

Fully Transparent Cooperation Method

A revolutionary building development process based on organized trust

Only twelve months to design, construct and commission offices and laboratories in a high-quality building, with a fixed budget: that was what client Synthon requested. The results are impressive: FastTrack Offices and Labs (FTOL), a high-quality, safe and friendly building, completed in exactly one year and within budget. The key to success? Organized trust and fully transparent collaboration.

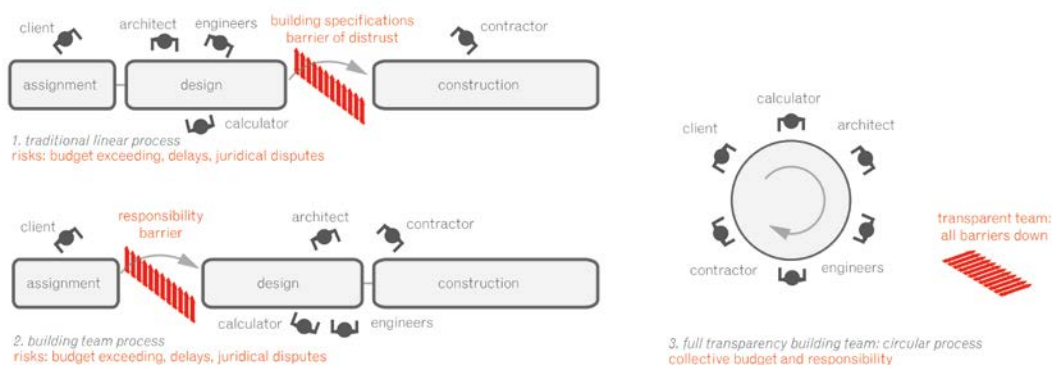
Initiating a new approach

The innovative pharmaceutical company Synthon is operating worldwide. Its headquarters in the city of Nijmegen required offices and laboratory space on a very short-term to meet the latest developments in the company's rapidly growing biotechnology unit. The laboratories needed to be up-and-running within one year. With all the complex systems, controls and safety devices it seemed an impossible task at first sight. Together with Synthon, architectural office Broekbakema initiated a new way of cooperating with design and construction partners, in order to optimize the design and construction process. The main goal: to reach maximum quality within the fixed budget and fixed planning.

Organized trust: an innovative collaboration

Traditionally, the design and construction process consists of a very linear sequence of activities and involved parties. This often results in an organizational separation between the design process (what do we want?) on the one hand and the construction process (how do we make it?) on the other hand. The client attempts to control the quality of the built product by extensively specifying the requested building performances and elements. These complex and time-consuming building specifications are the juridical base of organized distrust between the involved professional parties. Their responsibilities are limited to their own disciplines and working for a common goal is unfortunately not in the least obvious. The traditional separation between the design and the construction process acquires a lot of handover friction and often leads to overrun of budgets and planning. Due to undisclosed budgets and costs, the process will often consist of a constant negotiation about subsequent expenses. As a result of the lack of transparency there is not enough collective control over the projects finance.

In the past decade non-traditional setups of the building process have emerged, in order to strive towards the reduction of the disadvantages of the traditional model. In projects with so-called building teams the contractor is already involved during the design process, which leads to a more integrated approach. Often however a new barrier is raised in this approach: the client shifts responsibilities towards the building team and relinquishes control over the process. Essentially there is still a collaboration based on organized distrust due to concealed budgets and costs. The building team approach still contains risks in terms of budget exceeding, delays and juridical disputes.



For Synthon, the FastTrack Offices and Labs building (FTOL) was designed and built according to an innovative process which takes the integration of the disciplines another step further. The process was characterized by full transparency and a dedicated commitment of all parties involved. The task was clear: the building had to be put into service within one year, with a maximum budget guaranteeing high quality. By putting all decision makers at the same table and by making them jointly responsible for decision making and budgeting, a very innovative, valuable and efficient project approach was developed. In this manner sharing knowledge and skills of the disciplines involved became self-evident. Based on trust, respect, openness and full transparency

Synthon's tough requirements were met. The design and the construction process were based on 'organized trust' between all the involved disciplines in the Fully Transparent Cooperation Method.

The new method consists of three main aspects:

- Full transparency
- Lean and integral decision making
- Digital prototyping

Making everyone a full project member at the very start of the project is an important underlying aspect of the method.

