Guidelines for Building Measures after Disasters and Conflicts

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Guidelines for Building Measures after Disasters and Conflicts

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Governance and Democracy

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PREFACE

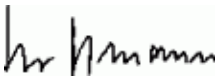
In the past years the global increase in severe natural disasters and the consequences of wars have led to an immense necessity of fostering the rehabilitation and reconstruction of living space especially in South−East Europe and Western Asia. The affected countries themselves can often only make little contributions to that. In the last decade alone, the German Federal Ministry for Economic Cooperation and Development (BMZ), above all, charged the Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ), German Technical Cooperation, with the execution of various redevelopment and reconstruction measures for the accommodation of refugees, displaced people and disaster victims.

Due to the special demands on the construction measures in the context of disasters and conflicts, the BMZ assigned the GTZ to develop guidelines for their conception as well as practical recommendations for their execution. Experience from the most different emergency situations have been specially compiled to elaborate the following Guidelines.

These Guidelines with the annexes present various practical references to the planning, procedures, and execution of reconstruction measures with special relevance to emergency situations after disasters and conflicts. It is addressed to external experts, to national and international organisations, project planners, consultants, project partners and project executing agencies, as well as to those employees of the GTZ who are in charge of the planning and execution of construction measures and their operation in emergency situations after disasters and conflicts.

The concepts and proposals presented in the Guidelines are based on several years of experience of GTZ's technical personnel and aid organisations in the Balkan regions (Croatia, Bosnia and Herzegovina, Albania, Kosovo), in Turkey, Azerbaijan, Sri Lanka, India, Cambodia, as well as Central and Latin America. The Guidelines are to be seen from the point of view of a non−commercial general contractor (NGC) with a development−policy assignment who takes over the responsibility for the realisation of all measures and in doing so generally engages the private construction industry for the technical implementation.

Special thanks are extended to the authors Horst Valentin Kreutner, Birgit Kundermann and Kiran Mukerji, who elaborated these Guidelines. We hope that the Guidelines will meet your interest and look forward to an expert interchange and constructive criticism.



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GTZ – a service enterprise for international cooperation

The Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH, German Technical Cooperation, is a government−owned corporation with worldwide operations. Its development−policy mandate is to help improve the standard of living and prospects of people in partner countries all over the world, whilst stabilising the natural resource base on which life depends. GTZ is responsible for designing, planning and implementing programmes and projects in partner countries oriented by the German Government's development policy guidelines and objectives. The GTZ's main commissioning body is the German Government through the Federal Ministry for Economic Cooperation and Development (BMZ) and other ministries such as the Federal Foreign Office. Other clients of GTZ include the European Commission, UN organisations, the World Bank and regional development banks. Increasingly, foreign governments or institutions also directly commission GTZ services.

Technical Cooperation is playing a growing role in strengthening the capabilities of both people and organisations in partner countries. In achieving this, the institution is itself changing in the process: In the past, answers were found to clearly delineated problems, but today's intricate and complex issues call for more sophisticated approach. Sustaining improvements in people's living conditions in our partner countries in the long term crucially depends on the political, economic and social frameworks in place.

Where crises, conflicts or disasters create acute needs that threaten survival, GTZ provides development–oriented emergency aid (DEA). It has become increasingly apparent in recent years that the loss and damage can be averted by preventive measures, so approaches, instruments and measures have been developed to manage conflicts and prevent crises and disasters.

Refugee aid measures constitute an important activity area of DEA. Refugee programmes address people, who were forced to leave their homelands as victims of war or violent domestic conflicts, or on account of other disasters. The Guidelines presented here offer a general overview of building measures following disasters and conflicts, and summarise experiences and perceptions of GTZ.

1. Summary

Nowadays the consequences of natural disasters annually affect over 200 million people and the number of refugees and displaced persons amounts to over 20 million. This results in an immense necessity of reconstructing destroyed living space or providing temporary living space. The approach of development–oriented emergency aid (DEA) offers a framework within which a variety of questions that go beyond the actual technical construction measure can be discussed, especially those dealing with the working concepts of emergency aid, refugee aid, disaster precaution, as well as rehabilitation and reconstruction.

The development–policy demands on the construction of living space vary: in the case of war, refugees and displaced persons are to be accommodated temporarily as additional persons –without having knowledge about the duration of this accommodation. In the case of those returning after martial conflicts, quite often questions regarding settlement and property rights have to be clarified before a reconstruction of destroyed housing in favour of reintegrating refugees can take place. Considerable destruction triggered by natural disasters claims an extremely high number of homeless so that only part of the needy can be taken care of. Moreover, it is necessary to decrease the susceptibility to future disasters. People in need of dwelling space, possible beneficiaries, and potential future residents have to be selected on the basis of a thorough analysis, if disparities and potential conflicts are to be avoided by this measure. This becomes especially necessary when conflicts have led to flight and destruction.

The reconstruction of dwelling space in particular can contribute considerably to the stabilisation of the living situation of the affected population through more personal security and well–being and through re–establishing a productive everyday life. Supportive measures can strengthen the motivation for reconstruction and boost the local construction industry. Taking into consideration appropriate technical aspects of construction and settlement can decrease the susceptibility to future disasters. Thus, construction measures in the aftermath of disasters and conflicts constitute a fundamental contribution to redevelopment. Criteria such as significance, participation and self–help, poverty reduction, conformism, possible effects of conflicts, the reduction of vulnerability and, last but not least, sustainability have to be considered and weighed up in order to ensure the development–policy quality of the measures. Apart from that, main priority has to be given to the economic viability of the measures.

The concepts and suggestions presented are to be seen from the point of view of an organisation acting as a kind of a non–commercial general contractor (NGC) or an implementing consultant with a development–policy assignment. The NGC or implementing consultant "takes over" the responsibility for reaching the goals of all measures. He generally does not "undertake" the technical implementation himself, but instead employs the forces of the local and international construction industry. The financing of the projects in question is effected through technical cooperation (TC), financial cooperation (FC), development banks, the European Union (EU), the United Nations (UN), or other donors.

The methodological approach described in these Guidelines assumes that a donor manifests the intention of support on the basis of which a situation analysis or a rapid assessment is carried out by the NGC, and from this an offer or an implementation proposal is drawn up. It describes the individual steps starting with the placing of a commission via the implementation arrangement with the local project–executing organisation and all further planning measures required to carry out the commission up to the cooperation with companies

of the private construction industry. For the execution of construction measures contractor models and self−help models are presented in detail. They conclude with the handing over of the construction works and recommendations for the aftercare operations and documentation of the projects.

Various aspects to be considered are explained in short phrases, ranging from the defining of the commission and the proceedings during field work, via the analysis of the local construction industry, aspects regarding technical infrastructure and supplies that are connected to residential building, up to questions concerning the target groups.

The execution of construction measures in cooperation with the local and international construction industry (contractor models) comprises the presentation of the different concepts of rehabilitation and rededication of public buildings for the short−term accommodation of homeless people, as well as the rehabilitation of damaged or destroyed private houses. Moreover, the construction of new housing settlements is treated as an alternative in cases when rehabilitation models do not appear to be adequate for the solution of the emergency situation. All questions essential to the role and responsibility of the project management and those related to contract procedures and awarding of contracts are discussed.

When executing the construction measures by self−help, the target groups are given support in the form of consultancy, material and financial aid. Models to support individual family self−help as well as community self−help for the construction of accommodations and community facilities are discussed. The building yard model, which basically refers to material aid and assumes an execution of the construction measure by self−help, but which, depending on the situation, can in addition include further technical support, is also presented.

And finally, basic planning criteria of simple constructions are summarised, explaining the most important protection measures against natural hazards or measures to reduce the risk of destruction due to natural disasters.

These Guidelines concentrate on construction measures that require engineering expertise and management skills in the field of construction.

The annexes comprise a selection of exemplary forms for proceedings, the execution of tenders, samples of guarantee, and practical examples of planning and construction contracts, which of course have to be adapted to the respective situations.

Case studies of GTZ projects are inserted at different places to illustrate some of the models and procedures described, and also present some interesting cost figures.

Humanitarian aid or emergency aid in their narrow sense, which satisfy short−term protection needs against the effects of harsh weather by means of mobile material (e.g. tents), as well as the long−term consultancy of partner countries in the field of residential building construction and housing development, are not part of these Guidelines.

In the case of a GTZ−executed project, these Guidelines do not substitute the internal GTZ organisation directives, “Orientations and Rules” (O + R), which have to be observed in all events.

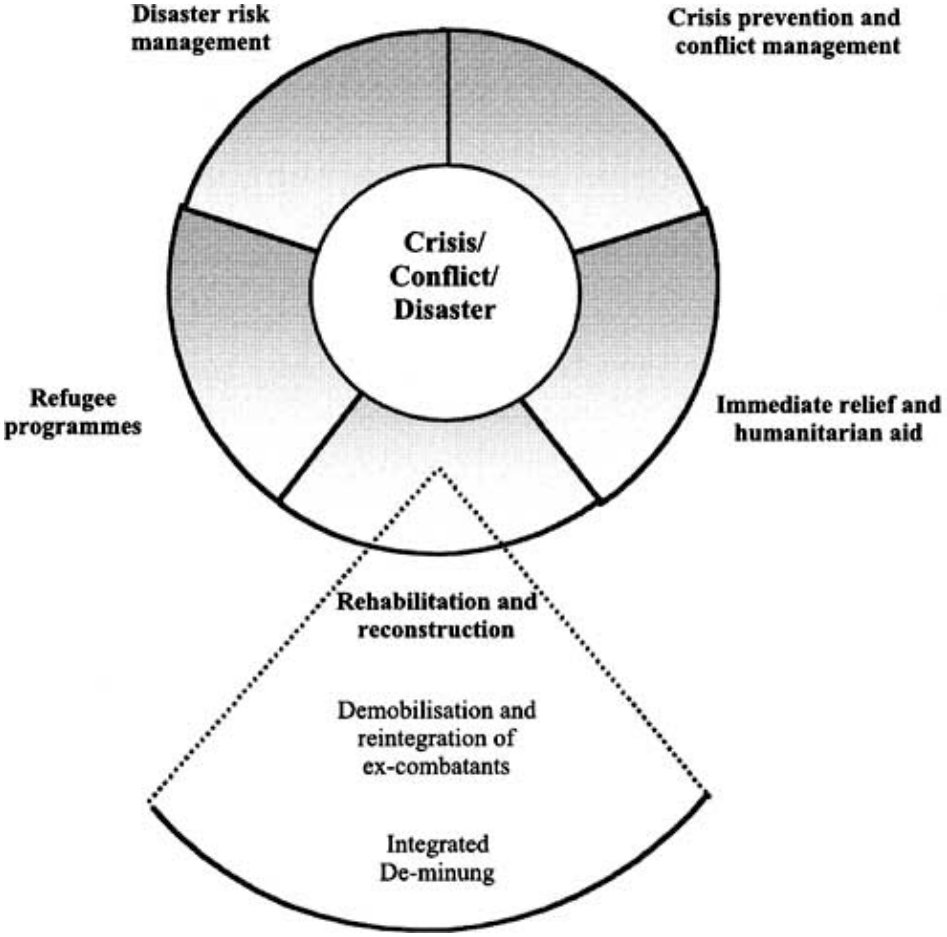
2. Building measures in development−oriented emergency aid (DEA)

2.1 Development−oriented emergency aid

The objective of development−oriented emergency aid (DEA) is to contribute to lessening people’s vulnerability and reducing the dangers to which they are exposed as well as to help alleviate the poverty caused by disasters and crises. This can be realised by preventing or coping with emergency situations on household, regional and international level. According to the development−policy conception of the BMZ, its aim is to ensure the transition from survival aid to reconstruction without interruption.

Development−oriented emergency aid comprises specific initiatives, measures, and reactions to emergency situations in crises, conflicts and disasters, as well as corresponding precautionary measures. They fit into the

realm of disaster risk management, crisis prevention and conflict management, emergency aid and humanitarian aid, as well as in refugee programmes, rehabilitation and reconstruction. In certain cases, the "demobilisation and reintegration of ex–combatants" and "integrated de–mining" can also be part of DEA.



Activity areas of development–oriented emergency aid

In reality, borders between the fields of activity are fluent. After an emergency situation, it is DEA's concern to ensure the participation of the target group and to promote partner institutions already at an early stage and thus be structurally effective at all levels. DEA mostly comprises a package of measures which focus on a specific emergency situation and complement one another. Technical interventions such as the provision of infrastructure or living space are generally connected to consulting functions and a working towards a constructive socio–political development. (See also "Development–oriented emergency aid – GTZ's working principles" in the Bibliography).

2.2 Building measures in the context of development–oriented emergency aid

In emergency situations, the creation of living space contributes to the satisfaction of elementary basic needs. Living space increases the personal security of the people affected, creates privacy, and constitutes an important condition for the establishment of a productive everyday live. When executing building measures after disasters and conflicts the development orientation is reflected in the concentration on local actors (communities, construction companies, sector authorities), in the application of contractor and self–help models (see chapters 5.1 and 5.2) and in the overall capacity–building effects of the measures.

Building measures after disasters and conflicts usually take place within the framework of refugee programmes or reconstruction programmes. In certain cases they can also be considered as emergency aid measures. Disaster risk management with a focus on technical construction concepts is always part of building measures before or after disasters. Possible conflicts are taken into consideration when creating building measures with respect to reducing conflict potential.

Migration movements in the form of suddenly emerging massive surges of refugees or displaced people, but also in the form of creeping rural exodus out of disaster–induced impoverishment are often triggered by

crises, conflicts and disasters. Within the framework of rehabilitation and reconstruction, the authorities responsible for the control of migration and new settlements can be given technical advice in connection with the aid measures as well as on issues that go beyond the scope of these Guidelines.

In the case of building measures, the projects are generally concluded with the buildings' acceptance when the actual utilisation starts. Therefore, the preconditions for sustainability have to be established by thorough planning and during implementation. Consultancy and further training of executing organisations and other institutions can be effected to ensure, for example, a better future administration of the dwellings and their connection to the local infrastructure, the living space and economic area. The integration of building measures into an overall concept or programme of DEA, which goes beyond their actual implementation, can guarantee those services even after the practical implementation of the building measures. Necessary accompanying measures can be integrated into this overall concept and aftercare operations following the completion of constructions can be realized more efficiently.

2.2.1 Refugee programmes

Refugee programmes (and correspondingly also programmes for displaced people in their own country) include measures of short–term refugee support in the host region as well as their repatriation and reintegration into their home region. Within projects concerned with the provision of living space for refugees in the host region on a short–term basis, temporary dwellings can be created for the target group. If, for this purpose, private houses or public buildings are rehabilitated in the host region, the building measure itself can also be considered as a long–term reconstruction measure in the host region. The planning and implementation of the building measure takes into consideration the needs of refugees as interim users and those of the host population as end users. In other cases, simple temporary accommodations in camps or collective shelters are established in locations outside the housing area of the host population. An informal after–usage often takes place, but is not subject of the planning and implementation of the building measure itself. Generally, the permanent settlement and integration of refugees in the host region is not part of development–oriented emergency aid. (See also "Development–oriented emergency aid –GTZ's working principles" in the Bibliography)

2.2.2 Rehabilitation and reconstruction

Within the framework of projects of repatriating and reintegrating refugees, permanent housing facilities have to be created and rehabilitated. Thus, technically speaking, they become part of the field of activity of rehabilitation and reconstruction, which aims at re–establishing or even improving the situation before the disaster or crisis. To reintegrate refugees into their home region can be a very complex and costly task, mostly combined with other measures, such as the promotion of economic and social reintegration measures (see also case study L – Sri Lanka). According to the specific context, the reintegration of ex–combatants within building measures can play a crucial role and thus also create better conditions for a peaceful coexistence in the future.

2.2.3 Disaster risk management

In the aftermath of disasters, residential building usually takes place in the form of rehabilitation and reconstruction in close relation to disaster risk management. No matter whether it is about selecting the location or applying the most appropriate construction methods, the reduction of vulnerability to disasters is the main focus, even in the case of repair works. The final utilisation by the population rendered homeless generally constitutes the planning base. In cases where there is a great urgency to provide shelter after a disaster within a very short time for a large group of people, temporary houses in the form of prefabricated structures with a limited life span can be considered (see case studies E –Western Turkey and G – Croatia in these Guidelines). In that case, depending on the aim of the building measure, it falls into the realm of emergency aid, since the urgency and the accommodation of large groups of people have been given priority over more expensive buildings with a long–term useful life. In all cases, building measures entail a massive intervention into the socio–economic environment. Thus, it is not only in the context of conflicts that the consideration of potential conflict effects is imperative (See also GTZ's "Disaster risk management – working concept" in the Bibliography).

2.2.4 Planning horizon and special conditions in emergency situations

Building measures after disasters and conflicts are carried out under considerable time pressure, especially at times when in temperate regions the winter season is about to begin. At the same time planning and implementation have to be carried out under particularly difficult conditions: due to the confusing situation information is often not available or unreliable. Especially during wars and immediately afterwards, planning becomes more difficult due to the unclear planning horizon, such as the duration of the crisis and the changing number of refugees and displaced people. After disasters and wars important road links are disconnected and the infrastructure facilities are partly destroyed. Administrations and executing authorities in the partner countries are overburdened and, after wars, partly staffed with inexperienced employees. The population is primarily concerned with ensuring their immediate survival. High economic losses or incomplete households limit the self–help potential of the people affected. Likewise the local construction industry might be directly hit by destruction.

2.3 Development policy criteria of implementation

The quick accommodation of the people rendered homeless is the objective of housing measures after disasters and conflicts. Generally the commission is accomplished when the building inspection takes place and at the same time the buildings are handed over to the beneficiaries. Development policy criteria of building measures basically refer to the long–term usage. However, the planning and implementation of the building measures include leeway for actions having a crucial influence on the project's development policy orientation via the selection of the implementation model and the implementation partner. In this respect, some of the following criteria tend to have contradicting effects in the practical pursuit. There is no patent remedy –they have to be evaluated in the planning phase according to the respective situation. The economic viability as a further criterion will be discussed in more detail in chapter 6.2.

2.3.1 Significance

The huge number of persons having become homeless due to expulsion and destruction of dwellings leads to a high demand for the re–establishment of living space. At the same time, the provision of shelter constitutes a comparably high individual support as long as it does not involve the utilisation of public buildings for temporary living purposes (see case study C – Bosnia and Herzegovina). In general, the largest part of the re–establishment of living space is carried out by the target groups themselves by self–help and with their own financial resources, partly supported by subsidies and special loan programmes. As a result of the high costs per user, projects of shelter provision generally only reach a small part of the needy – when considering the large number of affected people. The selection of the beneficiaries should therefore be carried out with great care and include criteria of need. In general this is done by local authorities that are sufficiently familiar with the area and the people. However, the financing agency of the aid measures or their appointed general contractor should ensure the definition of the selection criteria, as well as sporadically check and observe the local authority's needs assessment. The project's significance can be controlled by the selection of the models and concepts described in chapter 5.

When rehabilitating private houses, the benefit is also broadly extended to the host population, and in the case of public buildings in favour of the host communities. The self–help models of mutual aid and the building yard model (see case study L – Sri Lanka) can also have the same effect. However, in view of all previous experience, due to the immense back–up intensity, it is not to be generally assumed that self–help can reduce the total costs of the construction project.

The significance of residential building has to be evaluated not only with respect to the direct users but also to the indirect users, who apply the acquired building techniques in future construction projects. This happens, for instance, when the building technique constitutes a model for disaster–oriented building or when the skills transferred by way of training of construction workers consitute an important component.

2.3.2 Participation and self–help

Since building measures constitute a considerable intervention into the local structure, especially in the case of new settlements, all groups that are directly or indirectly involved, are required to participate in the planning and realisation of the measures. These especially include the following groups: the future (interim) users as direct target group, the possible ultimate users, the total population as being indirectly affected in the area, construction companies and the local economy, the local administration and the district authorities. Their active participation ensures the achievement of the project's intended goals: the quality of the process of identification of the beneficiaries and the cooperation with the local population reduces the risk of the buildings being misused after completion of the building measures. Therefore, even if the time pressure is high in most of the cases, the following opportunities should be taken into consideration:

- community participation, even if central project executing organisations and partner institutions assume responsibility;
- participation of organisations of the target groups or representatives (e.g. for refugees without adequate organisation);
- working towards the foundation of an empowered participation forum, where advantages and disadvantages can be considered for all groups and possibilities of reconciling interests can be discussed;
- working towards the involvement of the surrounding area's total population in benefiting from the measures, as well as in their implementation (provision of labour and commissions for local companies, even for smaller works);
- participation of direct beneficiaries in the designing of dwelling space;
- appropriate consideration of the future usage respectively the need of potential future beneficiaries.

Case study **A**

Reconstructions of houses after earthquake in El Salvador

Financing agency:	**Federal Republic of Germany represented by BMZ within development cooperation**
Financing volume:	**1,833,875 euros**
Period:	**2001–2002**

On 13 January 2001 an earthquake measuring 7.6 on the Richter scale hit the coast of El Salvador. On 13 February another earthquake measuring 6.6 on the Richter scale occurred, the epicentre of which was close to San Pedro Nonualco. The second quake, which was limited to just one area, only had a local but destructive impact. The damages covered extensive areas and affected more than 90% of the houses in the urban and rural areas, as well as roads, water supply systems, and the social infrastructure. This earthquake claimed a further 300 dead, approximately 3,000 partly severely injured, more than 32,000 destroyed houses and more than 150,000 homeless.

At the beginning of March 2001, BMZ decided to support the government of El Salvador in reconstruction and assigned the GTZ with the implementation of the project REVIVES (Reconstrucción de Viviendas en El Salvador/reconstruction of houses in El Salvador).

Indisputably, the aim is to reconstruct a significant number of houses. Besides and beyond this, building activities are enriched by complementary components and topics such as gender, training in the building sector, organisation, disaster risk management and improvement of the hygienic situation. In addition to training activities in concrete "learning by doing", accompanied by intensive consulting with permanent consideration of the highest possible transparency and participation of the most diverse groups, the

methodology consists in decision−making. Therefore a complex network of different intervention levels and actors has been created for the implementation, connecting the different measures in the rural as well as the urban area, with the main actors being different groups of the local populations, the local authorities, as well as both of the administration units of the mayor's offices of San Pedro Nonualco and Santa María Ostuma.

The dual approach is peculiar to the project. On the one hand, earthquake−resistant houses adapted to the corresponding vulnerability to disasters were built in the rural areas. The institution responsible for property rights was contacted and the registration of sites in the national real estate register was supported. Thus the project succeeded in directly supporting families, as well as in making the rural population familiar with the institution and this mechanism. On the other hand, 29 houses with the same characteristics were reconstructed in the urban area, which, in addition, re−established the cultural identity by maintaining the style typical for the region, under the overall control of the municipal administration, the Vice Ministry of Housing, and the cultural council CONCULTURA. In the urban area, the planning of reconstruction resulted in the local development plan. Executing reconstruction with restoration character has so far been an unprecedented measure in El Salvador und has been greatly appreciated by both national institutions. At the same time, the population was sensitised to disaster risks with accompanying modules and their self−help capabilities strengthened, both practically and theoretically, paying main attention to women's participation in all matters. Personal contributions and mutual assistance in solidarity showed that the social cohesion can be fostered by joint aims, even if in some cases a lot of convincing had to be done first.

The project implementation lasted until the end of 2002. A total of 333 houses had been reconstructed in the rural area and 29 houses in the town centre (culture conservation). With the help of the reconstruction measures, a total of 1,763 victims of earthquakes could be accommodated in the rural area and 159 in urban locations. Applying a mixed calculation results in accommodation costs of 954 euros per person, including all accompanying measures, incidental expenses, and GTZ overheads.

The project continued the support initiated by emergency aid (supply of food and necessary consumer goods) and was complementarily extended by a TC reconstruction project that will last even longer (keywords: sequencing and sustainability).

Furthermore, self−help can be a major component of the rehabilitation and reconstruction of dwelling space. It can either take place within the "self−help models" described in these Guidelines incorporating the beneficiaries' participation as labour force in its narrow sense, or in the form of various personal contributions, even in the broader sense of "contractor models". Of importance in this respect are the craftsmanship and the target group's time capacities, which can be reduced due to the need to care for their families and secure their existence (agriculture and wage−earning). Criteria for deciding between contractor models and self−help models are described in chapter 5. Altogether, personal contributions arise from the participation in planning and implementation, monitoring, and several other services that are not directly and adequately remunerated. The measure itself and its success can be structurally effective as a contribution to the reconstruction or the development of the production capacities in the country: executing organisations, political decision−making bodies and, last but not least, the companies and people of the local construction industry make substantial contributions, even if local planners and construction companies, for example, are paid by donors' grants and take financial benefit from it. These earnings flow directly back into the trade cycle and foster the economic development of the concerned country.

2.3.3 Poverty reduction

Natural disasters such as earthquakes, floods, heavy storms and volcanic eruptions leading to the destruction of habitations in most cases affect the whole population of the disaster region. The poorer population groups, however, living in less solid housing, quite often on more susceptible land, are more severely harmed. In addition to that they seldom have the financial means necessary for the reconstruction of their housing. The objective is to counteract increasing poverty.

Thus, the concern of building measures must be to ensure the creation of dwelling space for the needy groups, whose own resources are insufficient for the reconstruction. It has to be taken into consideration that in many cases the needy groups are not in a position to offer a significant contribution in the form of manpower. The importance of a careful selection of the target groups was indicated under section 2.3.1, Significance. This can be determined by a reasonable choice of criteria of neediness, as for example the number of persons to be cared for per household, the number of household members that are able to work,

the amount of household income, etc. The transparency of the selection process should be guaranteed by public announcement and the formation of the selection committee.

By selecting the model (see chapter 5), the involvement of the local enterprises or the national economy can be influenced, and consequently, this can have stimulating effects on the economy. Such impacts on the people's income in crisis regions are able to bridge poverty caused by the crisis, and by utilising the manpower of many – even unskilled – workers, they can have positive effects especially on the poorer population groups. Whereas the building of prefabricated houses mostly requires parts imported from abroad, most parts for the conventional local constructions can be obtained in the country. The questions of urgency and costs are, among others, the determinants for the choice of the construction method. Given the labour–law conditions, refugees or displaced persons (usually men) can apply as skilled or unskilled workers at the companies assigned with the provision of shelters. Opportunities arise especially in the case of large order volumes, when at least temporarily new employees are hired. A "cash for work" model in the field of self–help can also improve the households' economic power in addition to the self–help character. In all, the contribution and the allocation of the economic benefit to the individual groups should be assessed when selecting a model, in order to avoid an intensification of economic disparities.

