the right time?

APPENDICES

- 1 COMMUNICATION PLAN
- 2 VALUE TREE
- 3 ORGANISATION CHARTS
- 4 TERMS OF REFERENCE FOR USER INVOLVEMENT
- 5 SERVICE DESCRIPTION
- 6 INTERFACE FORMS
- 7 DECISION PLAN
- 8 10 GOOD TIPS FOR CHAIRING MEETINGS

**YOU CAN RETRIEVE THE APPENDICES AND
CASE-STUDY FROM WWW.VÆRDIBYG.DK**