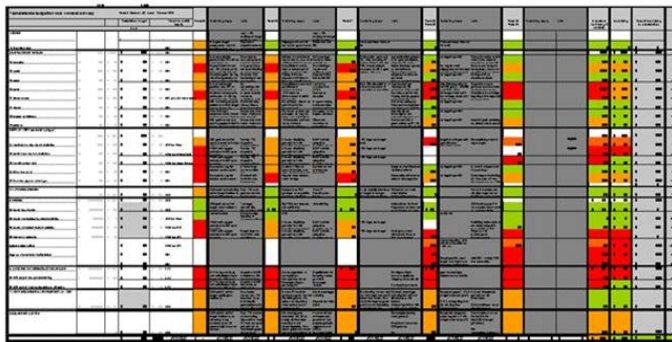
Full transparency

Crucial to the new approach is the full disclosure of the available budget and all the net costs. Within the transparency concept both hidden budgets and hidden costs are eliminated, in order to obtain full collective control over the projects finance. In addition, mass inertia in financial reporting is prevented and decisions can be taken quickly.

At the start of the project a sketch design was made by Broekbakema, including a mass model and a coarse zoning plan of the building. The selection of the contractor was based on a presented action plan which had to include a fast construction plan of the building's frame. The sketch design, the fixed budget, the planning and the quality demands were the base of open negotiations between all involved parties.

The building budget estimation was collectively specified and agreed by the whole team and kept within the fixed budget of the client.

Each party was responsible for the formulation of their own discipline's sub-budget estimation, however the entire building team had to agree upon all of the expenses. This means that full disclosure of estimated costs was needed and no hidden costs were allowed. During every weekly meeting, common consent had to be reached upon all off the costs made. In order to achieve this consent efficiently, a traffic light system was introduced to qualify the state of the individual expenses. In this manner all the expenses were monitored and adjusted collectively on a weekly basis. Because of the intensive monitoring process, budgets could not be exceeded. When a budget problem appeared there were three levels of solution-finding: at first the solution was sought within the individual cost, then within the sub-budget and if that wasn't possible it had to be solved within the overall project budget.



Traffic light system overview example

Budget monitoring

Expense 23b + 28: Floors + Structure
Budget: 1,27 mio
Current status: 1,29 mio **101.6%**

- Tasks next week:
- Increase flexibility of the design
 - Research alternative product: Bubble-deck floor



Traffic light system specific cost example

As an end result all companies were paid based on veritable expenses and worked hours. The traditional stimulant to 'deliver less for the same money' has been eliminated. As mentioned before no building specifications were composed in the process, the weekly collective decisions were the formal base of arrangements between parties. Subsequent extra costs are not possible within the Fully Transparent Cooperation Method, the main budget remains fixed at all times.

Lean and integral decision making

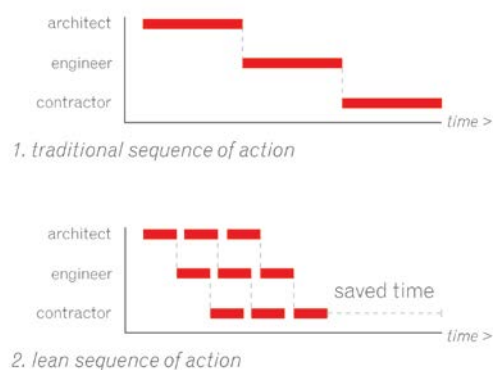
The 'lean' approach focusses on efficiency by minimalizing waste of time and resources. In both the design and the construction process of the FTOL-building, all decisions were based on a lean collaboration between all the involved parties. In order to do this, a three level organization of decision making was determined.

The first level is the management team. All the companies participated in collective weekly sessions of this team. Not only did this mean that all knowledge was directly available in the collective discussions, but every person involved in the meetings also had the authorization to make decisions on the spot. In this manner the

team of specialists was able to make their decisions very efficiently and based on one common goal: to realize a high-quality building. If a decision could not be arranged in the management team, the issue would go up one level to the directors committee. This committee consisted of director-members of all the involved companies and who had meetings every other week. The board of Synthon was the third level; formally the board had the ultimate responsibility for the decisions.

The traditional process in architecture and construction consists of a very linear range of actions where one company can start their work when the other has finished. In consequence: if one party has a delay on their action, every other subsequent company suffers from this delay in terms of planning.

The new project approach allows for a more integrated process, where the entire amount of work for each company is divided into smaller segments which can be spread out across the entire planning. This speeds up the process and can save a vast amount of time.