2.3.4 Appropriateness

The appropriateness of the measures refers to socio–cultural factors, as well as to the construction standards, and the selection of material. Socio–cultural factors include the consideration of cultural, gender–specific, and religious characteristics, but also the accustomed form of housing estate, such as settlement with scattered buildings or agglomerations. The personal security of the beneficiaries has to be guaranteed and assessed on the basis of especially vulnerable groups (women, children, old people, minorities). Standards for spatial dimensions and equipment should in no case be higher than those of the resident population. It has to be distinguished between temporary shelter, guaranteeing a necessary minimum of hygiene, cooking facilities, and privacy and the final utilisation, possibly offering greater spatial dimensions. As far as possible, the designs should incorporate sufficient flexibility for the beneficiaries to be able to make changes within their dwelling spaces, add small extensions, and, for example, develop small vegetable gardens. In order to lay the foundations for an everyday life and the support of a productive coexistence, the construction of social buildings, such as kindergartens, schools, health care and community facilities, is indispensable. When rehabilitating existing living space, buildings of social infrastructure, such as schools and health care facilities, can also be rehabilitated or enlarged in order to be able to better cope with the new demands on the community. Appropriate planning and the involvement of the target groups' representatives considerably foster the ownership of the residents. Locally available resources should be considered in the use of construction material, in order to create regional economic effects as well as exemplary model solutions. Building measures are to be verified with regard to environmental concerns to avoid the over–exploitation of wood or other local resources. In the case of buildings that are to serve as models, an environmental impact assessment should be conducted to determine the risks of the future use of resources when spreading the technology.

2.3.5 Effects of conflicts

Due to the immense support of the target group, it is important to avoid or at least mitigate socio–economic disparities during the planning and implementation phase. Implementation models, which involve and support a significantly large number of different parties, either directly or indirectly, are more appropriate than those that only consider a specific target group of homeless people or the direct beneficiaries. In case employment and income opportunities arise for the whole population in the area, disparities and potential envy are limited.

Furthermore, the consideration of existing conflicts, especially in refugee programmes, has specific importance. In the light of conflicts that are still basically unresolved, the housing situation has an immense influence on the dynamics of the conflicts. Thoughts should be given as to how much physical distance is necessary to avoid further escalation as well as to possibilities of promoting a de–escalation, maybe even indirectly.

The employment of refugees can meet the local population's disapproval, lacking income possibilities themselves. To the disadvantage of the local population, the abundant supply of manpower can lead to a dumping of the wages typical for the area, particularly when refugees and displaced persons are already

provided with their basic needs, such as food, free of charge. A limited operation of cash for work, however, can lead to a positive economic effect even with a shortage of formal work permits of the refugees. In the case of rehabilitation and reconstruction, the employment of formerly displaced persons and ex–combatants can have a stabilising effect on the conflict dynamics and help to contain everyday violence.

When rehabilitating and reconstructing, it is essential to clarify property questions before the construction measure, in order to limit, for example, potential disputes about utilisation, which tend to arise during the integration of formerly displaced persons. The infrastructure of the building measure should be adapted to the local standard. Additional infrastructure facilities for the host population can also be provided, if necessary. In order to promote reintegration, it is beneficial to plan integrated schools for the resident population, returnees, and possible new settlers, and to adapt the existing infrastructure accordingly. The forming of ghettos in the new settlements, which frequently have disintegrative consequences, should be avoided. Exchange and regulation forums, as well as groups for the joint observation of the effects, can also be created between representatives of the target groups, in the broader sense, and the beneficiaries of the dwelling space.

2.3.6 Reduction of vulnerability

Housing development after disasters is sustainable only if a reduction of the population's vulnerability to future disasters is achieved: within the framework of building measures basically by the correct choice of location and by disaster–oriented construction techniques.

Accordingly, building measures have to be assessed in terms of the extent to which the disaster risk can be reduced by the selection of the building site. A decision to establish new settlements on less risky terrain, however, entails the disadvantages that are commonly associated with new settlements. Besides deciding on the location, several technical details, some of which can be realised without significant additional expenses, can cut down the constructions' vulnerability to destruction by disasters. The planning criteria for simple buildings, mentioned in chapter 6, describe disaster–specific aspects. In addition to the realisation of planned building measures, the training of building enterprises, craftsmen and the population in the application of simple techniques for improved construction can be organised. Corresponding consultation of the responsible authorities can also contribute to an improvement of the strategies for disaster risk management. Provided the building measures are included in a package of measures of DEA, several possibilities arise to cross–link them with other precautionary measures.

2.3.7 Sustainability

The sustainability of building measures is assessed in terms of the objectives of satisfying the needs of the homeless and the quality of achieving those needs.

In general, sustainability is enhanced through the wide acceptance by all the parties involved and their integration in the project. In the event that the project executing organisation originates from the building sector, it is essential also to ensure the participation of the local authorities. Sustainability is also increased by the appropriate consideration of the needs of the interim and the end users. Building the dwellings for the end users represents the ideal prerequisite. In the case of refugee programmes, it is important to consider the final utilisation by the residential population in the host region after the return of the refugees.

Referring to the direct target group of beneficiaries, their elementary basic needs are satisfied and thus the conditions for development out of an emergency situation are improved. Already at an early stage, construction projects as well as back–up measures of DEA can provide organisational support the future beneficiaries. This facilitates personal contributions, neighbourly cooperation, and the functionality of the future administration. Back–up measures meeting requirements and follow–up assistance also serve to achieve improved sustainability. Customer satisfaction, however, can only be ascertained in retrospect. Since building measures after disasters and conflicts mostly do not include any promotion by executing organisations beyond the measure itself, structural effects on the institutions are generally not to be expected.

3. Methodological approach

The methodological procedure begins with

1. the donor/financing agency defining the intended support, thus

2. enabling an expert group of the NGC to perform a situation analysis and a rapid assessment, which, in accordance with the project executing organisation,

3. result in an offer by the NGC, incorporating a working or implementation proposal. After

4. the commissioning of the NGC by the financing agency

5. an implementation agreement has to be concluded between the NGC and the local project executing organisation, before

6. the implementation of the reconstruction measures can begin. Upon completion

7. the acceptance procedures, handing over and, if necessary, aftercare take place.

Documentation and knowledge management complement the measures with regard to the future evaluation of experiences.

3.1 Definition of the support of the donor or financing agency

The donor or financing agency verifies the eligibility for promotion of a supporting measure and defines his intended support. If necessary, he is advised by experts of the NGC. Normally he fixes a budget or a budget scope. The development–policy intentions of the donor, as well as matters that are deliberately excluded from support, have to be analysed. The same applies to the envisaged time frame. Rough notions of minimum and maximum standards should be compared. Questions concerning the possible desire for public appeal of the measures have to be clarified as early as possible. The donor/financing agency should check the contact addresses of institutions and persons, if any, that can provide support on location.

During the analysis and rapid assessment of the situation on location the individual appraiser, or the team, represents the interests of the potential donor/financing agency and follows any possible conditions it stipulates.

3.2 Analysis and rapid assessment

Questions regarding emergency aid are usually given priority in a rapid assessment. The second step for the building experts is to deal with questions of temporary shelter for disaster victims, refugees or displaced persons.

Within the framework of these Guidelines different solutions are described.

The question of the possible project type and the form of implementation already arises at the time of the situation analysis and the rapid assessment. It mainly depends on:

- the extent of damage and degree of destruction,
- the number of persons affected,
- the time frame in relation to the number of persons affected and the climate (winter/summer),
- the necessary/appropriate reconstruction technology,
- the availability of required human and material resources.

During the rapid assessment on location, the administrative structures of the project executing agency, if already nominated, must be investigated, as well as its expected performance capability. This decisively influences the conception of measures and the taking over of responsibility, as well as the possibilities of part financing of project components by the project executing agency.

The major steps of the needs analysis and rapid assessment are specified in the form of a checklist in section 4. There, the list mainly focuses on the building aspects of questions regarding the creation of emergency shelters or reconstruction.

3.3 Working and implementation proposal, offer

The NGC receives the commission on the basis of an offer incorporating an implementation proposal. The potential donor or financing agency should be informed of the situation by telephone immediately after completing the rapid assessment. It is advisable to send them the concept of a working or implementation proposal before elaborating the final offer in order to consider their comments and suggestions in the offer.

The offer itself should at least deal with the following aspects:

Brief summary of the project with short statements on problem analysis, project objective, planned results (achievements), target group, project executing organisation, cost figures, time schedule, assumptions and risks.

The terms of payment and special conditions of contract are to be agreed upon. The offer to the donor/financing agency should be made at the best possible cost estimates on the basis of the prime costs of the NGC. The imponderables in emergency aid and reconstruction measures are too great to be able to agree on a fixed price. If an upper limit is not to be exceeded under any circumstances, this upper limit can be agreed upon on the basis of a variable scope of works, which has to be adapted, if necessary, during project implementation, in agreement with the donor/financing agency. The same can be applied when sub−contracting construction works.

3.4 Commissioning

Depending on the financing agency the commissioning might go through a long administrative process. Nevertheless, in order to start the emergency measures on a secure basis as quickly as possible, it is recommended that a letter of intent is issued by the financing agency or, if commissioning is not yet possible due to formal reasons, a written confirmation to the NGC by the financing agency is necessary. This is advisable if, for example, an exchange of notes has to be executed beforehand. The statement should include an authorisation for commencing the measures, including the assurance that, in the unfavourable event of a project break−off, the expenses incurred up to that time will be reimbursed to the NGC. On such a basis the NGC will be in the position to invoice.

3.5 Implementation arrangement with the project executing agency or target groups

In cases of emergencies and disasters, administrations and political decision−making bodies in the affected countries are suddenly confronted with unexpected events. Total overburden, lack of experience and, as a result, inadequate coordination are the consequences. A great number of helpers come into the country from all around the world, in many cases even without experience, and want to start helping immediately.

It is essential to get acquainted with the potential local executing organisations or appointed political authorities and conclude written agreements with them, so that the affected administrations get an overview of the aid measures in the country. This is a minimum condition to achieve coordination, information, efficiency, an overview, a fair allocation of assistance and even more. An official, written agreement ensures legality and thus also a certain degree of protection of material and staff.

According to the political significance and the scope of the material aid measures, it may be desirable or necessary in bilateral aid measures to conclude a special exchange of notes. An exchange of notes constitutes the highest form of agreement between governments. The decision on that is taken at the ministerial level. The procedure is usually time−consuming. However, should there be a need for speedy implementation of the aid measures, there is the possibility of a pre−commissioning, as described under 3.4. The advantage of such an exchange of notes consists in the highest acceptance by all parties involved. Within its framework, exemption from import duty and taxes for material and personnel, competences and important partnership contributions can be regulated. It is common and time saving for emergency aid to use unilateral notes through the embassy, while exchange of notes within emergency aid projects is exceptional and makes sense only for very large projects.

Implementation agreements between the implementing organisation (here, for example, the NGC) and the local ministry in charge, having been appointed or especially created for emergency cases (e.g. Ministry of Construction, Ministry for Refugees), or downstream bodies, are common practice. In the case of bilateral aid, the German Embassy should be consulted when concluding the agreement. Essential contents of such an agreement could be, among others:

- nature and purpose of the aid measures,
- location of the measures,
- beneficiaries of the measures,
- specification of contributions to be made from both sides,
- amount of the financial contribution from the German side, or the donor/financing agency and, if so agreed, of the project executing organisation,
- tax exemptions for seconded experts,
- exemption from import duties on material and other taxes.

For regionally branched measures, in which the partner institutions delegate the responsibilities to provinces and communities, further implementation agreements with similar contents also have to be concluded with them, however, only with reference to the region in question.

3.6 Taking over, handing over, aftercare

The taking over and handing over procedures fulfil different functions in “contractor models” (section 5.1) and “self−help models” (section 5.2). While the procedures involving acceptance certificate, guarantee period, guarantee retention, etc., common in the construction industry worldwide, apply to “contractor models”, mostly followed by a media coverage and publicly appealing ceremonies of handing over to the partners or project executing agencies, the taking over and handing over in the case of self−help measures takes place successively after completion.

Newly established housing areas and buildings reconstructed to accommodate disaster victims require aftercare services. Already after the commencement of construction, questions concerning administration and management during the utilisation phase are to be discussed with the project executing organisation and personnel is to be recruited early. In the final stage and with the handing−over of buildings and installations, the latter is introduced to the technology of installations, such as electricity, gas, water, and sewage, and is put in charge of operation, maintenance, and guarantee claims after occupation of the buildings.

It is necessary to establish the technical means to be able to gradually recover the rental and operating costs from the beneficiaries by installing electricity, gas, and water meters during construction.

3.7. Documentation and evaluation

In the case of emergency aid measures, implemented in a relatively short period of time and under difficult and often chaotic conditions, documentation often comes off badly. However, it is exactly the experiences from such projects that are important to document, and thus make information quickly retrievable in a similar situation later on. Problems, that inevitably arise during such projects, can be better analysed the more information is available. Helpers in emergency situations are not always experienced experts, but very often dedicated people, who are confronted with such situations for the first time and depend on information from earlier relief operations. Documentation is also indispensable in view of knowledge management.

Although each disaster and emergency situation signifies extreme pain for each individual victim, press reports are often a lot more dramatic than the real situation, i.e. with regard to the scope of damage and the number of victims. When visiting the hardest hit places a photo documentation should be carried out, especially before the clearing up works. All further information from the investigations stated under section 3.2 “Analysis and rapid assessment” should be documented in written form. The planning process and important decisions should also be recorded.

Detailed stock–taking of the buildings and the situation on the spot constitute an important condition to match planning and demand. The planning is generally not done on the spot, so that not only written accounts but especially photos are indispensable. Before starting with actual rehabilitation measures, photos of the destroyed buildings should by no means be forgotten, in order to permit a comparison with the situation after their rehabilitation (before/after documentation).

Since many individual services and supplies by different partners are required for the progress of construction during implementation, a chronological documentation of the course of construction (time schedule) is imperative for the monitoring of the project. All decisions taken, especially the awarding of contracts, should be documented according to the existing conditions.

It goes without saying that all planning documents have to be kept for a period of approximately 15 years in the form of paper copies as well as on electronic media. Since plans are amended or modified according to the given circumstances during the implementation phase, “as–built plans” have to be prepared by the architects.

Aid funds are generally also tax money and are thus subject to certain usage guidelines which have to be observed strictly. Therefore, it is compulsory to document in detail the awarding of construction commissions, the contracts, and the costs, in order to be able to verify their correctness later. Further information can be found under 5.1.4 “Contracts and awarding procedures”.

With the help of today’s technical means it is easy to document all important phases of an aid project photographically. This is important to show situations before and afterwards, but also to document the gradual development during implementation, unforeseen events, and building components that will be concealed later on. These photos can be easily transmitted electronically, enabling experts in their home office, for instance, to participate in the solution of problems without having to undertake costly and time–consuming travels.

When filing the photos it is important to note the name of the place and the date on the file or on the back of the photographic prints. These details are especially helpful when producing information brochures, which should be a must for all important projects.

4. Needs analysis and rapid assessment on location

The following points of consideration and suggestions for the situation analysis and rapid assessment are restricted to investigations in the field of construction and technical infrastructure. In the concrete examples of the project planning and management, described in chapter 5, a series of further points relevant to the projects are cited, which, without claiming to be exhaustive, are to be observed as well. In retrospect, references are again made to the remarks under section 3.2 (Analysis and rapid assessment).

4.1 Before departure

Here again, reference is made to the remarks under section 3.1 (Definition of the support of the donor or financing agency). Additionally the following aspects should be considered:

Defining of commission:

- Clarifying the expected budget and possible modalities of the donor/financing agency;
- approaching the donor/financing agency about possible special instructions or reservations towards institutions/persons;
- agreeing with donor/financing agency on whether minutes of meeting can be signed, for example, by the project executing organisation;
- clarifying specifications/intentions concerning contents, target groups;
- ascertaining former and future cooperation in the partner country, as well as cross−connections, and aftercare.

Logistics:

- Ascertaining contact addresses on location (embassy, aid organisations, hotels, companies, planners/architects/engineers);
- considering relevant press information from the Internet or other sources and, if necessary, situation reports of leading organisations (UNHCR, International Red Cross) and others;
- clarifying communication links (e−mail, telephone, fax) with the relevant persons of the home office;
- deciding on interpreter; mobility in the country; international driver's licence;
- visa issues; valid passport; vaccination card; vaccinations; first−aid kit;
- personal financial provision;
- possibly taking out insurances.

4.2 Methodological recommendations for investigations on location

Collecting information:

- Procuring basic information, situation reports, etc. of leading organisations (UNHCR, International Red Cross), also on location, if available;
- investigating estimated numbers of refugees and persons rendered homeless, including indication of the sources;
- conducting conversations with relevant government representatives and, in particular, with the executing organisations of the aid measures;
- enabling information exchange with GOs or NGOs and e.g. UNHCR, that are present on location, thus providing an overview and possibly avoiding duplication of work;
- enquiring of the affected government about existing or planned aid programmes and responsibilities;
- enquiring about the government's budget scope, if possible;

• investigating aid measures of other donors in the building sector;

• substantiating and assessing information received by repeated enquiries of other parties involved;

• conducting general discussions about information and coordination with the German Embassy at the beginning of the investigations.

Project executing organisation:

• Clarifying core problems and aims, as well as priorities and persons in charge, as far as possible, in agreement with the project executing organisation;

• evaluating administration, potential performance capability of the project executing organisation, and other relevant government authorities concerned (building and planning authorities).

Participation and participants:

• Including the affected population in the investigations is desirable, but problematic. It makes sense when the people affected are represented by persons recognized and also accepted by the project executing organisation. Should this not be the case, the rapid assessment will have to be done without the inclusion of the victims. This will have to be made up for, if possible, at a later date, for example when planning and stipulating the standards of the building measures. It is not only the refugees and disaster victims that are affected, but also the local population, which is, for example, represented by a mayor.

• Investigating self–help potential, skills, initiatives of the affected population, the refugees, and the disaster victims.

Procedures and security:

• Assessing security risks (physical, economical, commercial) and clarifying logistic issues (transport possibilities);

• verifying possible cooperation opportunities with national military or foreign peace–keeping forces (formation of convoys for personal and material transports, escort, transport of relief supply, material transports);

• assessing general military presence.

4.3 Analysis of the local building industry

The investigations on location concerning building issues are conducted from the point of view of a non–commercial general contractor (NGC) or implementing consultant. The cooperation with the local building industry plays a decisive role. Should this fail to succeed, the aid measures will run the risk of being planned and carried out without sufficient adaptation to local possibilities and requirements and will thus be treated as third–party interests and alien, and persist as such. The costs will definitely rise with imported know–how, i.e. the recipient country will benefit less from the aid. The identification of appropriate companies to implement the measures on behalf of the NGC is of vital importance. The following investigation steps are recommended:

Information on the building sector in the partner country:

• Gaining access to professional chambers or associations of architects and engineers (if existing) via the project executing organisation, in order to obtain information (directories of members, addresses) and references to local partners;

• conducting the same queries at the ministry of construction or the local building authorities;

• enquiring at the ministry of construction about lists of local construction companies, if possible, itemised according to qualification and sub−divided into categories.

Assessment of local construction companies and planners:

• Compiling “short−lists” based on aforementioned information sources (chambers, associations, ministry of construction) for first interviews and with a view to future planning and construction tenders;

• conducting as many interviews as possible with the companies’ executive management to get an overview about its qualification and about the local building situation in the country;

• questioning the architects/engineers about the construction companies and vice versa, the construction companies about the architects/engineers;

• enquiring about references of architects’ and engineers’ offices and, if there is enough time, looking at projects and/or questioning former clients;

• conducting interviews with planners and construction companies in the companies’ offices, on the companies’ premises, if the time permits, in order to get an impression of the equipment and the “vitality” of the company.

Ensuring an appropriate procedure:

• Conducting similar enquiries with planners, building authorities, ministry of construction, and construction companies about the level of construction costs (price per m^2, price per m^3 for normal housing construction) and comparing them carefully;

• discussing the envisaged application of sample building contracts, in order to be able to analyse the general, and especially the international experience of the planners and construction companies in dealing with contracts;

• discussing the country’s common fee and remuneration practices with planners;

• questioning planners and construction companies on liability and guarantee issues;

• questioning planners and construction companies about the wage situation of architects and engineers, work potentials, material and production sources, and especially the bottlenecks;

• soliciting, if necessary in advance, relatively non−binding offers or partial offers for certain standard services for further consideration.

Logistics:

• Enquiring at construction companies and the ministry of construction about the transport situation in the country, i.e. capacities, transport costs per ton, costs per km, etc., prices for petrol and diesel fuel, situation of construction material and fuel supplies in general, and comparing the information with one another;

• enquiring at companies, project executing organisations and the ministry of construction about import procedures, import problems and time requirements; in doing so, questioning the situation of duty exemption for goods to be imported within the framework of aid measures (e.g. pre−fabricated houses, installation material);

• discussing the situation of the banks and questions concerning money transfer directly with the project executing organisations, companies, and banks.

4.4 Questions on infrastructure (land use planning and connections, energy, water supply)

Land use planning and connections: (see also sections 5.1.5.3 (1) and (2))

- Suitability of land in respect of reduction of vulnerability to disasters (see section 4.5)?
- Have surveys of land (cadastral maps) been carried out or who is in charge of them?
- Distance of site (for settlements) from borders, from war zones (recommended distance: minimum 50 km)?
- Road connections and public transportation?
- Connections to public institutions (schools, health care facilities, community facilities)?
- Which regional plans have to be considered?
- How can the maintenance of buildings and infrastructure be organised?
- Has storm water drainage been considered?
- Waste disposal – who carries the costs?

Energy supply: (see also section 5.1.5.3 (3))

- Which fuels are usually used in the country (gas, coal, electricity, wood)? What costs?
- What are the fuels used for (heating, cooking, lighting)?
- Availability (imported)?
- Site development costs, energy supply (distance)?
- Who takes care of the supply (project executing organisation, partial cost sharing)?
- What are the prevailing cooking practices?
- Size of household per kitchen stove? Kitchen stove with how many hot plates?
- How will the new dwellings be heated (fuel, types of heaters)?
- Potentials of existing energy supply companies?
- What is the environmental impact of resource usage (especially for local energy sources, such as wood and charcoal, as well as building timber or building materials)?
- Is it necessary to rehabilitate or expand the energy supply company, for instance, in order to supply a new settlement?

Water supply: (see also section 5.1.5.3. (2))

- Demand for drinking water, domestic water (differentiation is often unknown); the amount is more important than the quality of the water (e.g. 40 litres in Eastern Europe per day per person, or 25 litres in Africa per day per person, incl. herds of small domestic animals)?
- Quality of water, is filtering equipment required?
- Water storage (underground reservoirs, cisterns, overhead tanks)?

• Supply by tanker during the start−up phase? Who carries the costs?

• Cost per m^3 of drinking water (provided it can be determined)?

4.5 Target group, risk of conflicts and disaster risk management

Target group and risk of conflicts:

• Rough assessment of the socio−economic structure of the region's population as a whole and in relation to those in need of shelter;

• differentiation of those in need of shelter according to socio−economic criteria and, if necessary, collaboration in the formulation of criteria for the eligibility for acquiring dwelling space or promotion;

• review of the advantages and disadvantages arising for the resident population by the building of new settlements;

• assessment of what kind of cooperation and conflict potentials exist between the resident population or total population having dwelling space and the target group to be provided with shelter, in connection with the building measures;

• homogeneity of the target group to be provided with dwelling space (groups, structure of households, organisation, also regarding vulnerability to disasters);

• assessing the capacities of the target group and taking into consideration when planning; verifying collaboration

  – during planning (organisation and representation),

  – during realisation (finances, technical know−how, working performances),

  – compatibility of participation through work inputs, which generally help to secure the people's existence.

Disaster risk management:

• Inquiring or drafting disaster risk assessment for the land to be built on or which is to be rebuilt; assessing the risk of hazards in cooperation with the population and national institutions (risk of flooding, landslides, lava stream, other exposures);

• inquiring which possibilities exist within the conception of building measures to reduce the risk of disasters:

  – disaster−resistant construction for new buildings, repair works, and reconstructions,

  – cost benefit considerations,

  – applicability of the conception beyond the building measure,

  – discussing possible use of early warning systems for earthquakes, floods, volcanic eruptions (e.g. with flood early warning system for the efficient operation of disaster protection measures),

  – disaster precaution (e.g. education and training of local organisations, reserve supplies of sufficient disaster−resistant infrastructure, such as emergency shelter for future use).

4.6 Interim result on location

In the course of the assessments on location and after consulting the project executing organisation the NGC's appraiser forms his first ideas on how the envisaged project concept is to be realised. Here, any one of the implementation models described in section 5.1 to 5.3 or appropriate combinations of these can be applied. Not later than at this point the appraiser should contact the people responsible in his home office and discuss the latest developments, the proposed project concept, and further procedures. The home office might have to consult the donor/financing agency.

Subsequently, the appraiser should agree with the project executing organisation on the probable conception and convey the results of the agreements with the financing agency and home office. The results should be recorded as minutes of meeting or notes of discussion, provided that no other procedure was agreed upon with the donor/financing agency. At this point the German Embassy should be consulted with regard to a possible involvement.

Provided there is enough time, a draft offer or part of it should already be written on location during the mission.

4.7 Analysis of the German and international building sectors with regard to emergency shelter

A large number of planners and project developers worldwide are dealing with the planning and conception of emergency shelters. This is taking place within the field of research and education with students at universities, in private architectural firms, or in medium–scale enterprises, where these concepts are manifested in prototypes and model houses. In some cases, these ideas are developed in cooperation with large companies wanting to sell material (e.g. insulated profiled metal sheets) or with manufacturers of prefabricated houses. Well–engineered model shelters for emergency situations hardly exist. This is understandable as developments cost money, the market is unclear, and opportunities for new commissions only occur coincidentally. But there are programmes for the construction of simple buildings for the leisure market (garden houses, log cabins), which are in permanent demand by customers. Manufacturers of prefabricated houses react to inquiries if projects and secure financing are assured. Then, they generally mobilise their subcontractors, for example in Scandinavian countries, companies in the USA, in Eastern Europe, or in low–wage countries, and launch offers. The implementation proposals then follow the NGC's instructions (see section 5.1.5.3 (4)), or they offer their own, relatively simple and adapted products.

Bringing in the German or international building industry is a viable option only if a large number of prefabricated emergency shelters is to be erected. In all other cases of building and rehabilitation measures involving conventional construction, German or international building companies hardly stand a chance on location, due to the costs involved.

In the case of prefabricated buildings, the NGC should insist on turnkey erection on site, including foundation. It is not of much use if the manufacturer is only in the position to supply ex–works or free on construction site and leaves the interface coordination and completion of the service to the NGC. The NGC will then inevitably be confronted with problems. An interface on the foundation's upper edge is basically possible, if the manufacturer of the prefabricated houses is assigned the responsibility for the approval of the foundations erected by a third party. A supply always has to include the assembly of the buildings on site.

As a result of his business experience and connections, the NGC either already disposes of an index of potential manufacturers of prefabricated buildings or he can request the associations of manufacturers of prefabricated houses (also to be found in the Internet) to provide him with a directory of members and further information. Fundamental selection criteria for manufacturers of prefabricated houses are, among others:

- The product proposal is adequate and the offer is complete (including sanitary facilities, heaters, furnishing, etc.);
- proven expert know–how in previous comparable projects (references) exists;
- existing production capacities are sufficient and thus anticipated delivery time can be met;

- turnkey supply is possible;
- international experience in transport, supply, and assembly is evident;
- qualified personnel is available;
- commercial creditworthiness seems to be given, but has to be verified.

Aforementioned technical and commercial selection criteria are to be seen in relation to the price. The relation has to be weighed up and determined according to the situation. A good product that is reasonably priced, but cannot be delivered in the required time, is less likely to be of use to solve the emergency situation on location (see case study B – Azerbaijan).

Case study **B**

Construction of 16 refugee settlements as emergency aid measure in Azerbaijan

Financing agency: **ECHO (European Community Humanitarian Office)**

Financing volume: **16,600,000 euros**

Period: **1993–1996**

After the breaking up of the Soviet Union, hostilities between the now independent states of Azerbaijan and Armenia escalated and reached their peak with the Armenian army's occupation of Nagorny–Karbakh, a region in Azerbaijan mainly inhabited by Armenians. Approximately 1.4 million people, mainly Azeries, as Azerbaijan's citizens are called, fled into the hinterland of Azerbaijan.

A large number of displaced persons had no shelter or food and the new state Azerbaijan was not able to solve the pending problems. ECHO decided on rapid aid and assigned GTZ with the building of simple housing settlements in different regions.

From 1993 until 1996, GTZ built a total of 16 housing settlements with 3,280 houses and 6,560 rooms for approximately 36,000 persons in 4 different building phases. The average construction costs per accommodated person amounted to 558 euros, including all incidental expenses and GTZ overheads, a relatively low price, considering the circumstances and regarding the efficient and appropriate solution reached.

The project implementation of the first building phase, executed in 1993, took place in cooperation with the German Federal Agency for Technical Relief (THW), which established the technical infrastructure (roads with gravel surface, water supply, and street lighting) for the first two settlements. GTZ was responsible for the turnkey erection of all the houses during all 4 building phases. For the building phases 2 to 4 during the years 1994–96, the technical infrastructure was also established by GTZ.

The housing units were simple constructions made of insulated, prefabricated lightweight building elements that could be assembled manually. The housing units were equipped with one lighting connection each and very simple basic furniture. After tendering, the prefabricated buildings were imported from Finland and Turkey. Ventilated pit latrines were built on site and assigned to each housing unit. Centrally located washing and shower houses in conventional construction satisfied the minimum hygienic needs.

The identification phases of the individual locations of the settlements with regard to technical and socio−ecological criteria, took place parallel to the planning and tendering activities and each lasted about 1 month. The building of the technical infrastructure, as well as supply and erecting of the prefabricated houses was achieved with greatest effort in approx. 4 months. Due to the very flexible methodology, it was possible to hand over each of the housing settlements before the onset of winter.

Parallel to the construction work and during the whole construction period, the so−called integration phases with instructions and directions on self−help initiatives, taking−over of personal responsibility, development of the community, and creation of jobs were realised in cooperation with an Azerbaijani NGO.

In building the housing units, the refugees were provided with a first solid nucleus to spend the winter in, with the possibility of an individual expansion through personal contributions later on.

Extreme efforts towards the integration and sustainable development are yet to be made.

5. Project planning and management during implementation

In the course of the rapid assessment the envisaged concept, expected to be suggested, generally becomes apparent to the team of appraisers. This means that concept−specific investigations for the beginning of the planning and first considerations about the implementation of this concept should already be carried out parallel to the rapid assessment.

In this chapter, “contractor models”, “self−help models” and the “building yard model” and their contents and procedures will be presented by examples. Modifications, variations, and combinations are possible. In contrast to the contractor models, where the construction works are carried out by the private industry, in self−help models a considerable part of the construction works is implemented by the future beneficiaries themselves. In this case, support is mostly given through building material supplies and expert advice in construction. Here, the target group is involved more intensively in the planning and implementation of building works, while building contractors are awarded contracts at the most for partial works. Independent of that, in both models a participation of all people concerned (direct target group, population in the target region, administration and authorities) takes place in the planning. All these direct or indirect participants contribute personal inputs in favour of the project’s overall success.

The decision on whether a contractor model or a self−help model is to be applied depends basically on the following aspects:

- Building method in the target region and technical complexity of the building project,
- capacities of the parties involved (technical, economical, organisational),
- conceptions of the time frame for achieving the objectives.

In societies marked by the division of labour, contractor models are the prevailing model of implementation of building measures. Technical advice can be given to the construction industry, e.g. concerning the improvement of building techniques with regard to disaster precautions. Even if contractor models include an external financing of the measure by the donor, sector authorities and administrations provide their own inputs.

If living space is generally provided by self−construction in the region and the basic technique is widely known to the target group, the target group should be included in the construction works within the framework of self−help models, according to their technical know−how. It has to be taken into consideration that the scope of the building works on houses requires a long−term commitment of the workforce, which is not always

possible (see 5.2. Self–help models).

5.1 Contractor models

Provided that the expert analysis of construction and the rapid assessment come to the conclusion that, due to great destructions of buildings and technical infrastructure and due to an acute lack of accommodation possibilities for many thousands of disaster victims or refugees, building measures need to be implemented in the shortest possible time – maybe before the onset of winter – implementation according to the “contractor models”, as described in detail below, is the appropriate option. This entails a consistent cooperation with the local building industry, in exceptions even with the international building industry. It is not acceptable that in large aid projects the agency responsible for the implementation of the project (NGC) plans the project on its own, recruits personnel, purchases material, and more or less plays the role of the building contractor. It is a fallacy to believe that by doing so expenses are cut down on (by saving contractors’ profits, purchasing material at lower rates, and the like), not to forget lacking guarantees and liabilities. Consequently the advice is: consistent cooperation with planners, building companies and suppliers, after their selection on the basis of competitions.

5.1.1 Local and international building industry

For various reasons, media reports on disasters, streams of refugees, and destructions are often exaggerated. Occasionally, international companies gain the impression that almost everything is destroyed and the affected countries are technically not able to solve the problems on their own. Frequently the opposite is the case, except, for instance, when power stations, dams and other plants with special technologies are damaged. Most of the damages, or at least a considerable proportion, can be repaired by the local building industry. Their participation fosters an economic development of the country from the beginning and creates jobs.

Albeit companies only exist fragmentarily in the host country, the required manpower and professional know–how are still there; they normally reorganise themselves quickly and do an acceptable job. The professional qualification of the potential local planning and building partners’ executives is decisive. In order to discover these qualifications, detailed interviews have to be held before deciding on a shortlist and awarding of contract. In most cases, and if necessary, with the help of consultations, these companies ought to be considered for the implementation of services or at least for parts of it. The questionnaire (Questionnaire for Architects/Engineers and Contractors), included under item 9.1, can be used as a basis for interviews and making decisions.

Services, which the local building contractor cannot provide, should be covered by appointed sub–contractors (if necessary, international ones) or other independent contractors. Here, a coordination of the interfaces by the NGC is required.

5.1.2 Project controller, implementing consultant, local architects

The NGC, defined in section 1 (Summary) as the responsible agency for the implementation, owes the donor/financing agency the offered service as a whole. In this capacity it has to take the part of the project controller. It is best if the service of project control can be implemented with its own technical and commercial personnel, having experience in development cooperation and being able to make quick decisions. This reduces interactions with other parties, expenses and duration of the project.

Should the NGC not be able to provide these services, they can be subcontracted to a so–called implementation consultant from the German or international market. In case of delegation to an implementation consultant, the NGC still requires at least one expert (a building generalist) within the agency, in order to give instructions to the implementation consultant, to control him/her and to influence or take the necessary decisions. Rough sample TOR for engaging a project controller are outlined in section 5.1.3. Depending on the country in which the services are to be rendered, the implementation consultant may also be found on location.

At any rate, architects and engineers on location should be appointed as partners and subcontractors to carry out the planning and site supervision. They know best about the professional means and building permission procedures, the sources of material supply, the labour resources, and the industrial resources in general. They are familiar with the area and still remain on location after the completion of the NGC's or the project executing agency's measures and can, for example, follow up warranty claims on behalf of the NGC or the project executing agency.

5.1.3 Terms of Reference (TOR) for project control

5.1.3.1 NGC as project controller

Should the NGC dispose of experts within the home office staff and possibly also field staff, the following services should be provided to ensure efficient project organisation and implementation:

(1) Recruiting of personnel, or provision of:

- Project manager (seconded to project location);
- architect(s), construction experts (seconded to project location);
- 1 (building) economist (seconded to project location);
- backstopping – management = project leader (at the home office);
- backstopping – construction expert (at the home office);
- backstopping – contract expert (at the home office);
- backstopping – economist (at the home office).

(2) Project organisation and mobilisation on location

- Renting office space;

- employing local personnel (after interviewing) as: office assistant, interpreter, chauffeur, possibly other professionals;

- equipping offices; computer to be procured on location, if possible, for service and guarantee reasons, otherwise imported;

- installing telephone, fax, possibly e–mail and internet access; possibly satellite telephone;

- importing vehicles; alternatively buying on location or leasing them, after comparing prices;

- opening an account with a bank, if possible, for financial transfer and payment of invoices on location (short periods for payment);

(3) Project activities

Planning and preparation:

- Determining possible planning and implementation concepts with the project executing organisation (see also section 5.1.5);

- concluding necessary project agreement(s) with the project executing organisation(s);

- appointing local free–lance architects/engineers as subcontractors, after interviewing them and inspecting the architects' offices (possibly upon recommendation of the local Chamber of Architects or Engineers, if existing, or of the building authorities, or according to one's own knowledge and research).

Tender and contracts:

- Tender and conclusion of contracts with architects after consultation with the project management at the home office of the NGC (at GTZ, also with the contracts department), directly between NGC and architects;

- pre–qualification and shortlist of potential construction companies (with explanatory statement); verification of construction companies with a view to their qualification as general contractor;

- implementation of the construction tender and analysis; communicating proposal for award of contract (with explanatory statement) to the project leader at the NGC's home office (at GTZ, also to the contracts department for approval);

- direct conclusion of contract between NGC and general contractor for constructions.

Monitoring and controlling:

- Steering the planning of the construction works, carried out by the local architect;

- overall supervision of building progress;

- verification of the plausibility of the contractor's running invoices and the final invoice(s), which have been checked by the local architects;

- remittance of payments, after deducting contractually agreed retention money;

- controlling of project accounts, i.e. administration and financial management;

- dealing with and monitoring agreements with local contractors and local staff (contract procedures, payment etc.);

- acceptance, verification, and confirmation of bank guaranties (the reliability of the bank also has to be checked; it should be connected to the SWIFT transfer system);

- effecting all bank and cash transactions;

- management of overhead and administration costs;

- disbursement of financial resources (salaries of local staff?);

- bank transactions;

- accounts management;

- insurance coverage of the measures (transport, building etc.);

- budget planning (building costs) und monitoring;

- compiling regular financial and expenditure reports;

- invoicing of all measures;

- final commercial invoicing of the project and transmitting it to the NGC's project management.

Inspection/project termination:

- Inspection of the construction works by the NGC or delegation of the task to local architects;

• if necessary, handing over of planning and contract documents to the project executing organisation for the following up of warranty claims. Note: This procedure has to be agreed upon in the building contract;

• drawing up the final project report and possibly a photo documentation according to the instructions of the NGC's project management.

5.1.3.2 Implementation consultant as project controller

In case the NGC does not dispose of the required expert personnel to implement the project control, it can appoint a so–called implementation consultant to take over this task. The latter can originate from the following professional groups: architects, civil engineers, project controllers or infrastructural planners. Essential selection criteria are:

• Experience in project control and management;

• international experience;

• experience in contract procedures in the building sector;

• experience in cooperating with local sub–planners, site supervisors, and construction companies;

• experience in international development cooperation;

• sufficient personnel capacities for secondment to the project (possibly with substitute staff) and for technical and commercial backstopping.

In general the NGC has to look for an implementation consultant via a so–called consulting tender. The TOR for this tender can be derived from the services listed above, under section 5.1.3.1. Such a tender is time–consuming, which is a considerable disadvantage in view of the required immediate action in the disaster region. Direct appointment of consultants is generally possible with large commission volumes, however they require a clear rationale. Depending on the commission volume, it has to be verified whether it is also necessary to observe EU guidelines for the awarding of contracts, which would additionally prolong the procedure.

The description of services of the implementation consultant is almost identical to the services mentioned under the above section 5.1.3.1, for the case of the NGC taking over the project control. However, the terms of cooperation with the local architectural and engineering firms may differ. In any case, the implementation consultant will raise extra charges on the local firms' services, since he assumes responsibility for their services vis–a–vis the NGC.

5.1.4 Contracts and awarding procedures

Contract drafting procedure

Procuring of company information, company visits, interviews (QUARENG)

Initial meeting to draft shortlist and tender documents

Dispatch of tender documents (e.g. INVTD150 or INVTDFID)

Drafting of tenders by construction companies (e.g. TENDRFID)

Possibly public opening of tender

(see “Minutes of opening tender” – MOPTENDR)

Tender analysis

(calculation and technical appraisal by the architect)

Proposal for awarding of contract, and documentation

Decision on awarding of contract

Contract negotiation,

if necessary, corrections of bill of quantities (BoQ)

and completion of contract and planning documents

Mobilisation/preparation and commencement of project

Even if time pressure is high in crisis situations, the required procedures (however, with considerably shorter deadlines) hardly differ from those under normal conditions. Therefore, wherever possible and reasonable, awards should be effected on the basis of tenders. Controls and the transparent use of funds, as well as suitability for appraisal through respective auditing authorities, are too important to dispense with tenders.

In general, it is unqualified to reason that, due to the urgency of emergency aid building measures, contracts should be awarded directly. In all cases, specifications and bills of quantities will have to be drawn up before the awarding procedure. Without these, commissions have no basis and cannot be placed. The additional work or delay in time is only incurred due to the search for alternative tenderers and the need to analyse several tenders instead of just one. This takes up little extra time. However, obvious advantages lie in the proven economic efficiency and security to have engaged the most favourably priced (not necessarily the cheapest) tenderer. Negotiations can be conducted more efficiently if alternative offers exist.

The following sample documents of GTZ in connection with tenders and awards are included in the annex of these Guidelines:

9.1 Questionnaire for Architects/Engineers and Contractors (QUARCENG)

9.2 Bidding Conditions for Consultants, Architects (BIARCENG)

9.3 Contract for Architectural Consulting Services (CONTRARC)

9.4 Form of Cost Estimate (COSTESTM) and Explanatory Report (EXPLAREP)

9.5 Form of Invitation to Tender for Construction works (recommended for contracts value up to 150.000 Euro) (INVTD150)

9.6 Form of Invitation to Tender for contract value above 150.000 Euro (INVTDFID)

9.7 Tender Conditions for Contractors (TENDRCON)

9.8 Tender Form for contracts above 150.000 Euro (TENDRFID)

9.9 Minutes of Opening of Tenders (MOPTENDR)

9.10 Contract for Construction Works on Measurement Basis (recommended for contract value up to 150.000 Euro) (CONCTRMB)

9.11 Specimen of Performance Guarantee (GARANTPF); Advance Payment Guarantee (GARANTAP); Guarantee for Defects Liability Period (GARANTDL)

9.12 Specimen of Construction Progress Report (PROGREP)

9.13 Form of Certificate of Taking−Over (TAKGOVER)

9.14 Form of Certificate of Handing−Over (HNDGOVER)

9.15 FIDIC−Part I, Conditions of Contract for Works of Civil Engineering Construction (recommended for contract value above 150.000 Euro) (FIDIC−P1) Website Information.

9.16 FIDIC−Part II, Conditions of Particular Application (as an example), drafted by the GTZ (FIDIC−P2), to be adapted to the specific project conditions;

The annexes mentioned above are also available in French and partly in Spanish in the building section of GTZ and the GTZ contract department. The sample documents are drafts based on special requirements, conditions and conceptions of GTZ. With every new project they have to be verified with regard to their suitability, negotiated accordingly and adapted.

Large building contracts (commission volume exceeding 150, 000 Euro) should not be concluded without the support of a contract expert.

For all GTZ projects exceeding this volume the GTZ contract department has to be involved, as stipulated in the GTZ (internal) Orientations and Rules (O + R).

The contract forms mentioned above are based on common international forms and have been successfully applied by the legal and contract departments as well as the building section of GTZ for many years. It may seem that some of the documents are too detailed and thus inappropriate for application in developing countries. However, practical experience has shown, that contractors have so far not objected to the application of these updated contracts, and lawyers of the local companies have appreciated and accepted them due to their balanced content. International donors, the EU, and KfW, also insist on the application of FIDIC contract forms. They constitute internationally recognized contract conditions and guidelines for the implementation of building measures worldwide. They are published by the “Fédération Internationale des Ingénieurs−Conseils (FIDIC)” in two parts. Part 1 includes the general conditions, while part 2 refers to project−specific guidelines and thus has to be adapted to the special conditions of the respective project. Further information as well as order forms can be found on the Internet under “www.fidic.net”.

The application of the German fee scale for architects and civil engineers (HOAI), even with adaptations, is unsuitable. It is specific to Germany, too complicated, inappropriate for developing and emerging countries, and also unknown to them. Regarding building tenders, the same applies to the application of or reference to the German contract procedures for building works (VOB), when specifying construction works. The VOB is tailored to the German construction market, to high standards and agreements with German companies, and thus unsuitable − even more so for emergency measures. The remuneration as a percentage of the production costs is a possible and widespread way of paying for the services of architects and civil engineers. Depending on the job description, the rates can vary from 5 to 12%. The architects’ and engineers’ services

have to be precisely defined before contracting them. The sample contract “Contract for Architectural Consulting Services” (CONTRARC, item 9.3), can be applied. It has to be adapted accordingly. Architects should only be contracted after having obtained several tenders and having conducted negotiations. In the case of easily comprehensible planning tasks, an effort should be made, together with the architects and engineers, instead of remuneration as a percentage of the production costs, to agree on a lump sum (fixed price), which can only be changed in the case of substantial variation of services.

As far as possible, construction works should be awarded to general contractors on location, in order to minimise interactions across borders. Separate tenders for different categories of construction work, as are common in Germany, should be avoided; otherwise all coordination services are left to the project controller.

Building contracts should be agreed on as measurement contracts, and not as lump sum contracts, because unforeseen events are common with emergency and reconstruction measures and a measurement contract reflects the situation, fair to both sides, as payment is effected according to the actual services delivered (exact number of pieces, quantities, sizes, etc.).

After completion of the building measures, warranty claims towards the NGC’s planners and construction companies are passed on to the project executing organisation, as the NGC usually retreats from the region while the warranty period persists. This has to be agreed in the contract.

5.1.5 Planning and implementation concepts

It is assumed that the intended implementation concept had already been determined roughly during the rapid assessment, in cooperation with the project executing organisation. It was included in the offer to the financing agency and forms the basis of its commission. Three possible concepts are presented as examples, which can be applied in combination and thus provide the project executing organisation with some degree of flexibility.

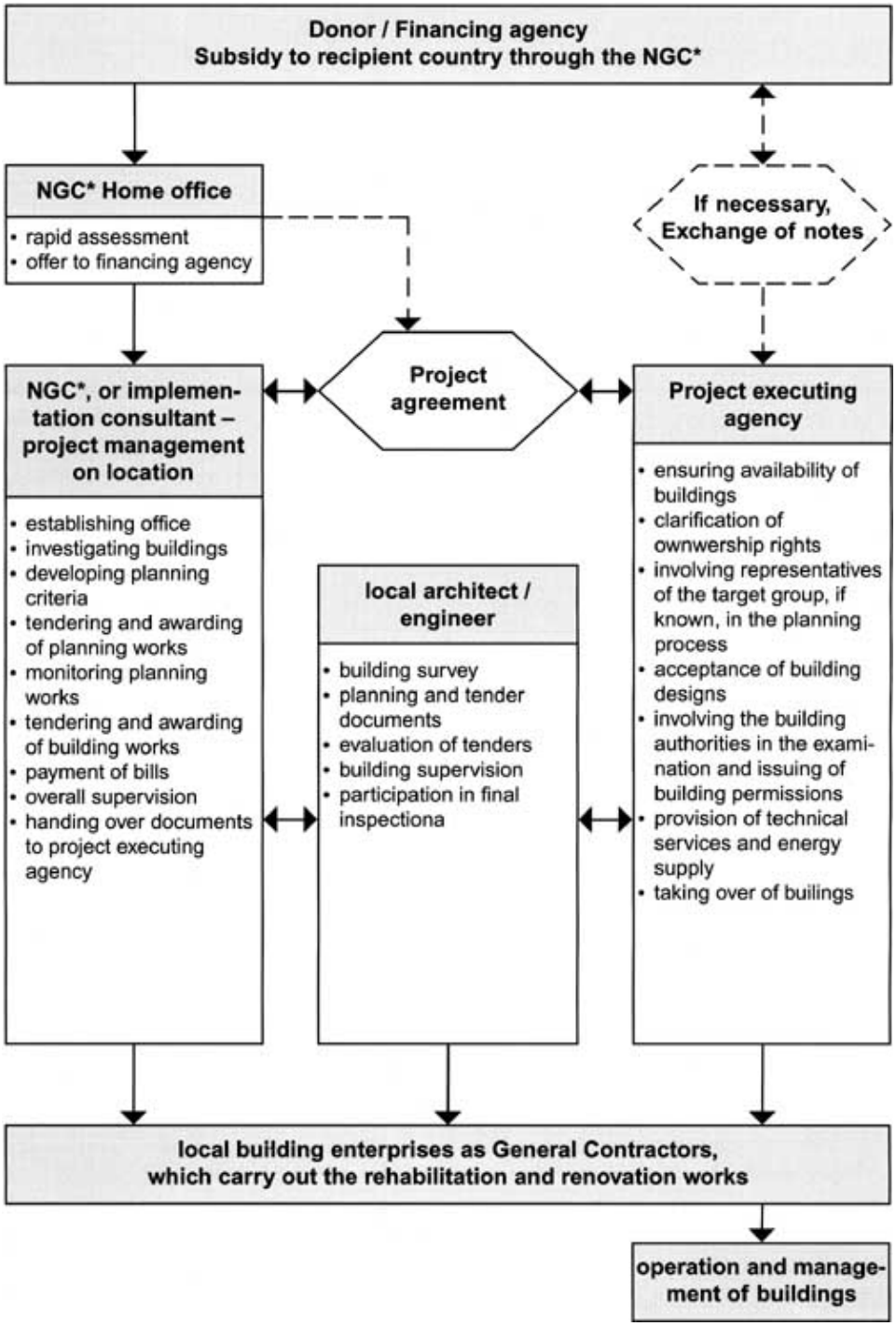
5.1.5.1 Rehabilitation and rededication of public buildings

Unused and vacant public buildings are often suitable for the short−term accommodation of disaster victims and refugees, after being rehabilitated or reconstructed accordingly and equipped with adequate toilets, washing places and heating facilities. These can be former military barracks, administration buildings or similar buildings. In general, the local authorities quickly have a good overview of the situation. It should, however, be made sure that such buildings are located sufficiently close to neighbouring settlements (social contacts) and are not exposed to environmental pollution. The advantage of public buildings lies in the fact that the question of ownership and thus the right of use is generally clear, the buildings usually are or were connected to technical infrastructure (water, sewage, electricity) and thus dwelling space can be provided very quickly, sometimes with little effort. In the early stages of planning, together with the project executing organisation, thoughts should be given to possible future usage, which should be reflected in the floor plans, provided that they are justified and the extra costs are not too high. The buildings can possibly be used later as administration buildings, schools, kindergartens, small trade, tenements and the like. This kind of accommodation is preferred due to its higher sustainability and the distribution of benefit to everyone.

At the beginning of the planning phase, it has to be verified whether building permits are required.

In the case of several large buildings requiring a considerable planning volume, it is advantageous to commission two local planning offices. This reduces planning time and creates a certain competitive situation.

5.1.5.1 Rehabilitation and rededication of public buildings



* NGC = non–commercial general contractor

5.1.5.2 Rehabilitation of houses destroyed by war

(1) Private houses

This form of project can make sense if large masses of refugees/returnees or displaced persons are in the country, who want to return home or have to be repatriated and accommodated since they are not able – for whatever reasons – to return to their original houses and region. In pacified regions, partly destroyed private buildings can be repaired or rehabilitated with assistance funds by contractors, on the condition that the owner of the house in return offers shelter in his house to a number of refugees free of charge for a certain period of time (about 2–3 years). This has to be stipulated in a written agreement between the owner of the house and the local administration or refugee office. Such a concept guarantees reliable and rapid repair of numerous

buildings. It supports the local population's existing readiness to help and is of benefit for numerous groups.