For example: after the design of the frame of the FTOL-building, both the construction of the frame and the design of the façade were executed simultaneously by the contractor and the architect. This means that the design process and the construction process were happening at the same time. Another example of simultaneous planning: when the façade was being built, the interior design was being made. Obviously this approach involves design decisions in early phases of the project that will limit the freedom of design options later on. These decisions require a good sense of the needed flexibility and a strong choice of standardized measures. Working simultaneously massively speeds up the entire process and it also has design advantages, like already being able to stand in a space for which you will be designing the interior. The early involvement of all the technical parties allows the team to realize high quality building details.

The new project approach requires highly committed companies and individuals who are willing to let go of traditional habits and to help each other out. The team has to be able to address each other on high and low-quality actions and results. This type of collaboration requires a high amount of mutual confidence and has proven to be very rewarding for the entire Fully Transparent Cooperation Method.

Digital prototyping

For the FTOL-building, Broekbakema has made a digital 3D-model in order to explore and determine the spatial design and to generate all design drawings. Laboratory buildings offer challenging assignments in terms of installations and technical requirements. After the FTOL-building was built, the cooperation team has designed and built an adjacent building and is now working on another consecutive building. Within the design and construction process of both the ADC cleanroom building and the MAB laboratory building the concept of digital prototyping was taken to another level. In order to truly integrate all technical aspects in the design, Building Information Models (BIM) were used to create collaborative digital prototypes of the buildings. By working together simultaneously in the same 3D-model with the involved design and construction partners, spatial problems were detected and adjusted early in the design process. This digital prototyping process minimizes building errors. The 3D-models have arranged control over costs and have enhanced the quality of the buildings.

Impressive results

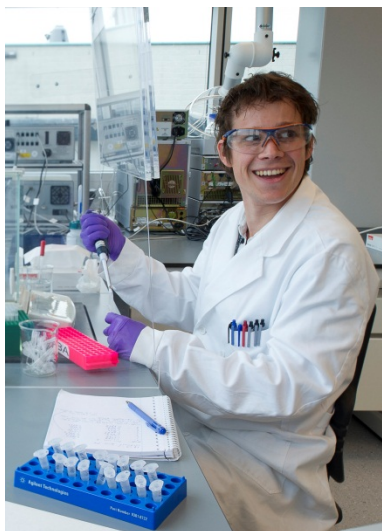
As a new way of organizing the design and construction process, the Fully Transparent Cooperation Method has proven to be very successful. The brand new FastTrack Offices and Labs building was realized within the stipulated time of one year and within the fixed budget. The high architectural and technical quality demands have been fully met with a building that accommodates a pleasant working environment. The collaboration continued however as the adjacent ADC-building was constructed for Synthon according to a Broekbakema design. Currently the architectural office is energetically working on the MAB-building. All of the new buildings

are part of the Synthon headquarters master plan by Broekbakema and are being designed and constructed in a cooperative team based on the principles of full transparency and organized confidence.



Synthon

Synthon, with headquarters in Nijmegen, The Netherlands, is an international pharmaceutical company and a leader in the field of generic medicines. The company started its biopharmaceutical franchise in 2007 and is building a promising portfolio of next generation medicines. Synthon is developing rapidly into a specialty pharmaceutical company, focusing on the therapeutic areas of auto-immune diseases and oncology. Synthon products are currently approved by regulatory agencies in over 80 countries worldwide and marketed through strategic partnerships and – in dedicated areas – through direct sales. Synthon employs about 1,400 staff worldwide.



Architecture

The FastTrack Offices and Labs building (FTOL) has a clear construction. The building consists of five floors: warehouse storage below the deck, a glass office floor onto the green deck and floating above it a horizontal volume of three floors with laboratories, offices and engineering. The entrance is spacious and stands in open communication with the first floor by two voids. High glass walls from floor to ceiling strengthen the interaction with the landscape. Due to the overhang of the upper building volume the solar heat is kept outside in a natural way. The outer wall is built up of two layers: a wind-and waterproof element façade in a bright lime yellow color and an expanded metal screen as a second skin around it. From the highway the volume seems fairly closed, but when approaching the building it opens up and the lime yellow color of the second layer becomes brighter and more visible.

Since 2008 Broekbakema is working on the master plan for the Synthon campus. FTOL is the first building that was realized. Meanwhile, Broekbakema currently works on other designs for Synthon, varying from landscape to interior.

Partners within the project

Client	Synthon
Architect	Broekbakema
Contractor	BAM Gebouwservices
Structural design & calculations	ABT
Project management & installation design	Tebodin
Installation engineer	BAM Techniek