During a first inspection, the degree of destruction and thus the eligibility for promotion in relation to the opportunities of sheltering refugees/displaced persons are verified. After determining the buildings eligible for promotion, the damages are assessed, the required services identified, and the quantities calculated by local architects, according to the NGC's specifications and on the basis of forms specifically created for this purpose. This simple form of assessment is possible, as damages of individual buildings are generally similar. In this way, technical specifications are produced, which, together with diverse contract documents listed in section 5.1.4, constitute the tender documents.

The restoration of houses should be simple and only deal with the most essential works: all structurally indispensable works, the roof, bathroom, WC, windows (made of insulating glass, if possible, on location), staircases, simple doors, and interior plaster. It is left to the owner of the house to contribute to standard improvements at his own expense.

Calculations of space required per refugee should be fixed at a minimum of 4.5 m^2 and should only apply to dwelling space. Sanitary rooms and circulation space are additional. The subsidy increases proportionately to the number of refugees that can be accommodated in the house.

The rooms of the refugees or displaced persons should be furnished simply by the NGC, the administration, or other aid organisations, with beds, 50% of them bunk beds (problem of acceptance), chairs, tables, cupboards, and each with one simple cooking facility.

The works done by the local general contractor have to be measured and approved by the local architect. The NGC conducts random inspections. A guarantee period of one year should be agreed on.

Case study **C**

Provision of winterised shelter for displaced people and rehabilitation of schools in Tuzla Canton, Bosnia & Herzegovina

Financing agency: **Federal Republic of Germany, represented by BMZ**

Financing volume: **6,698,000 euros**

Period: **1995–1997**

Even before the signing of the Dayton Peace Agreement, BMZ decided at short notice to contribute to the accommodation of refugees and displaced people in Central Bosnia and charged GTZ, amongst others, with the implementation. In the Tuzla Canton alone, about 240,000 displaced people and refugees were given shelter in addition to the approximately 700,000 inhabitants. The attack on the enclaves Srebrenica and Zepa in the late summer of 1995 resulted within a few days in a streaming into the Tuzla Canton of an additional 35,000 displaced people, especially women, children and old people, who could only be temporarily accommodated for the moment, partly under inhumane conditions in tents and mass accommodations.

In order to achieve better results quickly, GTZ realised several implementation models simultaneously, each in close cooperation with NGOs, which were already active on location, and the partly intact local building authorities of the affected townships:

1. Private houses were repaired or extended and simply furnished under the condition that the owners committed themselves to take in refugees for the period of, for example, 3 years.

2. Shared building components, such as the roof, staircase, windows, outside doors, chimneys for heating stoves (but

not central heating), and water supply, were repaired in partly destroyed municipal apartment houses, while the returnees did the repair work inside their apartments on their own.

3. Community−owned buildings no longer in use were either extended to become well−equipped community shelters or small simple apartments.

4. A settlement with new four−family houses already under construction was enlarged by 15 houses (60 apartments).

Economic efficiency of the measures was achieved once the stipulated area of approx. 8 m^2/person was attained. Buildings and apartments were provided with minimum furnishing (beds, wardrobes, tables, chairs, hot plates).

After rehabilitation and basically equipping partly destroyed village schools, they were handed over to the school authorities for resumption of classes. On the other hand, large school buildings or public buildings in Tuzla, which had temporarily served as mass accommodations and were vacant again, were rehabilitated and returned to their initial purpose.

Besides Tuzla (30 buildings), the measures extended to Zivinice (100 buildings), Gracanica (22), Prutace (15 new buildings), Banovici and Srebrenik (42), Kalesija and Celic (127 dwelling−houses and 148 apartments).

A total of 5,721 refugees and displaced persons were accommodated within the reconstruction and restoration measures. In applying a mixed calculation, accommodation costs of 1,171 euros per person arise, including all incidental expenses and overheads.

The programme represents a successful example of development−oriented emergency aid. The personal contributions and self−help of house owners, displaced persons, returnees, local authorities, construction companies, workers, and engineers together contributed to the success of the measures, despite the difficult conditions in winter. They provide the condition and hope for the sustainability of the results achieved.

(2) Private or public tenements/apartments

Here too, the degree of destruction of the buildings is the decisive factor of eligibility for promotion. Should this be the case, the measures should primarily concentrate on all structural measures and measures involving community facilities. These are, among others, the roof, external insulation, outer walls, all load−bearing structural parts, windows, staircases, entrance doors to the apartments, electricity, water, and sewage. External plaster and external paint should not be included, in order to avoid arousing envy amongst the less supported neighbours. Inside the apartments: a simple bathroom (shower, WC, wash basin) without tiles, tap and simple cooking facility in the kitchen, and wall plaster. It is a question of budget as to which other building components can be installed inside the apartments (floor covering, interior doors, wall paint, wall tiles). It could also be expected from the owners of the apartments or buildings themselves. The interfaces are to be fixed from case to case.

Possible beneficiaries are, for instance, former apartment owners, who have returned to the buildings, or displaced persons/refugees from outside who temporarily occupy apartments.

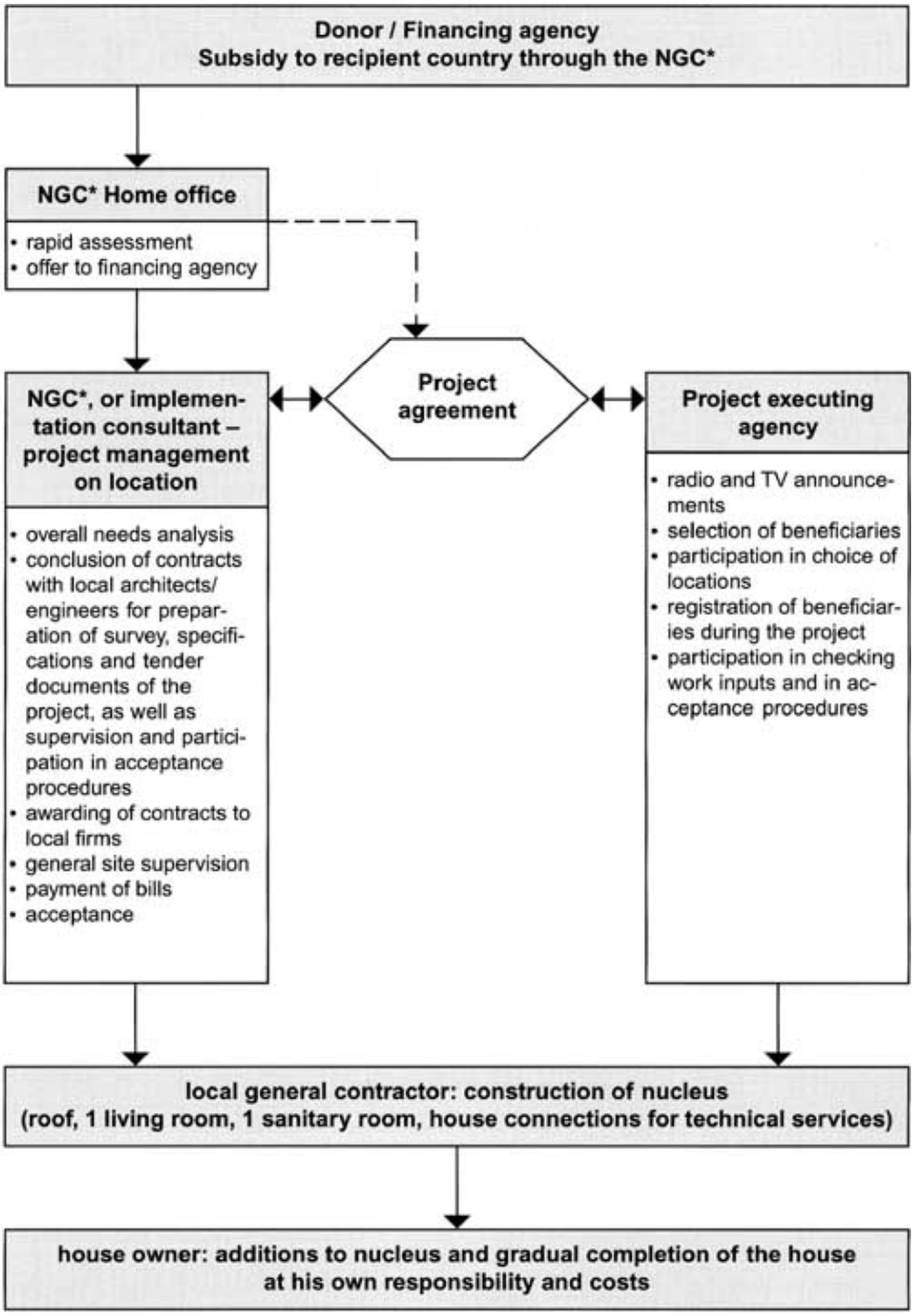
Building investigations, planning, tendering, awarding, implementation, inspection, and warranty must be treated as described under the above item (1), “Private houses”.

If the aim is to give as many local families as possible a stimulus for the reconstruction of their destroyed houses with little assistance funds, even without the obligation of accommodating refugees or displaced persons, as mentioned under section 5.1.5.2 (1), “Private Houses”, a so−called nucleus model can be realised. After assessing the eligibility for promotion (degree of destruction, neediness) through local architects, according to the NGC’s specifications, the promotion generally comprises the following: provision of basic infrastructure (water−supply point, power connection), the roof of the building, 1 living room with windows and doors, 1 wet cell with shower or tub, WC and wash basin, including door and window.

Just like in the preceding models under section 5.1.5.2 (1) and (2), the architect assesses the damages, describes the specifications, calculates the quantities and draws up a tender for the respective amount of buildings. The awarding, implementation, measurement, inspection and warranty must be carried out as described before.

No further measures will be executed on other rooms or parts of the house. It is up to the apartment owner to further complete the building at his own responsibility and with his own financial resources.

5.1.5.2(3) Nucleus model for the rehabilitation of private houses



* NGC = non–commercial general contractor

The selection of beneficiaries is carried out together with the local authorities in charge of reintegration and reconstruction. In case the number of buildings and applicants exceeds the possibilities of financial support within a region, the beneficiaries should be publicly selected by drawing lots. This procedure could also apply to other models.

(4) Rehabilitation through financial contributions

In case the project executing organisation is in the position to provide its own qualified professional resources, these are usually building or planning authorities with their experts, the rehabilitation procedure can also be effected via financial contribution. However, a detailed and critical examination of the management personnel through interviews, the office capacities, the equipment, and the general performance capability of these authorities has to be conducted by the NGC beforehand. It is true that community building authorities worldwide do not have the reputation of handling projects quickly. However, in cases of emergencies and

disasters affecting all the people in the community, i.e. friends, relatives, and themselves, the motivation to work with greater commitment can be extremely high. Samples of Financing Agreements are not included in these Guidelines. They are only meant for internal GTZ use and can be viewed at the GTZ contracts division.

Case study **D**

Restoration and reconstruction of war damaged buildings in the Fizuli Region in Azerbaijan

Financing agent: **ECHO (European Community Humanitarian Office)**

Financing volume: **2,090,000 US** $

Period: **1997–1998**

At the beginning of 1997, in the course of a joint initiative of UN and EU institutions in favour of the repatriation of refugees to former front areas between Azerbaijan and Armenia, ECHO assigned GTZ; with a trial implementation of restorations and reconstructions in cooperation with ARRA, a government organisation from Baku, which is a state–run organisation in charge of the coordination of all projects for the Azeri refugees and displaced people, as well as the executive committee of Rayon Fizuli. The measures were to serve as stimulus for further personal contributions.

The realisation was exclusively achieved by local staff (engineers, skilled and unskilled workers). Up to 200 unskilled persons were trained “on the job” in the building trade.

A total of 500 houses, divided into categories of different degrees of destruction, were repaired for 548 families, while in general only 1 to 2 rooms were provided with windows and doors, the roof was repaired or newly built, whereas the rehabilitation works beyond that were left to the inhabitants (nucleus model), Where required, hand–pumps for drinking–water were re–installed and simple toilets (ventilated pit latrines) were newly constructed.

A micro concrete roof tile production was initiated through the establishment of two new enterprises in cooperation with Parry Associates (United Kingdom) for technical advice, and KOSIA–SMEDA, one of the NGO’s supported by GTZ in Baku, for commercial management consulting. A total of 44 buildings were roofed with the new material.

The project was completed in 1998. After settling the Nagorny–Karabakh conflict, the population continued with the rehabilitation of further houses on its own.

The average costs of a building’s restoration, including all incidental expenses, costs for the production of roof tiles, and GTZ overheads, amounted to 3,814 US $ per family or 763 US $ per person to be accommodated, assuming that one family consists of 5 persons.

The handling of a financial contribution in emergency and disaster situations requires special control of all activities and measures, that are carried out by the project executing organisation and the actors, the building authorities. Temptations and possible preferential treatments (nepotism) can be especially high in crisis situations. Decisions on the selection of objects in particular, are to be taken jointly with the project executing organisation and the building authority, and confirmed in writing. Here, a representative of the NGC has to be involved. The degree of building destruction, rehabilitation costs, and future use in view of the problem to be solved (e.g. temporary accommodation of refugees, returnees) are to be brought into line economically. Planning and tender documents have to be appraised sporadically by the representative of the NGC to check their plausibility. Likewise the quantitative statements of the services provided. The awarding procedures have to be carefully checked, and, if necessary, particularly significant awarding proposals should be confirmed by

the NGC.

It must be agreed in the contract that the transfer of funds to the project executing organisation is implemented in stages, according to the progress of the building works, so that the project can be controlled via the funds. It has to be verified whether the NGC's representative should also sign the contractor's invoices to confirm them. It is true that this is not in line with the philosophy of financial contributions, which require independent action by the project executing organisation, but it can be appropriate in particular situations.

The great advantage of the model "Rehabilitation through financial contribution" lies in the fact that rehabilitation and reconstruction are almost exclusively associated with personal contributions, i.e. self–help, by the project executing organisation and its affiliated structures, thus securing jobs in the administration. The condition is, however, that efficient structures exist. In disaster situations and post–conflict regions, a financial contribution should always be granted in connection with an external controlling entity (e.g. NGC). In this model, delays have to be taken into account.

(5) Credit financing

In great emergencies and immediately after disasters and acts of war, public and private aid (donations and the like) lead to measures that are financed by grants, as gifts or financially lost subsidies. Experience has shown that in this way only a relatively low percentage of the affected is reached. After the situation has calmed down, credits by development and reconstruction banks (e.g. ADB, KfW, various funds) can be granted to private house owners for reconstruction work at very favourable conditions. These banks are prepared for such aid programmes and dispose of ready–made models. Understandably, the procedures for these models are lengthy. However, they can reach a greater number of affected persons and promote their self–initiatives. The respective authorities in the affected country (e.g. Ministry of Construction) have to contact the banks.

Case study **E**

Housing and social facilities for earthquake victims in Western Turkey

Financing agency:	**Federal Republic of Germany, represented by BMZ, Republic of Turkey, represented by the Ministry of Public Works and Housing.**	
Financing volume:	**BMZ, for shelters and social facilities:**	**11,250,000 euros,**
	for a temporary emergency hospital and med. equipment:	**767.000 euros**
	German contribution:	**12,017,000 euros**
	Republic of Turkey, for the technical infrastructure, about	**5.625.000 euros**
	Total costs	**17,642,000 euros**
Period:	**1999–2000**	

On 17 August 1999, an earthquake of magnitude 7.8 on the Richter scale, destroyed more than 1,000 mostly four–storey houses in the Marmara region in Western Turkey. The number of lives lost was officially estimated at approximately 15,000. According to the Turkish Ministry of Construction there was an urgent need to accommodate about 120,000 people in temporary, winterised shelters.

The German Federal Government, represented by BMZ, agreed to have shelters erected for approx. 9,000 earthquake victims in Alançuma, Bolu–Karaçayir and Bolu–Karayollari, and assigned GTZ with their implementation.

The Turkish contributions comprised the provision of adequate land, the preparation of the sites, as well as the construction and provision of the required technical infrastructure (drinking–water, sewage system, energy supply, and roads).

The German contributions included the supply (including foundation) and turnkey erection of temporary dwellings, including a sanitary unit, small kitchenette, electric heater, and basic furniture. Tenders for the

building works were launched on the Turkish market and a Turkish construction company was commissioned with the supply and furnishing of the prefabricated houses. Supported by the GTZ office in Ankara, GTZ coordinated, controlled, and monitored the works.

After a second severe earthquake on 12 November 1999, in the Düzce/Bolu/Kaynasli region, BMZ provided GTZ with a further 767,000 euros as additional commission for the building of a temporary emergency hospital in Düzce and for the supply of mobile medical equipment. Already at the beginning of 2000, still during winter, people moved into the first shelters. On 7 April 2000 the Turkish President Süleyman Demirel and the German Federal President Johannes Rau, officially inaugurated the Bolu–Karayollari settlement. In total, 1,608 housing units for more than 9,000 earthquake victims, and in addition 2 schools (8 classes), 2 kindergartens, 3 women's centres, 3 social centres, 3 health stations, 3 administration buildings, 2 youth centres, and 3 assembly buildings, had been erected by GTZ.

The costs of the German and estimated Turkish contributions amounted to approx. 1,875 euros per earthquake victim, including all incidental expenses and GTZ overheads.

5.1.5.3 Construction of new housing settlements

When streams of refugees with many thousand people cross the borders to the neighbouring countries without having sufficient accommodations there, the building of temporary housing settlements is often immediately considered an option, sometimes without the decision making bodies being clearly aware of the conditions and consequences.

For the building of new housing settlements, immense efforts are required and the highest expenses arise in relation to all other comparable emergency shelters per accommodated person. The building of settlements is extremely time–consuming and commits the local authorities to operate and carry the costs of these settlements for a long time. A permanent utilisation is to be expected as, for the most part, permanent settlements develop out of the temporary settlements due to housing shortage. That is the rule.

In case the decisions still lead to housing development, the following has to be pointed out:

(1) Choice of location (see also section 4.4)

Most important is the choice of location. It is to be pushed with all available means from the beginning, since the procedure is relatively time–consuming due to the numerous criteria to be considered (property rights, land use plans, exposure to hazards, infrastructure, costs, and many more). The project executing organisation, or authorities contracted by it, have to submit proposals for alternative sites. The NGC's representative has to verify these. For social reasons the site should be reachable on foot at an acceptable distance from an existing village or town (school attendance, shopping, medical care, authorities).

For greater distances, the local authorities have to establish bus connections. The locations are not to be exposed to pollution.

In case, for example, the location is incorrect, or the chosen standard was too low, or errors were made in the planning concept (social, religious customs were not taken into account), settlements may not be accepted by the original target group. This risk underlines the meaning of the choice of location.

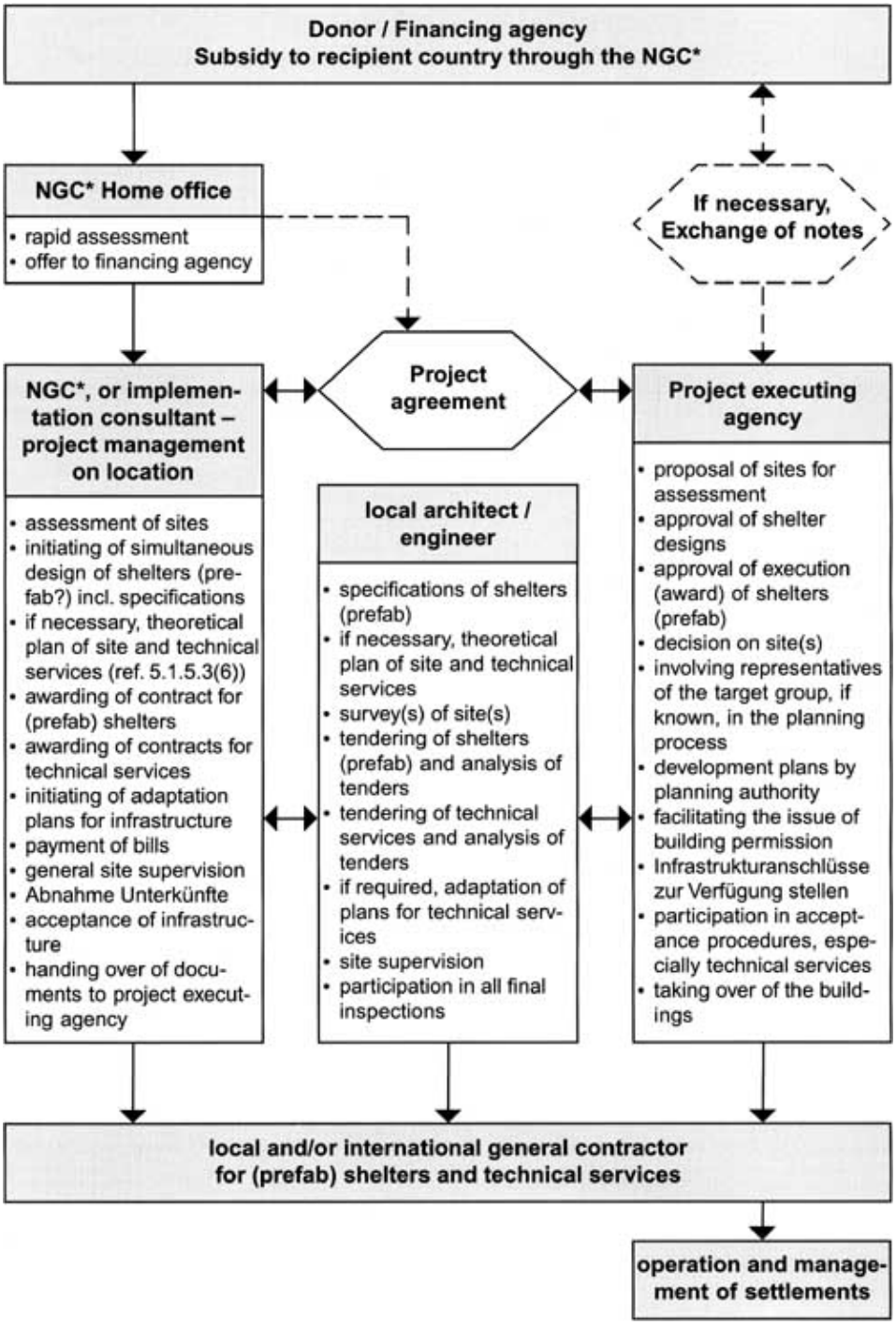
(2) Site selection criteria (see also section 4.4)

Experience shows that in the case of dense layouts a site area of 45 m^2 per person is needed. This includes all required spaces for streets, paths, social buildings (schools, administration, kindergarten, etc.), playgrounds, and a small strip around the shelter for gardening. This scale should be set as a goal – however, smaller surfaces are conceivable, if the technical and social infrastructure are partly covered otherwise.

The size of the housing settlement(s) to be planned should not exceed 2,500 people, in order to limit the impact on the environment and to be able to establish a manageable internal settlement administration. Smaller settlements have the advantage that the provision of energy and infrastructure can be solved more

easily. All reflections regarding the planning of settlements should ensure that dimensions and standards do not exceed those of the local population, in order to contain their envy.

5.1.5.3 Construction of new housing settlements



* NGC = non–commercial general contractor

Case study **F**

Construction of new housing for refugees returning to Gradacac/Modrica, Bosnia & Herzegovina

Client: **The city of Düren, with financial support of the EU, the Federal State of North–Rhine Westphalia and BMZ**

1,252,700 euros

Financing volume:

Period: **1998**

The repatriation of refugees to their home country is usually associated with a number of problems and unforeseen events, especially if refugees are granted asylum in a Western European country and have settled there. The city of Düren found a solution, which has attracted much attention, both nation–wide and internationally:

Already in 1992, the City of Düren took in to a large number of refugees from the community of Modrica, a village in the Bosnian Serbian region Republika Srpska, and tried intensively to repatriate them. At the beginning of 1998, after lengthy and difficult negotiations, the City of Düren succeeded in obtaining the permission to build a “temporary” settlement and shelter in the community of Gradacac for precisely these refugees in Düren. Gradacac is situated near Modrica, the home town of the refugees. It was, however, separated from Modrica, by the so–called “ethnical demarcation line” between the Bosniac Croatian Federation on the side of Gradacac and the Republic Srpska on the side of Modrica.

In March 1998, the City of Düren charged GTZ with the erection of a completely new settlement of 61 housing units near Gradacac. Five types of apartments different in size enabled accommodation made–to–measure. After a tender, prefabricated houses produced in Bosnia and the technical infrastructure were erected by a Bosnian general contractor under GTZ’s coordination and control.

In September 1998, six months after the commissioning, the repatriation of the refugees from Düren could be carried out. 2,354 m^2 dwelling space had been created for 61 families, including 203 returnees, at the price of 461 euros/m^2 and expenses of 5,345 euros per person. The development costs included (water supply, sewage system, supply of electricity) were extremely high at 1,917 euros/person, but absolutely inevitable.

The high expenses were the result, among other things, of the high demands of the host community of Gradacac, which intends to use the buildings after the departure of the refugees to Modrica for as long as possible for their own purposes, which is why they insisted on having larger floor space per person.

The community of Gradacac also insisted on the construction of an access road for the region, which would not have been necessary for the refugee settlement. As a compromise, the construction and the expenses of 166,200 euros were then accepted. If these expenses are taken into account in the costs of repatriation per refugee, total expenses of 6,170 euros per refugee arise. However, in the long run, this road is very important for the development of the region.

Nevertheless, the project paid off and was worthwhile in three respects: for the city of Düren the return on the investment costs was quick, since the living costs provided per refugee are very high in Germany. The refugees live close to their hometown and meanwhile (2002), coming from Gradacac, some of them were able to repair their houses in Modrica or even return to Modrica completely. The community of Gradacac will now receive new adequate dwelling space for their own use and an access road for a sustainable development.

The technical conditions of a site are: weatherproof road connections (also open to lorry traffic), connection to electricity supply, other energy sources (if available, e.g. gas), water supply, sewage mains or proximity to drainage canal. Should all of this not exist, it is necessary to install autonomous systems. This means, for example, the construction of bore wells or dug wells with overhead storage or pressure tanks, power generator, sewage plant, supply of solid fuels, and the like. Self–sufficiency requires considerably higher investment, operation and maintenance costs. The settlement facilities mentioned above refer to regions with a relatively high standard of living (Balkans, Western Turkey). The construction of settlements can, however, also become necessary in substantially less developed regions, where just the simplest technical infrastructure is adequate. Consequently this may mean: simple water supply through centralised water taps, construction of latrines, and simple electricity supply with lower capacities per housing unit.

As far as possible, the site should have a slight inclination of 1% and more, but not exceeding 7 to 8%. With steeper sites, the higher development costs (such as retaining walls, escarpments) bear no relation to the investment in the building. With regard to the sewage plant and overflow discharge, the inclination of the site has to be oriented towards the drainage canal. As an alternative to the drainage canal, underground seepage or oxidation ponds for biological purification of sewage are conceivable.

The highest ground–water level should not be higher than 3 m below ground, since otherwise natural slopes are not sufficient for sewage disposal and dirty water pump systems will be required (maintenance and repair problems).

The condition of the ground should facilitate the construction of sewage ducts, cable trenches and the like.

(3) Energy supply (see also section 4.4)

The provision of fuels for cooking and heating often constitutes the biggest technical supply problem. In general, wood as fuel does not apply, as the required quantities would be too large. In exceptional cases, the region disposes of coal or brown coal deposits, enabling a controlled fuel supply of the households via the settlement administration. Storage capacities per housing unit would have to be created for this. Paraffin/kerosene stoves and lamps are offered by specialised manufacturers, however, the local market must be able to ensure the paraffin supply. The same applies to the supply of propane gas or natural gas and devices. In regions with almost sufficient electrical energy supply, electric heaters are conceivable. This kind of supply is elegant and can be easily realised, but is generally expensive. With the help of small financial contributions of their own, the consumers should be made aware from the beginning, as to how significant and expensive the energy supply is. Meters for water, electricity, and, if necessary, natural gas should be installed in the housing units from the very beginning. They create the conditions for future accounting procedures and economic consumption.

(4) Emergency shelter

From experience, the choice of locations for one or more settlements takes a long time and precious time is lost. This time ought to be used to start immediately – independent of location decisions – with planning, tendering and awarding of shelters, usually prefabricated buildings, parallel to the search for the site. In certain circumstances the same can apply to the planning and tendering of technical services. Further information on this is given in the following item (5), “Settlement planning and technical services”. For “Basic planning criteria for simple buildings worldwide” see the explanations in chapter 6.

Should the situation permit the erection of the complete settlement, i.e. prefabricated houses and technical service, by a general contractor, both tenders have to be launched at the same time. However, a separation of these tenders is common. It is not unusual that the regions of the new settlements and the production locations of the prefabricated houses are located in different countries, thus joint ventures cannot be formed at short notice.

Emergency shelters are always housing units with one or better still two small rooms (for privacy), and depending on the standard, either with or without WC/shower and cooking place in the house. It is advisable to combine two housing units to a semi–detached house. Combinations of more housing units, for example, as terrace–houses, are also conceivable. However, they affect the privacy and identification of the people with their temporary homes, due to the limited distance between them. Furthermore, the development of small gardens or individual extensions of the buildings by the resident is more or less impossible. Building extensions, with varying success, are often to be observed.

For housing units, only one but no more than two standard floor plans should be realised. The problem of different floor plans is that with the expected change of occupants in the course of time, the dwelling that just became available is most likely to be unsuitable for the new family, being either too large or too small.

The space requirements can vary from 3.5 to 6.0 m^2 per person, depending on the budget situation and the way the disaster victims or refugees used to live in their former homes. These spatial requirements are confirmed by UNHCR and have been realised in numerous projects by GTZ and NGOs. It should not be forgotten that the focus is on temporary emergency shelters and that the prime aim is to repatriate the affected people as fast as possible to their homes or original housing area.

Even if the accommodations are only temporary it is to be verified whether a building permission has to be obtained from the local building authority.

The chosen construction of the shelters must be resistant to earthquakes and storms. The manufacturer must provide verifiable structural analysis and plans.

General technical specifications are the basis for a tender of emergency shelter and should enable the manufacturers of various materials and technologies, who fulfil the conditions, to offer their products. An offer should always be turnkey, which means complete, including transportation and assembly on site, preferably also including the construction of the foundation on site, so that the supplier is responsible for dimensional accuracy. Water, including the shut–off valve, and sewage have to be offered frost–free up to 1 m outside the house. The service company builds the inspection chamber. The electrical installation must be supplied including fuse box and transmission relay to an overhead cable or an earth cable. An overhead cable is generally less expensive. The coordination of the interface from the dwellings to the technical services is the responsibility of the project controller's site supervision. The specifications of the dwellings should contain data – depending on the climatic region – on the minimum thermal insulation of the floor, roof and walls, the maximum wind and snow loads, as well as details of windows (small sizes, insulating glass or at least 4 mm single glazing) and insulation of exterior doors. Internal walls should not be made of metal, but of chip board, plywood or plain wooden boards. Fire retardant material is desirable. The specifications should include a floor plan and section drawing of the shelter (scale 1:50).The clear height of the rooms should be 2.35 m on average. The roof overhang is meant to discharges the rainwater away from the house, but in order to avoid damage in storms, it should not exceed approx. 30 cm, depending on the material.

Many suppliers affirm to be able to build emergency shelters. The essential criteria for selecting manufacturing companies are:

- Appropriate simple technology and material of the products,
- manufacturing capacities for the supply of large quantities in the required time,
- organisation and international know–how adequate for turnkey production in the project region,
- commercial creditworthiness.

The problem in Europe and other industrialised nations is that prefabricated buildings are manufactured in production lines and the standards of production in most cases are far too high for emergency shelters. Thus new productions must be conceived, requiring time and an appropriate commission volume. In newly industrialising (emerging) countries, production can be cheaper. Large companies in industrialised nations have their contacts there and thus remain interesting competitors. See section 4.7 for more. Having similar contacts, the NGC can also buy these services in emerging countries.

Cooperation with companies from the affected region is always worthwhile as long as their performance capability can be expected, even if justifiable delays have to be reckoned with. A detailed inspection of this issue by experienced personnel of the NGC or the implementing consultant is required here. If applicable, the decision should be agreed upon with the donor/financing agency on the condition that the construction time may be longer, but in return the houses will be cheaper and thus available to a larger number of needy.

(5) Settlement planning and technical services (see also section 4.4)

Settlement planning always has to be implemented in accordance with the local planning authorities. A settlement plan corresponds to an area development plan and is a massive intervention in the existing structure and development of a whole region with long–term consequences. Most of the affected countries dispose of such planning entities. They are in charge of the activities and decisions described under the above mentioned item (1), "Choice of location" and item (2) "Site selection criteria". Most of the planning authorities insist on carrying out the development plan, more or less detailed, themselves. Generally, basic settlement concepts and parameters do exist in a building authority. They often already existed for other purposes before the disaster happened. They will have to serve as orientation, even if these planning concepts were never meant for emergency shelters. Besides, the plans also have to be formally approved by the building authorities. Together with the planning authority and political decision–making bodies, to be appointed by the planning authority, the question of after usage has to be decided on. Here, needy local people or vocational groups of the host country can be named, who will move into the apartments after the departure of the current disaster victims. These considerations will have an influence on the planning of spatial requirements and standards. Decisions have to be made, for example, as to whether or not the beneficiaries are granted a bit of space around their shelter for gardening. It will also be decided, for instance,

whether the required development of the settlement can also be used later to build single–family houses, which would ensure the sustainability of at least a part of the investment.

The experts seconded by the NGC can participate in the elaboration of the development plans in different ways. In the interest of an appropriate and quickest possible realisation they ought to decide together with the planning authorities who will take over which planning services. They should also make sure that the space requirement of 45 m^2 per beneficiary, as already mentioned under (1), is fulfilled, they should insist on minimum spacing between the buildings (flash over of fire), ensure that the required social buildings (see also the following item (7) “Social buildings”) are incorporated, and demand sufficient street lighting (sense of security).

They should also intervene when generous planning conceptions threaten to exceed the budget frame. When building several housing settlements, it may be necessary to cooperate with various planning authorities in different provinces. Here it becomes obvious that such development plans take their course and consume time.

If it is not clear where, on which site, and for how many people something shall be built, planning becomes quite difficult. However, there is a possibility to work ahead and save a decisive amount of time. The NGC’s experts should inform the planning authorities and the project executing organisations about the following possible procedures:

(6) Theoretical plan of site and technical services

The NGC, being in charge of financing the required site plan and technical services of the housing settlements and intending to charge a planner with it, commissions the planner in advance with the draft of a so–called “Theoretical plan of site and technical services” (see figure 1). Based on the assumption of a theoretical requirement of land for shelters, roads, social buildings, other open spaces, etc., a theoretical development plan can be developed. It can be assumed, for example, that there will be 2,000 people per settlement and a site area of 45 m^2 per person. Based on this information, the infrastructure planner calculates cable and pipe cross–sections, specifies all other services, and theoretically calculates their quantities.

The tender will be based on these specifications and the commission will be placed. All unit prices and the approximate quantities are now known and the contractor is all set to start. The 4 to 8 weeks, which were needed to search for appropriate sites and draft the final development plans in or together with the building authorities, were profitably used.

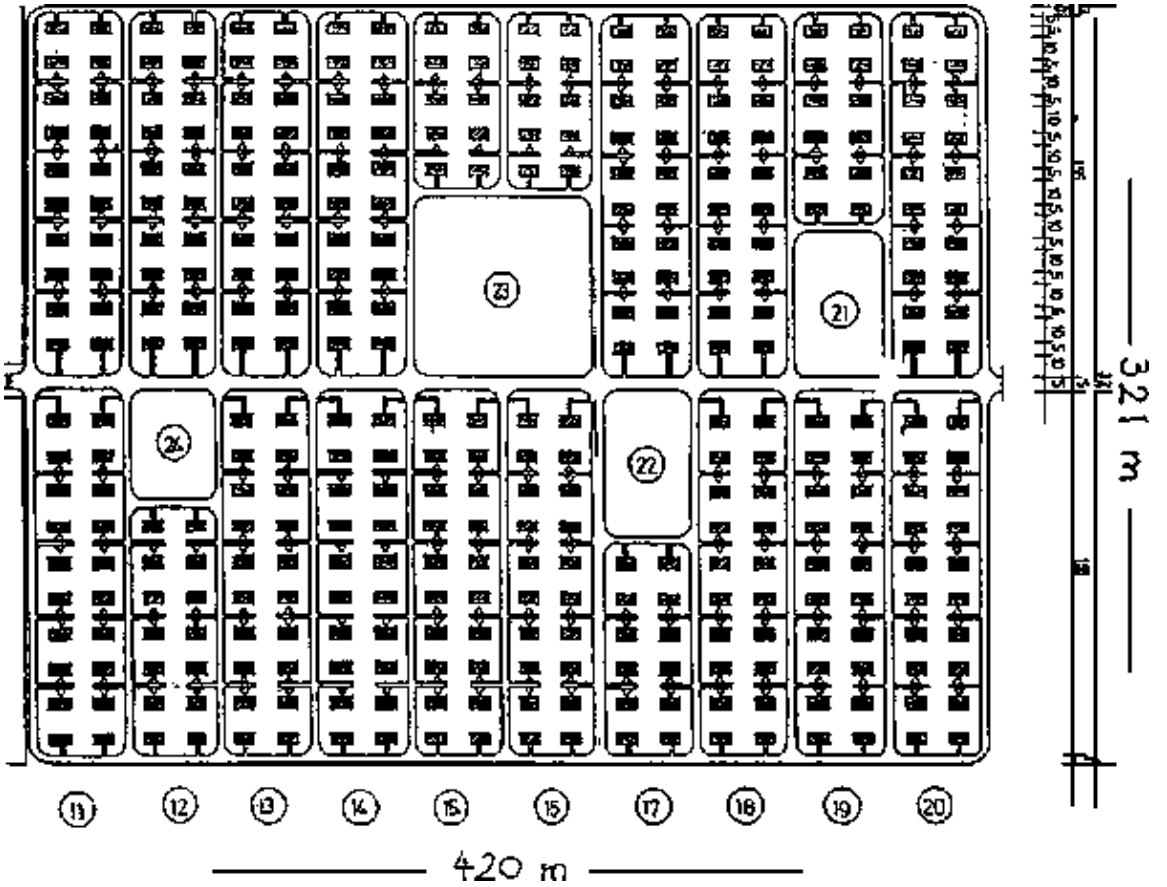


Fig. 1 A theoretical development plan

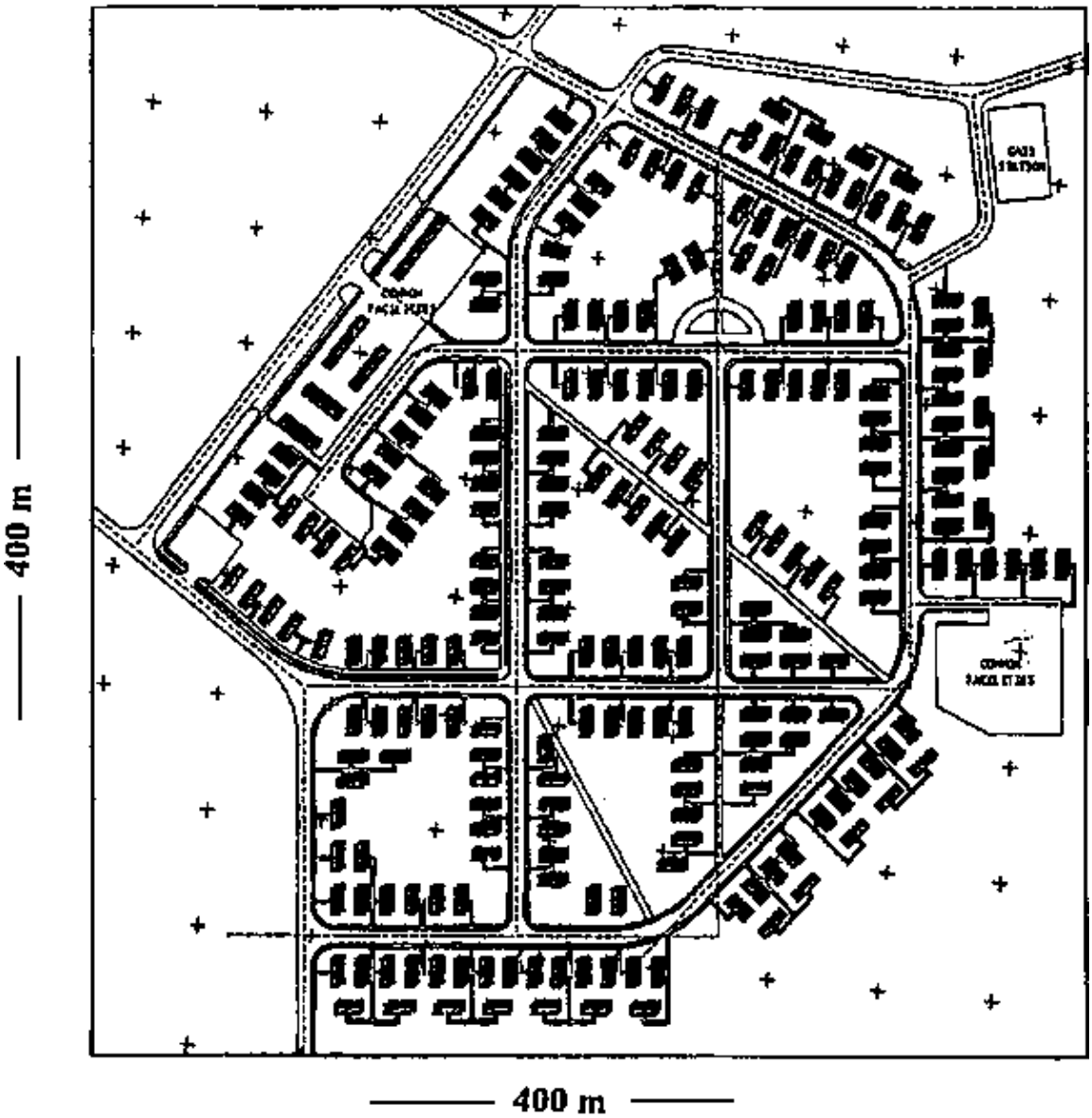


Fig. 2 The actual implementation plan (settlement in Karlovac, Croatia, 1993)

After decisions have been taken on the locations and sites, implementation planning according to the actual sites is carried out simultaneously with the beginning of the contractor's rough earthworks. Further implementation planning is gradually elaborated and handed over to the contractor. Billing is effected according to the actual expenses and dimensions, on the basis of the existing unit prices. Costs for possible new services are negotiated and fixed.

Experience shows that housing settlements of medium standard, erected within the framework of emergency measures in moderate climatic zones, do not, in the course of years, necessarily turn into slums. It is true that inhabitants come and go, but in general they take good care of the buildings. Apartment shortage and demand is too latent in most countries. It also depends on how intensively the local administrations take care of the settlements' operation.

Case study **G**

Refugee settlements, building rehabilitation and extension as humanitarian aid in Croatia

Financing agency: **Federal Republic of Germany, represented by the Federal Foreign Office (AA)**

Financing volume: **25,565,000 euros**

Period: **1992–1993**

Post war period means lost homes, expulsion and flight for a lot of people. In Bosnia and Herzegovina

alone, 2.5 million people lost their homes in the war in the Balkans in 1992/1993. About 800,000 had to flee. Hundreds of thousands of people from Bosnia and Croatia moved towards Central Europe.

In the summer of 1992, long before the Dayton Peace Agreement, the government of the Federal Republic of Germany decided, within the framework of humanitarian aid of the Federal Foreign Office (AA), to provide 50 million DM (25,565,000 euros) for the accommodation of approx. 20,000 displaced persons and refugees in winterised shelters in Croatia. Approx. 8,000 persons were to be accommodated in three settlements to be newly erected and approx. 12,000 persons in buildings that were to be rehabilitated or restructured after having been more or less destroyed by war.

At the end of July 1992, the AA appointed GTZ to be General Contractor for the complete project, until then, the largest single project worldwide of the German Humanitarian Aid. GTZ accepted the task without initially knowing where to build, how and for whom.

As a result, scattered over the whole of Croatia, a total of 39 buildings were converted into collective shelters, with sanitary installations, basic furnishings and partly with heating (e.g. 10 hotels, 7 schools, 5 community buildings, 4 hospitals, 2 barracks, 2 old people's homes, 1 factory, 1 museum, 1 orphanage, 1 mineworker's home, 1 youth camp and others more). The cost per refugee amounted to 597 euros, including all incidental expenses and overheads.

In the three settlements to be newly built, with the sites not certain upon commissioning, 8,000 persons were to be accommodated. On the basis of a theoretical building plan of 3 settlements for 2,700 persons each, the building works were tendered and the commissions for 3 different locations were placed. It was only after deciding on locations that the implementation plans of the infrastructure could begin and were pushed ahead simultaneously with the building implementation and gradually realised. The measured quantities of the actually rendered services formed the basis for the calculation and remuneration after completion. This procedure applied to a total area of 51 hectares. An extremely rainy autumn had building vehicles sometimes sink 50 – 70 cm into the topsoil mud of the building sites.

Plans were made with a Croatian general planner. Two Croatian general contractors executed the technical infrastructure. A total of 800 pairs of semi–detached houses with 1,600 housing units, as well as 14 social buildings (schools, kindergartens, health stations, administration buildings) were built by a German–Turkish consortium in turnkey construction using prefabricated, lightweight elements. Each pair of semi–detached houses was provided with a shared bathroom, gas heating (centrally supplied), and basic furniture. In mid–October 1992, building started, with the completion and the moving in of 8,000 refugees being realised in a construction time of 5 months, middle/end of March 1993. The locations of the settlements are Karlovac, near Zagreb, as well as Rokovci and Cepin in Eastern Slavonia. Ten years after completing the three settlements they are all still functioning and have been extended and partly planted with much loving care. A church, as well as additional schools have been built and complete the infrastructure. The serious housing shortage and partly unsolved returning conditions of the refugees to their country of origin make it necessary for these settlements to be retained for the time being.

The costs for the provision of 52,750 m^2 of space for shelters and social facilities amounted to 18.4 million euros. This resulted in expenses of 349 euros/m^2.

For an accommodation of 6 people per housing unit and 5.25 m^2/person, the individual costs, including all incidental expenses and GTZ overheads, amounted to 1,917 euros per refugee.

(7) Social buildings

Independent settlements exceeding a certain size urgently require social buildings, either within the settlement itself or in the neighbourhood. Social buildings are understood as premises for:

- administration,
- kindergarten,
- elementary school,
- health care stations,
- shops for food provision,
- assembly rooms (also to be used as prayer rooms),

or parts of these.

At the beginning of the planning phase the surroundings of the new settlement have to be inspected with regard to them. Social buildings can be very simple structures. On the other hand, the high utilisation frequencies they will be exposed to, have to be taken into consideration. They can be executed with the same technology and construction as the shelters or, in another appropriate form.

Some of the donors/financing agencies and also project executing organisations are not aware of the significance of social buildings in the immediate neighbourhood of the dwellings and disapprove of them, because they are only interested in financing the direct provision of shelter for the needy, i.e. providing a “roof over their heads”. Here, the NGC has to do a lot of convincing, since otherwise considerable problems will inevitably arise. In the planning of the settlements sufficient open spaces have to be incorporated.

Case study **H**

Reconstruction of a school destroyed by earthquake in India

Financing agency: **Bild Hilft e.V. (“Ein Herz für Kinder”), Hamburg**

Financing volume: **879,879 Euros**

Period: **2001 – 2003**

The devastating earthquake of magnitude 7.7 on the Richter scale, having claimed about 30,000 human lives in the West Indian federal state of Gujarat on 26 January 2001 and having almost completely destroyed numerous towns and villages, was one of the worst disasters the region has ever experienced. Luckily the earthquake happened at 08.45 h in the morning and on top of it on “Republic Day”, a national holiday, when most people were outside participating in the celebrations. It is hard to imagine what would have happened if the quake had hit the region at night, when most people would have been in their houses.

The editor−in−chief of the German newspaper “BILD−Zeitung” in Hamburg sent a team of reporters to the disaster region to report on the situation there. At the same time, the aid organisation “Ein Herz für Kinder” (“A heart for children”) published a call for donations in the “BILD−Zeitung”. The fund−raising resulted in more than 1 million euros in donations. As a priority, the money was meant to help children in villages that were most severely hit. During their search, the team of reporters discovered a completely destroyed boarding school for mainly disabled children in Bhachau, a village in the Kutch region, close to the border of Pakistan. Subsequently they decided to use a large part of the donations for the reconstruction of the school.

GTZ was assigned with the implementation of the project. In a limited tender an architectural firm from Ahmedabad was chosen and charged with the design. The tender and awarding of the building works were effected in accordance with the FIDIC guidelines, with a construction company from Chennai being appointed. The Diocese of Rajkot is the project executing agency for the St. Xavier’s High School, Bhachau. After completion, the school will take on up to 800 children, especially from poorer classes of society and disabled children.

The main problems to cope with were the late granting of the building permission, the fear of war in the border region due to the India−Pakistan conflict, the repeated outbreaks of bloody riots between Hindus and Muslims in Gujarat, and the constant price increases. The building costs were considerably above the country’s average, since the

highest earthquake resistance was stipulated.

The campus, having the size of about 2 hectares, offers enough space for two school buildings (main building with 20 classes and pre–school with 4 classes), a hostel for 28 girls and 56 boys (a novelty in the region), a house for nuns and female teachers, as well as a house for priests and male teachers. Additionally, large open spaces are provided for sports and games. Assuming a number of 800 pupils, the costs amount to approx. 1,100 euros per pupil, including all incidental costs and GTZ overheads.

Case study **I**

Rehabilitation of schools in flood areas in Cambodia

Financing agency: **Federal Republic of Germany, represented by BMZ**

Financing volume: **375,000 euros**

Period: **2000 – 2001**

Since July 2000, ongoing heavy rainfalls led to inundations of the Mekong and Ton Le Sap in Cambodia. Besides severely damaged houses, roads, and bridges, it also caused the collapse of large parts of the social infrastructure. Health centres, teachers' colleges and schools were especially hit. More than 18% of the schools in the country had to interrupt classes.

BMZ assigned GTZ to support the efforts of the Cambodian Government in reactivating the schools affected by the floods as soon as possible, between December 2000 and March 2001.

One of the first steps was to set up an interim coordination office in the Ministry of Education. The measures were implemented exclusively and at all levels with the staff of the Ministry of Education. In the capital, mainly the departments of planning and real estate were concerned, while at province level coordinators from the province administrations of the ministry were especially appointed, and at district level the school committees comprising parents and teachers were assigned with the task. The project itself was restricted to the provinces of Kandal, Kampot, Kratie, Takeo, Pursat, Kampong Cham, Kampong Chnang, Kep and Koh Kong after reaching an agreement in the Ministry of Education with the other donors. Basically the following tasks were implemented:

- Conclusion of 128 local subsidy contracts with school communities for the creation of 435 new classrooms (including benches and tables) using locally adapted timber construction;

- within the framework of 196 further subsidy contracts, restoration of 1,031 damaged classrooms (including benches and tables);

- distribution of 19,000 boxes of chalk, 490,000 pens, 135,000 black boards, and 111,000 exercise books to all 801 schools affected by the floods in the selected provinces.

In the preliminary stages of the project, the planning department of the Ministry of Education, in cooperation with an expert of UNICEF, had already developed 2 basic types of classrooms, the plans and drafts of which were to serve the school communities as stimulus, but not as condition. On the

basis of these plans, the department of real estate drew up a menu of materials that can be supplied locally and fixed their local prices. Out of this menu the school communities could select an assortment of materials at a price of up to 300 US $ for the erection of a classroom for 40 pupils. A similar list had been prepared for repair works, the maximum rate being 300 US $ (but including 15% expense allowance as substitute for WFP−food rations). The building and equipment measures amounted to a total of 375,000 euros, including the GTZ overheads.

It is assumed that a total of about 60,000 pupils have taken benefit from the building and repair measures. Thus for each pupil an amount of approx. 6 euros was invested, including the expenses for the supply of teaching materials, schoolbooks and equipment, as well as all overheads.

Furthermore, the coordination office mobilised food supplies, via the WFP, worth approx. 45,000 euros, for the 128 school communities that erected new school rooms. The establishment of the coordination office itself led to the immediate provision of a further 402,860 US $ by OCHA, SIDA and the Polish embassy for similar measures in other provinces.

5.2 Self−help models

5.2.1 General

Self−help models contain a range of possibilities of transferring knowledge and new building techniques to the target group, especially in the field of disaster−resistant building. Furthermore, they strengthen the target group's organisational potential and favour the early formation of neighbour relationships and communal spirit. The improved opportunity of participating in decision−making creates acceptance for the project and widely ensures an implementation that meets the demand. The weighting of the share of personal contributions towards external promotion influences conflict−related impacts of the building measure. A combination of self−help and contractor models in respective sections is also possible.

Compared to contractor models, self−help models generally lead to a prolongation of the building measure. In most cases, the costs of the whole project do not decrease, since considerable consulting and training components are required.

Building is a technical discipline requiring planning, engineering expertise, and manual skills, even when dealing with repairs of supposedly simple buildings and shelters. By far not all people affected by natural disasters or war−induced destructions are technically and physically in the position to repair their buildings in self−help or to reconstruct them in a different location. The opposite is often the case. The fight for survival, i.e. food provision, health care, care of families and the elderly, commits their forces, so that the affected are not even available for minor works. In war situations, many households are run by women on a temporary or long−term basis, since the men might still be in military service or may have died.

In general, self−help to provide shelter for the family can only be realised with one's own house or apartment. In situations where people have fled or have been displaced, self−help is only rarely possible, as their stay is only temporary with the aim of returning to their home country. This is especially true for complex building measures in moderate climates and relatively developed zones requiring high investments and a long−term securing of property.

As long as the households do not give up any other income generating employment, which would further worsen their economic situation caused by the emergency situation, self−help models present possible solutions. In societies marked by agricultural self−sufficiency the cultivation of basic foodstuffs must not be affected by the participation in construction measures. In principle, refugees or displaced persons (generally men) can apply as skilled or unskilled workers to the construction companies in charge of building shelters. However, chances are limited here, too, as companies first employ their own workers, who they know well.

In the context of self−help issues, not only the directly affected local population and the refugees have to be considered, but also the countries' production forces as a whole. The services of the project executing organisation, the political decision−making bodies, and, last but not least, the companies and people of the local construction industry contribute considerably, even if local planners and construction companies, for example, are paid from the donors' funds and benefit financially. These earnings immediately flow back into the circulation and foster the economic development of the affected country.

However, there are situations and regions where self−help is perfectly appropriate and works well. In these situations, knowledge about improved building techniques can be transmitted (see also chapter 6). In the following, different self−help models are described, showing the implementation of reconstruction measures by personal contributions of the affected persons (disaster victims, refugees, displaced persons) with financial and technical support from national and international organisations. The nature and scope of the support and the technical advice through the project executing organisation (local authority) and the NGC, differ according to the type of the self−help model. Several types and combinations exist, resulting from the specific requirements on location.

5.2.2 Methodological approach

The methodological approach basically corresponds to the contractor models. Here, too,

1. the donor/financing agency defines its intended support, thus

2. enabling an expert group of the NGC to perform a situation analysis and a rapid assessment, which

3. result in an offer of the NGC, which incorporates an operational or implementation proposal. After

4. the commissioning of the NGC by the financing agency,

5. an implementation agreement is to be concluded between the NGC and the project executing organisation before

6. the implementation of the reconstruction measures can begin. Upon completion,

7. the acceptance procedures, handing−over, and, if necessary, aftercare take place.

The difference, however, lies in the fact that the target group is involved more intensively in the planning and implementation of the building works, and building contracts with contractors are concluded at best for partial works. It all depends on the type of self−help described in the following sections.

5.2.3 Aided individual family self−help

This concerns the reconstruction of damaged apartments or houses of individual families, which dispose of the required labour, but only of a limited amount of the required financial means and/or technical knowledge. Provided that they meet the conditions for support (see below: (1) Criteria for the eligibility for promotion) they are generally advised by the NGC or project executing organisation about the building measures to be implemented, especially with regard to:

- nature and scope of support,
- nature and scope of services to be provided,
- technical explanations of the building measures,
- procedure and duration of the measure,
- financing opportunities (subsidy, loan).

The scope of support and supply of building material is determined by a specification and bill of quantities

drawn up beforehand by a local construction expert, contracted by the NGC, and only comprises those measures offering a minimum amount of living comfort (protection against cold, heat, rain, wind; inclusion of light and air; privacy), hygiene (minimum provision of washing facilities and toilet) and security (against destruction by natural disasters, against intruders, etc.). A time frame – as realistically estimated as possible – is given for this. All completion and extension works that go beyond this are to be carried out later by the families themselves at their own responsibility.

(1) Criteria of eligibility for promotion

- Proof has to be given that the family is the owner of the damaged house or damaged apartment.

- The family income has to be below a certain income level (defined by the local authorities).

- The family has to agree to contribute a minimum personal input to the reconstruction works (to be determined according to the project concept). Some special works (e.g. carpentry, sanitary, electrical works) can, if necessary, be contracted to professionals and special companies, which may also be appointed by the NGC or the executing organisation.

- They have to commit themselves to follow the instructions of the construction expert (or foreman) and to finish the works within the given period of time.

In case an appraisal of the project executing organisation reveals that it is qualified for the implementation of this service, it receives the required funds via a Financing Agreement from the NGC. Should the project executing organisation not be qualified, the NGC will take over these services.

(2) Tasks of the local project executing organisation

(2) Tasks of the local project executing organisation (municipality, building authority, coordination office for disaster aid measures):

- Drawing up of lists of beneficiaries.

- Appraisal of neediness as well as the beneficiaries' ability to provide self–help.

- Involving the target families in the planning of the construction measures.

- Selecting, contracting, and introducing local construction experts to appraise the construction damage and assess the required reconstruction measures.

- Instruction of the construction expert.

- Conclusion of the agreement with the beneficiaries on the implementation of self–help measures.

- Ordering the planning of the project (with special regard to structural security) as well as calculation of the material requirements.

- Procuring, storing, and distributing the required building material.

- Monitoring and overall supervision of the project procedures.

- Commercial controlling, i.e. for instance, settling accounts, keeping watch on the costs and budget.

(3) Tasks of the NGC

- Conclusion of the project agreement with the project executing organisation.

- Advising the local partners on the procedures when fixing criteria for the eligibility for promotion of beneficiaries, when drafting agreements with the beneficiaries, etc.

- Reporting to the financing agency.

5.2.4 Aided community self–help in housing construction

In order to be able to increase the self–help efficiency, several families (3 to 5) can join together and form a neighbourhood cooperation and repair or reconstruct their damaged apartments or houses by a joint building team consisting of members of affected families. The promotion criteria and the promotion procedure are basically the same as those of the aided individual family self–help. In this case, however, families are committed jointly.

Case study **J**

Aid for earthquake victims in Colombia

Financing agency: **Federal Republic of Germany represented by BMZ**

Financing volume: **1,073,700 euros**

Period: **1999–2000**

On 25 January 1999 an earthquake of magnitude 6 on the Richter scale hit Columbia's coffee region. More than 200,000 people became homeless in the region around the city of Armenia. After the distribution of food and medicine and the provision of simple sanitary facilities in temporary shelters in the first days after the earthquake, the reconstruction of houses in different communities of the Department of Quindio, especially for the population groups of poor, landless coffee pickers, was identified as priority measure in the ongoing process. In the weeks to follow, 278 houses were built out of bamboo in several communities.

During the building conception, in cooperation with the University of Pereira, a new house type using locally grown bamboo had been developed, offering a higher resistance to earthquakes due to the special frame construction. The communities supported the building measure through the administration of material stocks and the mobilisation of the target group, while the coffee plantation owners provided material for the foundations as well as machines. The training of the target group further enabled a great share of self–help contribution and future income opportunities for trained people in the building sector, who benefited directly due to the great acceptance of the model. Even though the building measure was delayed as a result of the numerous economic problems of the households in providing at least one worker each, the first house was completed after 70 days. The low building costs due to the use of local material and the culturally adapted construction method led to the fact that the model was adopted by other aid organisations, still during the construction phase, and was also copied locally.

A total of 1,540 earthquake victims were accommodated in the 278 houses with the help of the reconstruction measures. Applying a mixed calculation results in accommodation costs of 697 euros per person, taking into consideration all emergency and accompanying measures, incidental expenses, and GTZ overheads.

The project is considered a successful example of development–oriented emergency aid, since on the one hand the project provided shelter for the victims, and, on the other hand, an innovative, adapted, and inexpensive building technique with a considerable multiplying effect had been successfully introduced. The efficient cooperation between the target group, communities, the association of coffee growers, and the University of Pereira contributed decisively to its success. Despite the heavy rainfalls during the building phase and delay in the provision of sites in areas less endangered by earthquakes, the earthquake victims were not provided with just emergency shelter, but instead with permanent accommodations within a reasonable period of time. This resulted in a boosting of the affected people's self–confidence in a great emergency situation.

Case study **K**

Support measures for the homeless in Freetown, Sierra Leone

Financing agency: **Federal Republic of Germany, represented by BMZ**

Financing volume: **690,700 euros**

Period: **1999**

In January 1999, approx. 50,000 people in the eastern part of the capital of Freetown became homeless as a result of the fighting during the civil war in Sierra Leone. They had to find refuge within a short time in other parts of the city, which, however, could not absorb the crowds streaming in.

The reconstruction measures were executed by self–help or neighbourhood cooperation. The population was mobilised by the local reconstruction committees, which had also supported the assessment of damage before. Within the project, workshops were set up, where local craftsmen, having lost most of their tools during the civil war, manufactured doors and windows and received a basic set of tools as compensation after completion of the measure. The workshop operations were continued by the local people themselves after the building project was over. The work groups, organised by the neighbourhoods, built raw structures up to roof level in traditional earth construction. The plaster, a concrete floor, as well as roof substructure and covering were subsequently executed by local craftsmen. A local NGO coordinated and advised the reconstruction committees. In various sectors of the city, decentralised building yards for storing building materials, some of which being recovered from the ruins, were set up and run by the reconstruction committees. In the rainy season, tarpaulin sheds covered the building yards, which enabled the manufacturing of concrete blocks, even during the rains.

GTZ's contribution in addition to providing material support focused on the damage assessment and the participatory selection of building projects to be promoted. Afterwards, mainly organisational support and consultation of the reconstruction committee as well as the contracted NGOs were rendered.

Between May and December 1999, shelters for 1,800 families (approx. 10,500 people), as well as 12 schools for 5,000 pupils, a health care centre, and a maternity clinic were set up within the framework of the project. The costs of the project measures carried out by GTZ amounted to 690,700 euros. Including the costs of the community buildings, incidental costs, and GTZ overheads, this results in accommodation costs of 66 euros per person. Part of the building material (corrugated iron, building timber, cement), as well as foodstuffs for "Food for Work" measures were provided by CARE, CRS and UNDP/UNOPS and are not included in the accommodation costs.

The project is to be considered especially successful since a contribution to ease the crisis situation in the capital could be made with little effort but high personal contributions. Additionally, the local building industry was given the chance of a new beginning. The efficient and smooth cooperation between the different aid organisations enabled a rapid and in all cost efficient realisation of the project. The good cooperation with the authorities as well enabled a quick resumption of school and health care services. Furthermore, the reconstruction committee's ability to organise and act was strengthened and is still being used for other tasks.

In general, the aim is to unite families into one group within a neighbourhood, in order to strengthen the community spirit and to keep distances short. The nature of construction works on apartments or houses should also be similar, in order to ensure that the work to be done is more or less the same for each family. In order to make sure that families, whose houses are completed first, do not reduce their share of participation in the community self–help scheme, or even back out entirely, it is important that the work procedures be organised such that all accommodations are completed simultaneously. Therefore, for example, all foundations should be produced successively, followed by all masonry works, installation of windows and doors, all plastering works, all paintworks, etc. This enjoys the additional advantage of greater efficiency in work performance, as well as a more effective use of equipment and materials.

The local project executing organisation's task here is to provide support and supervise the works through a building expert, as well as to procure, store, and distribute the required material. In case a Financing Agreement is not possible, the NGC advises the project executing organisation and, above all, takes over the commercial controlling.

5.2.5 Aided community self–help in the construction of community facilities

Aided community self–help has also proved to be successful in the field of rehabilitation and reconstruction of buildings of social infrastructure, e.g. schools. Here, the procedures can be as follows:

- The construction department of the school authority or the building authority, possibly in cooperation with private architects and engineers, takes over responsibility for planning, calculation, material lists, site supervision, and approval.

- Each school forms a school development society, consisting of teachers and parents, who determine the conception of the measures and provide personal inputs in the form of material supply, manual work, and, if necessary, financial contributions. Experience has shown that these personal contributions constitute between 10% and 30% of the total building costs. The balance is covered by the NGC. The school development society assumes the role of the client and concludes contracts with craftsmen, advised by the school authority's construction department or the building authority, which also determines the craftsmen's wages and sets upper limits for other costs. Those costs are fixed at market rates. Should resources become scarce during implementation, some of the works will have to be cancelled. In case the school development society has worked economically and financial means remain, it can additionally invest these in construction or in other pending school projects.

- The NGC concludes an agreement with each school development society, procures the building material free on site, takes care of the administrative, commercial, and technical supervision, and finances the measures. The NGC also finances the private architects and engineers, who support the building authority or the building department of the school authority.

The model can also be applied to community centres and other small measures, e.g. school furniture, toilet construction. The procedures are generally the same as described above.

5.2.6 Other self–help models

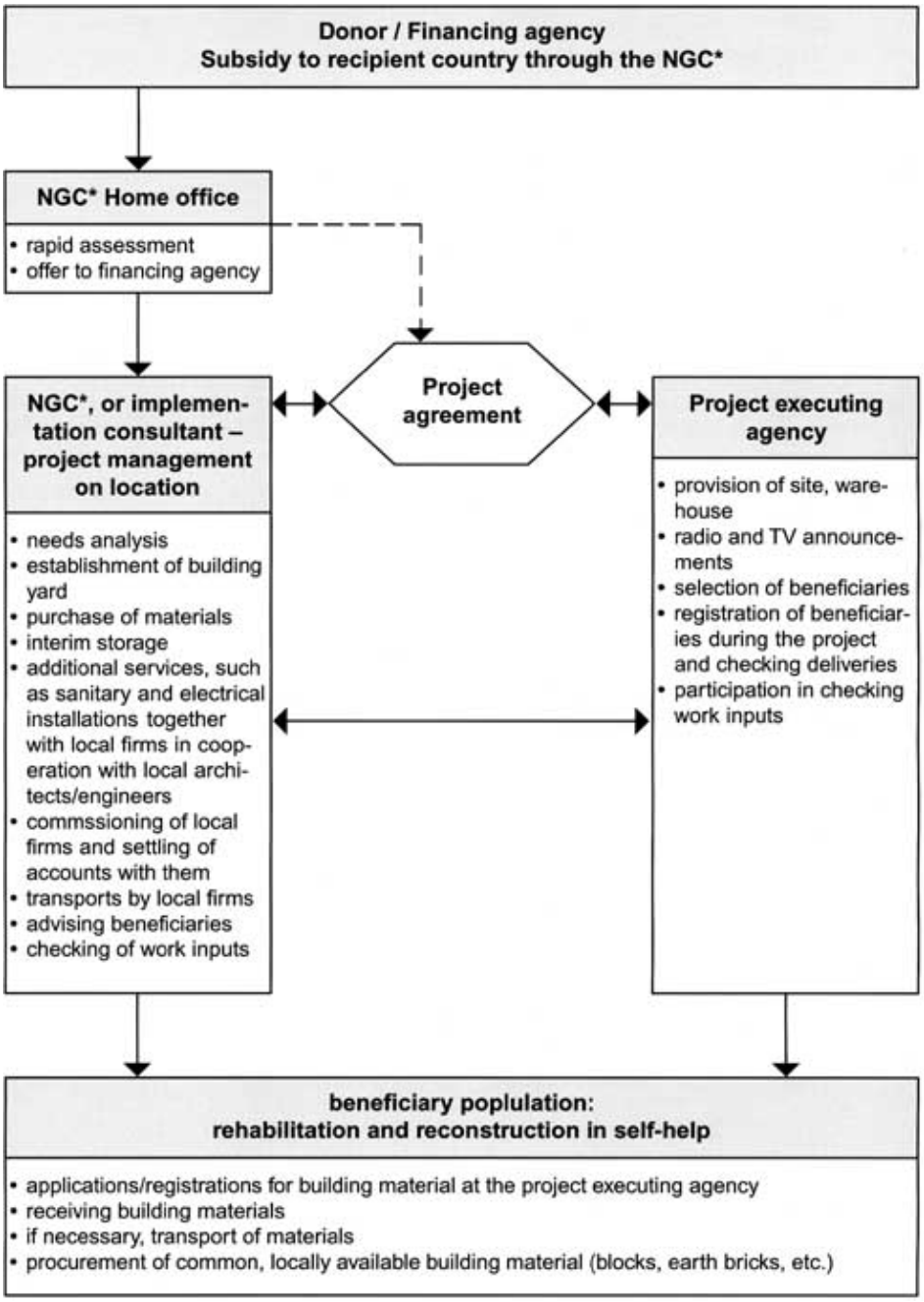
A rarer version of the self–help model is the building of new houses on new sites. This occurs when the authorities provide land for the beneficiaries to build on by themselves. Architects and engineers draw up the plans of settlements and the house types, on commission by the local executing organisation. The site development as well is carried out by specialist companies, while the actual building of the house is left to the settlers. The NGC procures the building material free on site, takes care of the administrative, commercial, and technical supervision and finances the measures. The services of all parties involved have to be settled by contract.

For the individual families it is almost impossible to build their own house without help from outside. Together with other families, however, the house can be built rapidly and efficiently. In this case, the community self–help described above, which incorporates technical assistance by a local building expert, is an ideal implementation model. Here it is also important to complete the individual houses of a neighbourhood building team almost simultaneously. In order to make sure that all buildings are completed in the same standard and that none of the involved families is privileged in the allocation of houses, these are assigned after completion of all building works by casting lots.

The nucleus model for rehabilitating private houses is a special form of self–help, which occurs after the core (“nucleus”) of the beneficiary’s house is constructed as a stimulus by a building company, commissioned by the executing organisation according to the NGC’s instructions. Usually, this nucleus consists of one living room with a roof, windows and doors, as well as the most important sanitary facilities and energy supply. The beneficiary family completes the building. This model is described in section 5.1.5.2 (3).

The building yard model described under 5.3 is a special form of all models mentioned before. It envisages the establishment of a large warehouse for building material (sometimes technical equipment as well) and has proved successful in situations when building material is rarely available or only at excessive prices on the open market. By bulk purchases and import of building material and equipment through foreign aid organisations, people intending to build can purchase the material considerably cheaper. The building yards dispose of specialised personnel offering advice and help to potential builders. In some cases, the building yards have sample houses on display and also offer training courses.

5.3 Building yard model



* NGC = non–commercial general contractor

5.3 Building yard model

(1) Aim of the model

There are several so–called building yard models for the coverage of material requirements and reconstruction after disasters satisfying varying requirements. The purpose and philosophy of the building yard model described here is to support the needy native population in rural regions and in the suburban areas in the reconstruction of their destroyed houses and apartments after natural disasters or impacts of war.

First of all, it is a matter of providing a minimum of essential basic building material as fast as possible to give the people at least a simple “roof over their heads” or to “winterise” their partly destroyed houses. The works are mainly executed by personal labour inputs of the affected family or by neighbourhood cooperation. The individual building concept has to be oriented towards the skills of the affected people, which normally means only simple repair works.

This model can also be applied for the new construction of simple dwelling houses.

(2) Project executing organisation and beneficiaries

Even for the concept of a building yard model, a written project agreement has to be concluded with the local project executing agency, listing the rights and obligations of both parties. Assisting services of the executing agency could be the provision of a site free of charge and a warehouse or industrial hall as building yard store, saving the financing agency some money. The funds saved would be available for additional supply of material.

The choice of beneficiaries who should receive building material and support has to be made either by the executing organisation or someone appointed by them. This cannot be a duty of the building yard management. They should, however, be involved in the determination of the selection criteria as well as observe the operations and report supposed and major irregularities to the financing agency through the NGC.

The project executing organisation has to inform the population, for example, via radio, television or a notice at the community authorities, about the supporting measures and conduct or delegate the registration, while maintaining full responsibility. Furthermore, it also has to assign personnel, which later on, during the distribution of building material and provision of other services, has to get the beneficiaries' confirmation of receipt of the goods or services. This personnel becomes a part of the building yard team and also has an office there.

(3) Building material

What is to be understood by basic building material depends on the situation in the country, the degree of destruction of the houses and the common material and technologies of the particular country. This is to be investigated in advance. In the beginning, it mainly concerns roof–covering material (possibly temporary covering), bricks, lime and cement, construction timber and reinforced plastic sheets for the temporary closing of window openings. Since in most cases the material resources in the affected countries run out fast, the building material is specified by the NGC and, after invitation of tenders, obtained from bordering countries or other regions, and then temporarily stored in the building yard. Here, experienced purchasing agents of the NGC with international experience are required. Amongst others, the following tasks are involved:

- Procurement of building material (invitation of tenders, purchase, cost management, accounts, organisational control, i.e. observation of delivery and payment delays);

- Organisation, implementation, monitoring (personnel and material) and accounting of transportation.

It is worth considering providing material allotments, so–called "material kits", of equal size per family/household, in order to maintain equality and ensure that no envy arises. Occasionally, larger allotments may be supplied, provided that it concerns larger families and greater destruction. A transparent management of the allotments is essential.

It is a declared aim of the relief actions not to create business competition with the country's building material suppliers, as far as such traders exist and are sure to supply the required quantity fast and at fair prices. With increasing alleviation of the most urgent needs, the building yard's function is gradually reduced.

In the course of the situation analysis or rapid assessment, when the establishment of a building yard becomes apparent, a first rough list of material required and cost estimate have to be drawn up by the appraiser after an estimated damage analysis. This cost estimate is a constituent for the formulation of the budget and offer to the donor/financing agency.

(4) Extended scope of services

Supplementary to the basic building material, the provision of simple house installations, e.g. electrical installations and sanitary units can also be included in the programme of the building yard, as far as this standard is found essential and cannot be provided by the target group. The building yard's management, however, will not procure and store installation units of its own, but will cooperate with the local building industry (installation companies) and subcontract these services completely to them. The advantage is that the standards and materials applied are those common on the local market, and can easily be repaired or augmented later on. One or more local engineers or an engineering office should be employed by the NGC to carry out investigations on the partly destroyed houses and to formulate the specifications and description of services, on the basis of which the local installation companies can submit their offers.

The disadvantage of taking over such extended services is that the building yard management neither has an influence, nor wants to exert it on the performance of personal contributions of the house owners, and thus the interfaces between the services of the installation companies and those of the self–help groups are hard to coordinate. Significant delays and possible material losses can occur. It is, however, the declared goal of the NGC not to assume the role of a contractor in the building yard model, who is in charge of the completion of the houses and is judged accordingly. The NGC supplies and distributes building material and supports the beneficiaries, if necessary also with the help of installation companies that are contracted, whose services are checked and then paid. The coordination and completion, however, lies in the hands of the house owners. In case serious problems arise within these extended services, they should be called off. For such cases there are other models, presented as contractor models in the above section 5.1.5.2 "Rehabilitation of houses destroyed by war", for which the NGC takes over total responsibility.

Provided the market does not already offer these products, an extension of the scope of services can be, for example, the import and distribution of simple small windows and doors, preferably in wooden constructions, adapted to the country's standard. Furthermore, standardised, insulated lightweight roofing elements in the form of panels can be imported to replace the destroyed traditional roof constructions made of wood and mud, for example in arid rural zones. The house owners themselves can install them.

Another viable option is the import of large quantities of seasoned sawn timber for the construction of windows and doors on location in the affected country, in case there is a shortage (for example, in Afghanistan). This way, the manufacture of complete windows and doors could be arranged with local carpenters upon provision of sawn timber, which would then be distributed by the building yard.

(5) Technical prerequisite of the building yard

Depending on the estimated budget an appropriate building or rather a warehouse should be made available, if not provided free of charge by the project executing organisation, then on a rental basis by the building yard management. Possibly a partly destroyed hall can be repaired for this purpose. The site must have a connection to the public road networks, suitable for heavy vehicles. The site has to be lockable (fence). In case no hall is available, a roofed area has to be built for material requiring protection. Office space has to be provided for the building yard management. The building has to have or receive power connections, including three phase supply (380 V). The establishment of workshops or the acquiring of special machines and vehicles (other than a forklift) is not required. These are to be rented, if necessary.

(6) Building material distribution

The distribution of building material is one of the most difficult work steps. It should first of all be ensured that the material procured by the NGC from within the country or neighbouring countries, as well as that imported from overseas, will be supplied free on building yard and stored there.

Case study **L**

Rehabilitation of schools and housing for returning refugees in Jaffna, Sri Lanka

Financing agency:	**Federal Republic of Germany represented by BMZ within the framework of TC and the KfW within the framework of commodity aid**
Financing volume:	**3,683,700 euros**
Period:	**1996–2003**

Since 1983 Sri Lanka has been marked by ethnic conflicts, which led to a civil war still ongoing in spring 2002. In April 2002 a cease–fire was declared and negotiations are being held since. In the whole country, approx. 530,000 families, mainly Tamils, were forced to flee. The war between the Sri Lankan army and the Tamil rebel group LTTE (Liberation Tigers of Tamil Eelam) in the Jaffna district, had led to considerable destruction of infrastructure and to the flight of almost half of the population of the Jaffna province during the years 1995/96. Until spring 2002 it was reduced to 450,000 people.

Already at the end of 1996, BMZ decided to support the government of Sri Lanka in the reconstruction of Jaffna and the repatriation of refugees, and charged GTZ with the implementation. The “Jaffna Rehabilitation Project” (JRP) was created. The KfW granted financial aid in the form of so–called commodity aid, which was carried out by GTZ. The “Resettlement and Rehabilitation Authority of the North” (RRAN) is the counterpart institution in coordination with the “Government Agent” (GA).

The main activities of JRP are:

- rehabilitation of the drinking–water supply in the city of Jaffa and the whole region,
- rehabilitation or reconstruction and furnishing of schools,
- reconstruction of houses,
- operation of a central building yard for the supply and distribution of material,
- promotion of small enterprises (production of micro–concrete roof tiles).

The central building yard is the project’s coordination point. The housing construction is generally carried out by the families themselves, the construction or rehabilitation of schools by so–called “School Development Societies” (SDS), i.e. teacher–parents–interest groups. The building yard provides the building material, which is mainly procured from Colombo.

Building experts of the “School Works Branch” (Department of Construction of the Ministry of Education) control and advise on construction–related issues with the support of private architects. The GTZ experts advise and coordinate.

At the end of 2002 the project implementation still continued. It will end in 2003. Until now the following building works were implemented:

• rehabilitation of buildings and reconstruction of a total of 24 schools	1,063,400	euros
• supply of furniture for a total of 24 schools	63,900	euros
• construction of school toilets for a total of 230 schools	814,700	euros
• erection of 1,000 housing units	1,677,000	euros
• setting up and operation of 1 central building yard	64,700	euros
The total costs for all building construction measures so far amount to	3,683,700	euros

The aim should be to have the beneficiaries pick up the building material, which is generally provided free of charge, at the building yard and thus have them arrange for the transport by themselves and at their own expense. In the building yard it will be registered and confirmed by the recipient which family from which village has received what kind of material for which house. These registrations and confirmations are incumbent upon the local administration or project executing organisation (also refer to item (2)).

If, after a thorough appraisal through representatives of the project executing organisation, it can be confirmed that beneficiaries are not in the position to organise and pay for the transport, then the building yard management can be charged with it. For that purpose, cooperation with local transport companies should be arranged. Together with them, a system of loading schedule, distribution, and confirmation of receipt should be elaborated, according to which distribution and billing is effected on behalf and at the expense of the NGC. This system requires the executing organisation to be included in the control and confirmation. Building up their own fleet of vehicles is only necessary when the market does not offer this service, which should rarely be the case. In general, it is uneconomic to have one’s own vehicle fleet, as it is inflexible in usage, expensive to operate, and is difficult to manage with regard to repair works and spare parts. Just a small lorry should be available for special requirements.

(7) The building yard team

Personnel (example):

The quantity and quality of personnel depends on the concept and nature of service to be provided by the building yard. It influences the decision as to which personnel is to be seconded or whether qualified personnel can be recruited on location. Should the NGC, for example, already dispose of an office there, then this can possibly take over various functions (e.g. commercial activities, secretarial work, and the like). Consequently the personnel is to be composed individually. Required are:

- 1 building yard manager (technical background);
- 1 assistant manager (as deputy) (technical or commercial background);
- 2 local persons (building technology experts) for the management of the “extended services”, in accordance with the above section 5.3 (4); person(s), who can also be allocated by a local engineering office;
- 1–2 interpreters, depending on the local technicians’ language knowledge;
- 1 forklift driver (if required);
- 2–3 drivers (for cars and for small lorries);
- 10 – 20 warehouse workers;
- at least 2 local counterparts, in charge of tasks such as those described in section 5.3 (2), “Project executing organisation and beneficiaries”.

Equipment (example):

- office equipment, as far as possible incl. computers, e–mail, telephone and fax machine;
- satellite telephone, if required;
- 2 – 3 cars, if possible all–terrain vehicles;
- 1 small lorry, approx. 3–5 tonnes (if required);
- 1 forklift (if required);
- general tools for warehouse workers.

Costs for accommodation and expenses.

5.4 Special projects

GTZ is one of the largest public service companies worldwide in the field of development cooperation, disposing of decades of experience. With the help of its qualified staff, which is familiar with the social, economic, political, and cultural conditions of its partner countries, it is in the position to execute complex special projects concerning many sectors, for national authorities, and international clients and institutions. The support of the Emergency Loya Jirga in Kabul, Afghanistan, which took place from 11 to 19 June 2002, will be presented in the following case study.

Case study **M**

Support of the Emergency Loya Jirga in Kabul, Afghanistan, from 11 to 19 June 2002

Financing agency: **UNDP (United Nations Development Programme)**

Financing volume: **8,100,000 US $**

Period: **2002**

At the beginning of April 2002, GTZ received a commission from UNDP to technically renew the buildings of the partly destroyed technical college in Kabul as well as the 33.6 ha large site on which it is situated, in the extremely short period of time until 10 June 2002 (10 weeks), to conduct the elections of the head of state and the most important members of the Afghan interim government, and to ensure the organisation of the event. A total of 1,685 delegates, among them approx. 185 women and 1,676 persons for service, organisation and security, were to be accommodated on the site (delegates in the buildings, personnel partly in tents).

The implementation of the works was performed in close cooperation with the Afghan Loya Jirga Commission, UNAMA (United Nations Assistance Mission for Afghanistan), ISAF (International Security Assistance Force) concerning security aspects and a number of Afghan, German and international companies for the construction works and the organisation of the conference.

In addition to the logistic requirements (e.g. conference technology, information and communication, security, registration, catering, equipment and accommodation, supply, transportation and health care) and the conference management (e.g. care of the participants, questions concerning protocol, press and public relations, information and communication, recruiting and training of personnel), the building works for a temporary restoration of the existing buildings and the creating of a new, separate conference area (conference tent of 2,800 m^2 and various tents for meetings, VIPs and conference management) and a temporary technical infrastructure (water supply, 200 toilets, 3,000 m illuminated security fences equipped with watch towers, supply of electricity and complete lighting of the buildings and the site) constituted the outstanding services. A total of 5 Antonov freight planes brought, for example, conference tents and conference equipment from Germany.

All in all, 27,480 m^2 of building area were rehabilitated for temporary use (hostels, dining hall, multipurpose hall, service buildings) and a temporary traditional large kitchen of 1,000 m^2, with a capacity of approx. 9,000 meals per day, was set up. In addition to that, 14 temporary structures with toilet and washing facilities having a total area of 2,240 m^2 were set up, and the outdoor areas, such as roads, paths and gardens, were prepared.

On 8 June 2002, the completed facilities were punctually handed over to the Afghan Loya Jirga Commission.

6. Basic planning criteria for simple buildings worldwide

6.1 General

The construction of buildings within disaster relief measures does not differ from building in normal situations, as long as these are not temporary buildings and emergency accommodations. The planning and realisation of dwellings must always take the following factors into consideration:

- Economic aspects
- Socio−cultural aspects
- Ecological aspects
- The climatic conditions
- Protective measures against natural hazards

Taking all the factors into consideration can in some cases lead to contradicting planning requirements. This is particularly true in the case of emergency housing, which calls for compromises on account of time and cost restraints.

6.2 Economic aspects

The need to restore living space is usually high when the number of people rendered homeless due to expulsion or destruction of houses is high. In general, the greater part of reconstruction of living space is carried out by the affected people themselves with their own resources and in self−help, partly supported by grants and special credit programmes on a national level.

The provision of housing within the framework of technical cooperation constitutes a relatively large individual promotion on account of the high cost per beneficiary. That is why such aid can generally reach only a small number of the needy.

The key indicator for the cost efficiency of building measures is the resulting cost per accommodated family or person. The costs of building measures vary considerably on a global scale, on the one hand due to the method of construction, but also due to the extreme variations in the costs of building materials, transports, wages and other influencing factors, e.g. political ones.

Apart from the cost effectiveness in the narrower sense, the economic analysis must also consider other economic benefits of the affected population: these include the reduction of risk of destruction of dwelling space due to disaster resistant constructions in future local projects, or even the model effect for future building technologies in the country as a whole. In the process, the building costs may increase only marginally, while the costs of transferring of new technologies, knowledge and skills also have to be taken into account. Moreover, it is important to conduct a comparative evaluation of the long term economic advantages for the present and future users of buildings with normal life spans compared to temporarily used buildings.

It is possible to influence the costs through the choice of models: it cannot be assumed that self−help models are principally more economic than contractor models, because a higher degree of support and longer duration of self−help projects have to be taken into account. When especially needy groups are being supported, it is usually not possible to expect personal inputs from them which will significantly reduce the total construction costs.

In order to serve as large a number of people in need of housing as economically as possible, the rehabilitation of living space in private houses or in hotels offer particularly suitable alternatives, as the costs are generally lower than those of new constructions. When rehabilitating private houses, the economic benefit is also distributed amongst the host population, in the case of public buildings the host communities get the benefit.

The nucleus model can lead to a reduction of costs per user, because within a short time only the most important building parts are constructed, and the rest of the building works is carried out without external assistance. The building yard model can also be comparatively cost−efficient, depending on its application, as it mainly deals with material aid.

Temporary shelter is usually cheaper and quicker to produce, but of less advantage with regard to the local economic development and sustainability. The cost benefit, however, is limited by the fact that mainly external

resources have to be used (import of prefabricated building components and production by international construction companies).

The establishment of new housing settlements is generally cost intensive and constitutes a severe intervention, which is economically justified only in cases where the utilisation of safer sites leads to a significant reduction of disaster risk.

In general the cost effectiveness of a model has to be weighed against several other factors, and the feasibility of each model has to be ensured under the special emergency conditions and in the specific local context, otherwise the ultimate success of the project will be at stake.

Apart from the choice of models of implementation, the planning criteria for simple buildings can each be analysed in terms of cost considerations. It would be ideal to apply as many as possible of the criteria listed in this chapter when designing buildings, but since the financial means are usually very limited, the costs incurred rarely permit the application of all the required measures. That is why the application of economical construction methods is of particular importance. The costs can usually be reduced by the following aspects:

- Utilisation of locally proven building materials and technologies (Local building traditions are usually the most economical; they use abundantly available and inexpensive building materials, which can be supplied without delay; they utilise common local handicrafts and materials available on the local market, and thus ensure easy repairs and repetitions at relatively low cost).

- Building without heavy equipment (While a high degree of mechanisation of building measures is common in industrialised countries and generally more cost effective, in poorer countries it is often not possible and considerably more expensive than manpower; moreover breakdowns can occur, causing expensive and lengthy repairs, and problems can arise during transports).

- Design concepts using lightweight building elements (They simplify transports and assembly, and are therefore cheaper and more easy to realise in remote locations).

- Economical building design (Simple compact forms reduce the ratio of wall surface to usable floor area; by combining several building units, walls can be used jointly; internal partitions can be achieved by room–high wardrobes and curtains, etc.).

- Phasing of building works (Not everything needs to be built at once, a core (nucleus) of 1 to 2 rooms with cooking area and sanitary facilities can be sufficient at the beginning, while plans exist for the extension of the house – horizontally and/or vertically – as the requirement may be).

6.3 Socio–cultural aspects

In order to ensure the success of the project it is important to take the special living conditions of the target group into consideration when planning. That is why it is important to acquire information on the local building methods and involve local professionals in the development of the concept.

The following are some of the aspects to be taken into account during planning:

- Habits, traditions, religious requirements (Are large families with three generations under one roof common? Is the spatial separation of adult men and women strictly practiced? Are bunk beds acceptable? Are toilets acceptable within the living area? Is it necessary to make sure that the toilets are not oriented towards Mecca?).

- Use of the building (Is much space needed for social contacts, e.g. a large living room or roofed outer space, or is the life style more introverted, e.g. with an internal courtyard? Is outdoor sleeping favoured, e.g. on the roof? Is the keeping of livestock or pets important?).

- Security requirements (Do burglaries occur frequently? Do wild animals represent a danger? Is there a danger of social or ethnic conflicts arising in the neighbourhood?).

• Aesthetic values (Are there forms, materials or colours that are preferred or rejected? How important is it for the occupants to be personally involved in the design and decoration? How much can be left to them?).

6.4 Ecological aspects

Ecological building is relatively unknown in many countries, which is why reconstruction projects often provide a good opportunity to incorporate ecological aspects in the design and make the target groups aware of them, provided that the preconditions (funds, products, acceptance) exist. There are numerous ecological design criteria, here are the most important ones:

• Utilisation of local abundantly available materials (which can vary considerably according to the geographical conditions and regional industry. Ecological aspects are the conservation of limited resources, the avoidance of imports and long distance transports, as well as fostering the local industry. Quite often local materials, e.g. clayey soil, exist in unlimited supply, or e.g. bamboo, are quickly regenerated).

• Use of materials which are produced with low energy inputs (meaning less emission of pollutants) (burnt clay bricks require more energy for their production than e.g. concrete hollow blocks; sand lime bricks require even less).

• Avoidance of materials and methods that are dangerous to health (best known example is asbestos cement – to be avoided at all costs – also various wood preservatives, solvents, phosphogypsum, etc. – an environmental expert should always be consulted).

• Utilisation of regenerative resources (e.g. rainwater collection from the roof; composting of kitchen waste; solar energy for water heating and power generation; wind energy for pumping water – however, solar and wind technologies can be expensive to procure).

6.5 The climatic conditions

In order to clarify their climatic differences, the inhabited regions of the earth are roughly divided into the following 5 climatic zones, giving brief information on the corresponding building design requirements:

a. warm humid climate with temperature and humidity levels in the upper limits of the comfort zone (e.g. above 30°C with relative humidity above 50 %), limited cooling at nights and considerable rainfall; building design requirements: **light, non–heat–retaining construction, good cross–ventilation, i.e. large openings.**

b. hot dry climate with extremely high maximum temperatures (often exceeding 35°C) and large drop in night temperatures (to below 15°C), low relative humidity, scarce rainfall, but occasional sand and dust storms; building design requirements: **heavy, heat retaining construction with dissipation of heat during the night, small openings at higher levels.**

c. tropical composite climate with tendencies either to warm humid or hot dry climatic features; building design requirements: **partly heat retaining constructions, in all other points compromises between warm humid and hot dry building design.**

d. tropical highland climate with strong solar radiation, large temperature fluctuations, cold winds and possibility of development of dew; building design requirements: **similar to composite climate, but in addition with heating facilities.**

e. temperate climate with large seasonal temperature fluctuations and extremely cold winters; building design requirements: **heat retaining constructions with moisture barriers and heat insulation, as well as additional heating facilities.**

6.6 Protective measures against natural hazards

6.6.1 Earthquakes

• Provided there is an option, avoidance of sites on or near slopes (danger of landslides, avalanches) and coastal sites (danger of tidal waves), sufficient distance from neighbouring buildings (danger of collapse), especially in the main wind direction (danger of flashing over of fire), and downstream from dams (danger of dam burst), no constructions within the area of collapse of bridges.

• As far as possible, rigid ground conditions (preferably rock), because earthquakes can lead to the liquidation of the soil and thus deprive the foundations of its support; filled up ditches and river beds are especially to be avoided.

• Symmetrical shapes of buildings (no L–, T– or U–shapes), also, as far as possible, symmetrical arrangement of rooms.

• Design of foundations such that they offer no impact surfaces for seismic forces, i.e. avoidance of different heights of strip foundations, no stepping of foundations on slopes. In smaller buildings: reinforced, sufficiently dimensioned slab foundation, preferably with a vertical strip along the edge, provides highest earthquake resistance. Reinforcement, slab thickness and concrete quality have to be based on structural calculations. For larger buildings it is essential to involve an experienced structural engineer.

• In the case of small buildings, light construction, in order to avoid major damage by falling debris, as well as strong connections between building components. At corners (and also around larger openings) installation of sufficiently dimensioned reinforced concrete or timber elements. A continuous ring beam above the doors and windows, and firmly fixed to the walls and corner posts is absolutely essential.

• It is also essential to involve an experienced structural engineer in the case of larger buildings (two–storeyed and higher). Projections (both horizontal and vertical) should be avoided, unavoidable projections have to be especially well fixed to the main structure.

• Windows and doors should not be placed at corners of buildings (as they reduce the building's stability and thus represent an earthquake hazard). In the case of glass breakage, it is easier and cheaper to replace smaller panes.

• Water tanks on the roof have to be especially well constructed, in order to avoid collapse during an earthquake. Better: free–standing water tanks with especially strong supporting structure.

• Regular control of the strength of structurally important building components and connections (because of the danger of weakening of material due to corrosion, termite attack, decay, etc.).

6.6.2 Hurricanes

• Avoidance of constructions on exposed sites without protective vegetation or dense building clusters, avoidance of flood prone locations (lowlands, vicinity of rivers).

• Roof slopes at least 30°, to reduce suction forces (suction is highest at 10°). Strong connections of all roof components to the roof structure, but danger of rusting of all iron parts must be taken into consideration.

• Avoidance of large roof overhangs and projections, because of danger of lift–off. On the other hand, heavy rains may make large overhangs necessary. Therefore, predetermined breaking points along the line between roof and wall can be a solution.

• Strong wind bracing in roof and walls, otherwise principally the same structural precautionary measures as for earthquakes.

• Wind protection through vegetation, but also precautions to be taken, so that trees cannot fall on the house.

6.6.3 Fire

• The use of fire resisting materials should be first priority.

• Chemical treatment of building parts, but only as emergency solution, because regular renewal is necessary and washed out impregnating chemicals can be toxic.

• Provision of fire fighting equipment and reservoirs for adequate water supplies.

6.6.4 Solar radiation, intense heat

• Shading by means of roof overhangs or individual elements above or in front of windows.

• Ideally, complete shading of facade, to avoid overheating. Alternatively the outer walls can be double–layered with a naturally ventilated air cavity (i.e. with openings above and below) – thereby enabling the heat that penetrates the outer skin to be dissipated by the natural ventilation in the cavity, thus preventing the inner layer from heating up. A reflective treatment of the façade can keep out most of the heat, while an aluminium foil covering the outer surface of the inner layer provides an additional barrier against heat penetration into the building.

• In hot dry areas, thick, heat retaining outer walls prevent the quick penetration of solar heat. They should be dimensioned such that the heat reaches the interior in the evening, when the air temperature falls below the comfort level – in this way, comfortable room temperatures are achieved day and night without technical means (air–conditioners, heaters). A suitable wall thickness cannot be recommended as it depends on the heat retaining features of the wall construction material, the construction system, the surface texture and colour, as well as on the prevailing day and night temperatures. With the corresponding information, a building physicist can calculate the required wall thickness.

• Vegetation can provide shade and minimise glare. Especially in hot dry areas, avoidance of light coloured, smooth ground cover (glare and heat reflection).

6.6.5 Extreme cold and snow

• Foundations must be below frost level, otherwise there is a danger of building components being lifted up when ice develops.

• The complete outer skin (wall and roof) must be clad by a thick heat insulating layer, in order to prevent the loss of heat from inside the building. As far as possible, the heat retaining wall should be on the inner side, so that the heat stored in it can be returned to the interior. The heat insulation must be protected externally against moisture and mechanical damage (e.g. by a layer of plaster, wooden cladding, etc.).

• The roof construction must take the expected snow loads into consideration, good drainage must ensure the quick removal of melting snow and ice.

• The windows should be double glazed, doors and windows must close tightly in order to prevent heat loss. They must, however, able to be opened so that the humidity that develops inside is allowed to escape (important to prevent the development of fungus and rot). Wind

traps should be designed at entrances.

• Sufficient heating facilities (depending on availability, using oil, gas, coal, electricity) have to be incorporated in the design, corresponding spaces for reserve supplies (oil, coal, firewood), chimneys/exhaust pipes (oil, gas coal), or sufficient electricity must be provided.

6.6.6 Rain

• Avoidance of flood prone locations (lowlands, vicinity of rivers).

• Sloping roofs, roof overhangs sufficient to protect windows and outer doors.

• Since tropical rains are particularly heavy, sound proofing of the roof is important, e.g. by fixing insulating panels directly below the roof elements, by an air space between the ceiling and roof, by fixing felt or rubber washers at connection points, and so on.

• Avoidance of internal drainage and roof valleys, as gutters can get blocked by leaves and dirt and prevent drainage of water. Site drainage must function particularly well.

• Floors must be higher than the outdoor area in order to prevent water from entering the building.

• Recommendation: dark paint at plinth level, at least 30 cm high (above outdoor ground surface), in order to avoid ugly stains of splashing water.

6.6.7 Sand

• Smooth outer surfaces of buildings, no horizontal projections or recesses, in order to avoid sand deposits.

• Protective walls up to or window openings above 1.60 m, since wind carried sand rarely reaches higher levels. Dust, on the other hand, cannot be excluded.

• Soft ground surfaces close to the house, as well as bushes and trees, in order to check wind carried sand.

6.6.8 Termites

• Use of termite resistant building materials (only resistant timber or no timber at all).

• Impregnation of wooden parts, but beware of exposed surfaces (danger of poisoning through direct contact). Preferably only structurally important parts should be impregnated, which are subsequently concealed by other materials or by a non–toxic paint.

• Metal termite shields fixed at all places accessible from the ground – e.g. along the top edge of the plinth – actually mainly for inspections, so that the development of termite tunnels is quickly identified and protective measures can be implemented. Impregnation of the ground around the house is practiced occasionally, but is not advisable, because of the health hazards to humans and domestic animals.

6.6.9 Fungus

• Maintenance of dry conditions by means of ventilation and keeping a good distance from ground moisture.

• Use of dry, fungus–proof timber or building materials that do not absorb moisture.

• Protective paints, e.g. milk of cement or lime, non–oil–based glue paint, using a fungicide as primer.

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8. GTZ building projects within the framework of DEA

Year	Project	Client	Contract sum in million euros
1992–1993		AA	25.565

	Refugee settlements, building rehabilitation and extension as humanitarian aid in Croatia		
1993–1996	Construction of refugee settlements in Azerbaijan	ECHO	16.600
1996–2003	Rehabilitation of schools and housing for returning refugees in Jaffna, Sri Lanka	BMZ	3.684
1995–1997	Rehabilitation of housing and schools in Tuzla Canton, Bosnia & Herzegovina	AA	6.698
1997–1998	Restoration and reconstruction of war damaged buildings in the Fizuli Region in Azerbaijan	ECHO	2.090
1998	Construction of new housing for refugees returning to Gradacac/Modrica, Bosnia & Herzegovina	Düren City, EU, BMZ	1.253
1998	Reconstruction after earthquake in Southern Turkey	BMZ	1.030
1998–1999	Provision of accommodations for refugees from Kosovo in Albania	BMZ	2.556
1999	Wiederaufbaumaßnahmen in Freetown/Sierra Leone	BMZ	0.691
1999–2000	Emergency aid and reconstruction measures after earthquake in Colombia	BMZ	1.074
1999–2000	Housing and social facilities for earthquake victims in Western Turkey	BMZ	12.017
2000–2001	Rehabilitation of schools after floods in Cambodia	BMZ	0.375
2000–2001	Provision of housing for Afghan refugees in Pakistan	BMZ	0.740
2000	Reconstruction measures after floods in Venezuela	BMZ	1.020
2001	Reconstruction of housing after earthquake in Peru	BMZ	1.020
2001 –2002	Reconstruction of housing after earthquake in El Salvador	BMZ	1.834
2001 –2003	Reconstruction of a school after earthquake n Gujarat/India	Bild–Hilft e.V.	0.880
2002–2003	Emergency aid and reconstruction measures in Afghanistan	BMZ	7.050
2002	Support of the Emergency Loya Jirga in Kabul, Afghanistan	UNDP	8.100

9. Annexes

IMPORTANT NOTE

This section contains a series of documents concerning building measures and contracts, which the GTZ has developed according to its own very specific requirements over many years, and which it applies in its projects. They make no claims to being universally applicable. They have been included in these Guidelines to provide information and examples for third parties involved in the implementation of building measures within the framework of development cooperation, emergency aid and especially in the planning and execution of building projects. All documents have to be analysed very carefully in each individual case and have to be adapted to the specific conditions and requirements of the respective countries and business partners. The contract partners are solely responsible for the use of the documents.

The GTZ accepts no responsibilty for any problems or inconsistencies that may arise by the use of the documents presented here, either unchanged or in modified form.

Most of the documents were prepared in English. French and Spanish versions also exist at GTZ. The authors

9.1 Questionnaire for Architects/Engineers and Contractors (QUARCENG)

1.	name of firm, full address, international telephone and telefax numbers:

2.	structure of firm:	
	legal form:	year of formation:
	proprietor:	original capital:

3.	bank references:	

4.	technical equipment:

5.	annual turnover:		in: *currency*		
	1999	2000	2001	2002	2003

6.	permanent personnel:		
	number	field of activity:	qualification:

7.	reference projects **completed** during the last five years:				
	name of project:	type of project:	remuneration/fee	period of construction	client

	reference projects commenced and still under construction:				
	name of project:	type of project:	remuneration /fee	period of construction	client

8.	membership of association(s)

9.	the undersigned declare(s) that the statements made in this questionnaire are both correct and complete.	
	.....	.....
	place and date	legal seal and signature(s)

10.	enclosures and/or remarks:

9.2 Bidding Conditions for Consultants/Architects (BIARCENG)

1. THE BID

For the purpose of a comprehensive evaluation the bid should contain the following information:

1.1 Details of the design concept and/or working concept including information about the construction method envisaged as well as

(1) Estimated time schedules for preparation of the planning, compiling specifications and Bill of Quantities, tendering period, and the execution of the construction phase.

(2) Details of the resident engineer(s) proposed for this/these position(s) including his/their curriculum vitae.

(3) Brief listing of reference projects completed.

1.2 Statement about the earliest possible date for commencing the works.

1.3 The completed questionnaire (QUARCENG).

2. COST OF PREPARING THE BID

The bid with all enclosures shall become the property of the General Contractor upon delivery.

No remuneration shall be granted for the preparation of the bid and all the documents attached thereto.

3. ADDRESS OF BID

Bids must be delivered in a separate, closed envelope, lettered

Project No..... **"BID FOR .....**"

to (Address of General Contractor) **c/o** .....

4. Any modification to or withdrawal of the bid must be notified in writing to the above mentioned address prior to the closing date for submission of bids.

5. Agreements with third parties in restraint of competition to the disadvantage of the General Contractor are not admissible and shall result to exclusion of such bids.

9.3 Contract for Architectural Consult Consulting Services (CONTRARC)

The

Address of the General Contractor

.....

.....

.....

– hereinafter referred to as the **"Employer"** –

Date .....

reference to in all correspondence:

Contract No.:

.....

Project No.:

.....

and

.....

.....

.....

– hereinafter referred to as the **"Consultant"** –

herewith enter into the following Contract for the Project

.....

Country:

.....

1. Purpose of Contract

(e.g. contribution of the construction works towards the goal of the project)
.....
.....
.....

2. Scope of Services

In order to achieve this purpose, the Consultant shall perform services according to the stipulations in the subsequent clauses for the construction of:

(number and type of building(s), listing of the space requirements, type of construction, etc; if applicable, reference shall be made to the project information in the Annex)

3. Three Phases of Contract

3.1 By signing this contract, the Employer commissions the Consultant with the services pursuant to Section 4 (Phase 1), only.

3.2 If the planning work shall be continued, the Employer has an option to commission the Consultant with the services specified in Section 5 (Phase 2).

3.3 In case of execution of the construction work, the Employer has a further option to commission the Consultant with the task of site supervision described under Section 6 (Phase 3).

3.4 The Employer reserves the right to limit the assignment to individual services of Phase 2 or 3.

3.5 The assignments pursuant to Sub−Sections 3.2. and 3.3 shall be made in writing.

3.6 The Consultant shall be bound to provide the relevant services if the Employer exercises an option within 12 months after acceptance of the results of the previous phase. On the other hand, the Consultant shall not have a legal claim to the assignment of services of Phase 2 or 3. The Consultant cannot derive any increase in remuneration from the limitation of assignment to individual services of Phase 2 or 3. Nor shall the Consultant have the right for a claim for remuneration of any phase or individual service with which he has not been commissioned.

4. Phase 1 (Preparation of the Documents for Building Permission)

Within this phase the Consultant shall execute the following services:

4.1 Establishing whether cadastral maps, surveyors' plans, soil investigations or other documents of the building site exist. If not, or if the existing documents do not suffice, procurement of appropriate tenders and assignment after prior written approval by the Employer. Costs arising from this procurement shall be paid as reimbursable expenditures in addition to the remuneration as laid out in Section 9.

4.2 Sketching of a preliminary design and presenting the same to the Employer, which must be approved by the Employer prior to proceeding.

4.3 Preparation of a site layout plan on a scale of 1:500 or 1:200, including outdoor facilities.

4.4 Preparation of preliminary design plans for the buildings and outdoor facilities on a scale to be agreed with the Employer of 1:200 or 1:100.

4.5 Preparation of the explanatory report for the buildings and outdoor facilities in accordance with EXPLARER

4.6 Preparation of a cost estimate for the buildings and outdoor facilities (using blank specimen of COSTESTM) and calculation of areas (gross floorplan area according to customary local standard).

4.7 Drawing up of a preliminary structural analysis.

4.8 Drawing up of preliminary plans of the technical installations, such as for sanitary, electrical, and possibly telecommunicative and/or mechanical purposes, including:

(1) Rough estimate of technical requirements and output values.
(2) Contribution to the explanatory report pursuant to EXPLARER
(3) Cost estimate according to empirical values pursuant to COSTESTM.

4.9 Obtaining of building permission and other permits required for the execution of the works in the recipient country.

5. Phase 2 (Preparation of the Construction Documents)

Within this phase the Consultant shall execute the following services:

5.1 Architectural design planning:

5.1.1 Preparation of the final design plans for construction:

(1) layout plan on a scale of 1:500 or 1:200,

(2) floor–plans, sections and elevations for all buildings/structures on a scale of 1:100,

(3) plans for the outdoor facilities on a suitable scale.

5.1.2 Preparation of the working drawings on a scale of 1:50, important details on a scale of 1:10, 1:5 or 1:1 and all outdoor facilities on a suitable scale.

5.2 Structural planning:

(1) elaboration of the structural analysis suitable for review and approval,

(2) preparation of positional drawings for the structure,

(3) preparation of formwork drawings as supplement to the working drawings pursuant to Section 5.1.2,

(4) drawings of construction elements with instructions for installing the same (e.g. reinforcement plans, plans for structural steelworks and woodwork),

(5) compilation of detailed steel and/or other lists of structural materials.

5.3 Planning of mechanical, electrical and sanitary and/or other installations:

(1) Determination of technical requirements and output values.
(2) Dimensioning of all equipment and parts of installations.
(3) Pertaining drawings on a scale of 1:100.
(4) Determination of pipe channels and openings in walls, ceilings and floors.
(5) Working and detail drawings on a scale to be agreed with the Employer.

5.4 Services for the award of construction contract according to the Employer’s instructions:

(1) Compilation of the specifications with technical preface.

(2) Calculation of quantities and preparation of the Bill of Quantities.

(3) Calculation of costs of the buildings and outdoor facilities based on the Bill of Quantities.

(4) Adaptation of the form and content of the Tender Documents for Contractors, specified by the Employer, to the special conditions of the building site and building(s) to be built.

(5) Conducting of pre−qualification procedures for contractors, including their evaluation.

(6) Proposal of contractors to be invited to tender (preparation of short list).

(7) Submission of complete tender documents for review and approval to the Employer.

(8) Conducting of the tendering action according to Tender Conditions, if instructed to do so by the Employer.

(9) Evaluation of the Tenders received, including elaboration of proposal for the award of contract.

(10) Conducting of or participating in contract negotiations, if requested by the Employer.

6. Phase 3 (Site Supervision)

6.1 The Consultant shall assume all engineering functions and duties in accordance with the contractual provisions made between the Employer and the building contractor *which are based on the FIDIC Terms of Contract*[1]*.*

[1] delete if not applicable

Without claiming to be complete, the functions and duties are as follows:

6.1.1 Technical Services:

(1) Due and proper supervision of the execution of the construction work and mechanical, electrical and all other installation works to ensure that they conform with the specifications and drawings, the recognized engineering principles and all applicable regulations.

(2) Provide technical advice and necessary support to all personnel assigned to the project.

(3) Examination and approval or rejection of materials for construction work supplied by the contractor(s).

(4) Amending of the working drawings in accordance with the actual execution of the works (see paragraph 7.2.3 (1)).

(5) Technical inspection of the execution of the structure to ensure that it conforms with the approved structural documents.

(6) Technical inspection of auxiliary construction requirements; e.g. scaffolding, craneways, excavation supports, etc.

(7) Inspection of concrete production and processing at the building site and evaluation of quality controls.

(8) Follow−up of the working progress schedule provided by the building contractor or, if not available, own compilation of a suitable programme (e.g. bar chart) which has to be agreed to and signed by the contractor.

(9) Keeping of a construction diary.

(10) Joint measurements of the work in place with the building contractor. This includes the preparation of special measurement records for work that cannot be measured after the construction work has been completed. They shall be confirmed in writing by the building contractor and the Resident Engineer (Not applicable for lump sum contracts).

(11) Upon special request of the Employer, intermediate acceptance of construction work (e.g. acceptance of the rough structure).

(12) Preparation of and participation in taking−over procedures by the Employer; independent taking−over, if instructed to do so by the Employer (TAKGOVER).

(13) Participation in the handing−over of the completed project, compilation and handing over of the necessary documents; independent handing over and drawing up of the handing−over certificate to the project executing agency/beneficiary, if instructed to do so by the Employer (HNDGOVER).

(14) Inspections during the Contractor's defects liability period and supervision of rectification of any faults and defects that may occur.

6.1.2 Commercial Services connected with the construction

(1) Checking and, if necessary, correction of invoices, reports, lists, etc. of the building contractor(s) within the periods stipulated in the contract between the Employer and the contractor(s). Calculations of quantities, accounting files and cost calculations shall be checked for technical and arithmetical accuracy and certified by date and signature. In order to show that this has been done, the Consultant shall tick all correct values and amounts reported.

(2) Examination of new prices for additional or amended services to ensure that they are in line with the cost estimate of the original tender on which the Contract is based as well as the current local situation.

6.2 Assignment of Personnel for Site Supervision

6.2.1 In order to supervise the construction work, the Consultant shall assign during the period from approx.....to.....the following personnel:

1) Resident Engineer: .....

2) .....

3) .....

Any change of assigned personnel require(s) prior written approval of the Employer.

6.2.2 The beginning and the end of the period of assignment shall be stipulated in writing when the Consultant is commissioned with Phase 3 according to Sub−Section 3.3.

6.3 Reports

6.3.1 The Consultant shall submit

• monthly reports on the progress of construction in accordance with PROGREP, including a progress diagram, photographs and other relevant data as well as details on completed work, percentage of completion, basic climatic conditions and average number of workers on site, special incidents, work forecast, etc.,

• a final report two months after completion and taking−over of the construction works, comprising:

(1) a description of the progress of the entire project from planning to taking−over or handing−over, comments about the construction period, listing major problems encountered during construction and how these were solved; and

(2) an overview and tabulation of the total costs compared with the calculation according to COSTESTM.

6.3.2 Special reports shall be forwarded to the Employer without delay in case of important incidents or circumstances that may occur. Each such report shall include in particular events and circumstances that give rise or may give cause to claims against the Building Contractor(s) commissioned with the execution of the construction work.

6.3.3 All reports shall be submitted two the Employer in duplicate in English language.

7. Documentation

7.1 All documents shall clearly indicate that they were produced on behalf of the Employer. The title block of the drawings shall be approved by the Employer. All documents shall be drawn up in English language.

7.2 The Consultant shall provide the following number of copies:

7.2.1 Phase 1:

Documents for Building Permission pursuant to Section 4	3 copies

7.2.2 Phase 2:

(1) Final design plans pursuant to Section 5.1.1	8 copies
(2) Working drawings, structural analysis, positional drawings, formwork and reinforcement plans, lists and installation drawings pursuant to Sections 5.1.2, 5.2 and 5.3	4 copies
(3) Specifications and Bill of Quantities pursuant to Sections 5.4 (1) and (2)	12 copies
(4) Reproducibles of final design and working drawings	.....sets

7.2.3 Phase 3:

(1) As−built drawings (copies folded to DIN A 4 size) for all buildings and outdoor facilities, including structures and installations.	3 copies
(2) Photographs of all buildings/installations after completion.	3 copies
(3) Updating of the calculations of areas in accordance with the actual execution of construction work.	3 copies

8. Deadlines

The following deadlines shall apply for the services performed by the Consultant:

(1) First submission of the preliminary design pursuant to Sub−Section 4.2:
..... weeks after signing the contract

(2) Preparation of all Documents for Building Permission pursuant to Section 4:
..... weeks after approval of the first preliminary design

(3) Preparation of the Construction Documents pursuant to Section 5:
..... weeks after being commissioned pursuant to Section 3.2.

(4) Completion and submission of the final report pursuant to Sub–Section 6.3.1:
..... weeks after acceptance and taking over of the works

9. Remuneration

9.1 The Consultant shall be entitled to the following remuneration:

9.1.1 Phase 1 the lump sum of .....

9.1.2 Phase 2 the lump sum of .....

9.1.3 Phase 3

(1) For a full time Resident Engineer for overall site supervision during the construction period of approximately.....months the lump sum of .....

(ALTERNATIVE)

(1) For a part time Resident Engineer (.....%) for overall site supervision during the construction period of approximately months the lump sum of .....

(2) For part time special supervision (e.g. structural, sanitary, electr., mechanic, etc.), as required during the contract period the lump sum of .....

(3) For the Documentation of Phase 3 (Section 7.2.3) and the Final Report pursuant to Section 6.3.1 the lump sum of .....

Sub Total for Phase 3 .....

9.1.4 Total Remuneration .....

(in words: .....)

9.2 All lump sums and expert/month–rates as stated above are fixed prices and shall include all costs incurring in connection with the performance of these services.

9.3 The Consultant shall invoice turnover tax if and as prescribed by law; the Employer will refund the amount in addition to the remuneration.

Amount of turnover tax *(if applicable):* .....

10. Terms of Payment

Payment of the remuneration shall be made in ..... *(currency)* upon receipt of the Consultant's invoice in duplicate as follows:

10.1 Phase 1: 95% after acceptance of the respective services by the Employer.

10.2 Phase 2: 95% after acceptance of the respective services by the Employer.

10.3 Phase 3:

10.3.1 80 % of the remuneration stipulated in Sub–Sections 9.1.3 (1) and (2) in monthly payments of.....*(currency/amount)* upon presentation of an invoice in duplicate,

starting one month after the commencement of the construction works.

10.3.2 15 % of the remuneration stipulated in Sub−Section 9.1.3 (1) and (2) after acceptance of the construction work and presentation of the Taking−Over Certificate (TAKGOVER).

10.3.3 100% of the remuneration stipulated in Sub−Section 9.1.3 (3) after acceptance of the services by the Employer.

10.4 The 5 % remaining under Sub−Sections 10.1 to 10.3.2 above shall be remitted upon expiry of the warranty period. The amount retained for this period shall be disbursed following taking−over without defects upon provision of a guarantee by a bank accepted by the Employer in accordance with the specimen enclosed (GARANTDL).

11. Statute of Limitation of Claims of the Consultant

The claims of the Consultant arising from the Contract shall become statute−barred unless they are asserted vis−a−vis the Employer in writing within 6 months following the end of the contractually agreed period of assignment or after acceptance of the work.

12. Duty of Care and Exercise of Authority

12.1 The Consultant shall exercise reasonable skill, care and diligence in the performance of his obligations under the Contract and shall observe all local regulations in force.

12.2 Regarding any claims of the Employer against the Building Contractor or any third party, the Consultant shall take the necessary measures to protect rights provisionally if and to the extent that the Employer cannot be informed in good time.

12.3 Where the Services include the exercise of powers or performance of duties authorised or required by the terms of the contract between the Employer and the Building Contractor, the Consultant shall

- act in accordance with this contract and the contract between the Employer and the Building Contractor,
- if authorized to certify, decide or exercise discretion, do so fairly between the Employer and the Building Contractor not as an arbitrator but as an independent professional acts by his skill and judgement.

13. Warranty Period

The warranty period of the services of the Consultant shall be two years, beginning with the taking−over of the construction works, but not later than six years after acceptance of the services in question.

14. Insurance for Liability

14.1 The Consultant undertakes to take out an insurance for liability for damage caused negligently by the Consultant, his staff and other persons he engages for or in connection with the implementation of the Contract to the Employer, the recipient of the works in the country of assignment or to third parties.

14.2 The insurance sum shall be as customary in the country where the works are to be executed.

14.3 Upon request, the Consultant shall prove to the Employer his insurance coverage.

15. Copyright

The Consultant retains copyright of all documents prepared by him. The Employer shall be entitled to use them or copy them only for the Works and the purpose for which they are intended, and need not obtain the

Consultant's permission to copy for such use.

16. Conflict of Interest

Unless otherwise agreed in writing by the Employer, the Consultant and his personnel shall have no interest in nor receive remuneration in connection with the Project except as provided for in this Contract. The Consultant shall not engage in any activity which might conflict with the interest of the Employer under this Contract.

17. Applicable Law

German Law shall apply to this contract.

18. Arbitration

All disputes arising in connection with the present Contract shall be finally settled under the Rules of Conciliation and Arbitration of the International Chamber of Commerce by one or more arbitrators appointed in accordance with the said rules.

19. Modifications and Alterations

Any modifications, additions and/or deletions to this contract as well as all fundamental communication must be made in writing only.

20. Termination of the Contract

20.1 The Employer may terminate the Contract at any time either wholly or in respect of individual parts of the work or the services.

20.2 Should the Employer terminate the Contract for a reason for which the Consultant is not answerable, the Consultant shall be entitled to demand the agreed sum in remuneration. However, he shall agree to non–incurred expenses or avoidable expenditure being deducted from the sum otherwise due. Salaries and ancillary costs in respect of salaries for the experts of the Consultant assigned to the project shall as a rule be deemed not incurred if they would have become due more than 3 months after the date on which termination of the Contract took effect. The Consultant shall bear the burden of proof for exceptions to this rule.

20.3 If the Employer terminates the Contract for a reason for which the Consultant or its experts are answerable, remuneration shall be paid only for the works already executed, provided that the Employer can utilize them, in accordance with the Contract prices, or, that part actually executed shall be remunerated as a proportion of the total contractual works on the basis of the Contract prices. Those works executed which the Employer cannot utilize shall be returned to the Consultant at the latter's expense. Insofar as the contractual work comprises the rendering of services, the services rendered up to the date of termination shall be deemed utilizable works. In no case shall there be a claim to more than the contractual amount.

20.4 The Consultant shall be deemed answerable for the reason for termination if the Employer terminates because bankruptcy proceedings have been initiated against the assets of the Consultant, or because judicial composition proceedings have been initiated against the Consultant, or it has discontinued its payments not only on a temporary basis, thus jeopardizing the proper execution of the Contract.

20.5 Other legal rights and claims of the Employer and Consultant shall remain unaffected.

21. Partial Invalidity

The invalidity of one or several provisions of this Contract shall not affect the validity of the remaining provisions. Invalid provisions shall be substituted by such provisions as are closest to the economic purpose aimed at by both contracting parties.

22. Copies

This Contract shall be drawn up in duplicate and each party shall receive one copy thereof.

..... (place) ..... (date)

....

THE EMPLOYER THE CONSULTANT

List of Annexes:

BIARCENG	Bidding Conditions for Consultants/Architects
_____	Project Information (if applicable):
	(Information about location and condition of site, type and number of buildings/installations planned, space requirements, exterior facilities, landscaping)
EXPLAREP	Guide for the Preparation of the Explanatory Report
COSTESTM	Form of Cost Estimate
GARANTAP	Specimen of Advance Payment Guarantee (if applicable)
GARANTDL	Specimen of Bank Guarantee for the Defects Liability Period
PROGREP	Specimen of Construction Progress Report
TAKGOVER	Form of Certificate of Taking–Over
HNDGOVER	Form of Handing–Over Certificate
QUARCENG	Questionnaire for Architects/Engineers

the following Annexes will be handed over with the award of the Contract:

_____	Copy of Project Agreement (if applicable)
INVTDFID	Form of Invitation to Tender (FIDIC Contracts)
TENDRFID	Form of Tender (with Appendix) for Contractors (FIDIC Contracts)
TENDRCON	Tender Conditions for Contractors (FIDIC Contracts)
FIDIC–P2	Conditions of Particular Application (FIDIC II)
GARANTPF	Specimen of Performance Guarantee (if applicable)

ALTERNATIVE to FIDIC–Contracts (instead of the above 6 annexes):

INVTDLMB	Form of Invitation to Tender for Contractors (for Contracts of Construction Works on Lump sum or Measurement Basis)
CONCTRMB	Contract for Construction Works on Measurement Basis,
CONCTRLB	Contract for Construction Works on Lump sum Basis *(Alternative to CONCTRMB)*

9.4a Form of Cost Estimate (COSTESTM)

COST ESTIMATE
for

Budgeting Purposes
– Construction –

Supplement No.: ..... dated: .....

Project No.: .....
Project Name: .....

Prepared by:	
.....	.....
(Architect/Consultant)	(place, date, signature)

Reviewed and approved:	
.....	.....
(General Contractor)	(place, date, signature)

Numbers of the subtotals correspond to items of the Explanatory Report (EXPLAREP)

Estimated Cost Summary	**Euro**
Subtotal 1: Construction site	.....
Subtotal 2: Site Development	.....
Description of buildings/parts of buildings	Euro
	.....
	.....
	.....
	.....
	.....
_____	_____
Subtotal 3: Buildings	.....
Subtotal 4: Technical Installations/Equipment	.....
Subtotal 5: Exterior Facilities	.....
Subtotal 6: Additional Measures	.....
Subtotal 7: Architect's/Consultant's Fee	.....
Contingencies	.....
Total of Cost Summary*/of Supplement N°...: *	.....

* Total costs as per original cost estimate	.....

Total costs as per	Supplement N° 1	.....
	Supplement N° 2	.....
	Supplement N° 3	.....
Grand Total		**.....**

* *Delete which is not applicable*

NOTE: The calculations of the cost estimates listed above with the calculations of the gross floor areas are to be attached for review and approval as enclosure to this COST ESTIMATE

9.4b Explanatory Report (EXPLAREP)

Guide for the Preparation of the
EXPLANATORY REPORT

For the *(insert name of construction project)* PN:.....

.....

.....

0. Planning

(1) General information (e.g. design layout, compliance with functional design)
(2) Compliance with space requirements
(3) Requirements under public law (compliance with local rules and regulations)
(4) Possibilities for future extension

1. Construction Site

(1) Number of parking spaces for vehicles

(2) Evaluation of the location in or with respect to the next town/village

(3) Information regarding the development of the construction site, possible need for major earth movements

(4) Evaluation of the lots/buildings adjacent to the construction site *)

(5) Bearing capacity of the soil, results of soil investigations

2. Site Development, Technical Infrastructure

(1) Access roads; transportation facilities

(2) Water supply

(3) Sewage and waste water disposal

(4) Supply of electricity

*) Photographs shall be enclosed, if considered relevant

3. Buildings/Parts of Buildings

(1) Foundations
(2) Walls, exterior and interior
(3) Ceilings
(4) Stairs and landings
(5) Roof, gutters, downpipes
(6) Chimneys, air supply/smoke exit ducts
(7) Sun protection (louvres, screens, Venetian blinds)
(8) Ceiling and wall finish
(9) Floor finish
(10) Facade finish
(11) Exterior and interior doors
(12) Windows, dome lights, window grills
(13) Energy conservation measures
(14) Fire prevention measures

4.1 Technical Installations and Equipment

(1) Water and waste water, supply, treatment, and disposal
(2) Air conditioning, mechanical ventilation, air ducts
(3) Gas and liquids
(4) Electricity, distribution within the building(s)
(5) Means of telecommunications
(6) Heating system
(7) Lightning protection

4.2 Special Features/Elements

(1) Special structures
(2) Special installations
(3) Special technical equipment
(4) Special fixed features
(5) Elements of art involving artistic design

5. Exterior Facilities

(1) Fences, walls
(2) Drainage and sewage disposal
(3) Electricity supply system
(4) Special–purpose installations (transformer station)
(5) Roads, parking areas, walkways
(6) Green areas
(7) Other outdoor features (playgrounds)

6. Additional Measures

State if provisions are foreseen for construction work during rainy seasons or snow and frost periods respectively

9.5 Form of Invitation to Tender for Construction works (recommended for contracts value up to 150,000 Euro) (INVTD150)

> *Employer's I Consultant's letterhead* <

Date:.....
Negotiated Procedure for

Project No.:.....

Submission/Opening Date:
in .....
on ..... (day)
the ..... (date)
at ..... (time)

.....
.....
(Contractors address)

INVITATION TO TENDER
(Building Construction Works)

1. Subject :.....

(insert name of project)

Dear Sir or Madam,

The.....***(Name I Address of Employer)***.....
.....
hereinafter referred to as "The Employer",
intends to.....
.....
.....

(insert brief description of building(s)/installation(s))

The execution of the Works will be performed within the frame of the Technical Cooperation between.....*(Donor Country)*.....and the .....
(recipient country).

It is intended to award the contract for the Works as detailed in the attached Drawings, Specifications and Bill of Quantities.

2. The Tender Documents consist of

2.1 Specimen of Contract for Construction Works on Measurement/Lump sum* Basis (in duplicate)

2.2 Specifications with Bill of Quantities – in duplicate

2.3 .... Drawings No....., dated.....

.... Drawings No.....dated.....

.... Drawings No.....dated.....

2.4* * Specimen of Advance Payment Bank Guarantee

2.5** Specimen of Defects Liability Guarantee

3. Further information, regarding the intended project, may be obtained.at

.....
(insert detailed address)

during normal office hours.

4. In the event that the Bill of Quantities provides for a division of the Works into separate lots, the Employer reserves the right to award separate contracts for those lots.

5. If you are willing to execute the Works you are requested to send or hand in the enclosed Contract for Construction Works on Measurement/Lump sum* Basis together with all annexes, exclusively prepared in the English language, completed and signed by a duly authorized person, in a sealed envelope, not later than stated as submission date on the front page to/at

.....

* Delete inapplicable alternative
** Delete inapplicable item

The Contract for Construction Works on Measurement/Lump sum* Basis together with all annexes shall be submitted in double packing. The inner packing shall be sealed and labelled as follows:

TENDER FOR PN: .....
PROJECT NAME: .....

The period for submission of Tender shall expire with the date and time mentioned in the letter head. Tenders may be withdrawn by letter, telex, telegraph, or fax, prior to the submission time and date.

6. The period of adjudication begins with the submission/opening date and expires on the .....(date)..... The Tenderer is bound to his Tender until this date.

7. Your confirmation of the receipt of the tender documents would be appreciated. If you are not interested in submitting a Tender, please return the enclosures blank as soon as possible.

Employer or The Authorized Representative

9.6 Form of Invitation to Tender for contracts value above 150,000 Euro (INVTDFID)

> *Employer's I Consultant's letterhead <*

Date:.....
Negotiated Procedure for
Project No.:.....

Submission/Opening Date:
in .....
on ..... (day)
the ..... (date)
at ..... (time)

.....
.....
(Contractors address)

INVITATION TO TENDER

1. Subject :.....

(insert name of project)

Dear Sir or Madam,

The.....***(Name I Address of Employer)***.....
.....
hereinafter referred to as “The Employer”,
intends to.....
.....
.....

(insert brief description of building(s)/installation(s))

The execution of the Works will be performed within the frame of the Technical Cooperation between.....*(Donor Country)*.....and the
.....
(recipient country).

It is intended to award the contract for the Works as detailed in the attached Drawings, Specifications and Bill of Quantities.

2. The Tender Documents consist of

2.1 Tender Conditions for Contractors

2.2 Tender with Appendix – in duplicate

2.3 Specifications with Bill of Quantities – in duplicate

2.4 .... Drawings No.....dated.....

.... Drawings No....., dated.....

.... Drawings No....., dated.....

2.5 Part II – Conditions of Particular Application (Supplement to Part I of the International Conditions of Contract for Works of Civil Engineering Construction – FIDIC, fourth edition 1987, reprinted 1992 with amendments)

2.6 Specimen of Advance Payment Bank Guarantee

2.7 Specimen of Performance Guarantee

2.8 Specimen of Defects Liability Guarantee

3. The Contract for the Works is based on the “Conditions of Contract for Works of Civil Engineering Construction” FIDIC – Part I, General Conditions, prepared by the Fédération Internationale des

Ingénieurs–Conseils, fourth edition 1987, reprinted 1992 with amendments, which are not enclosed but may be examined at

.....
(insert detailed address)

during normal office hours. Further information may also be obtained.

4. In the event that the Bill of Quantities provides for a division of the Works into separate lots, the Employer reserves the right to award separate contracts for those lots.

5. If you are willing to execute the Works you are requested to send or hand in the enclosed Tender together with all annexes, exclusively prepared in the English language, completed and signed by a duly authorized person, in a sealed envelope, not later than stated as submission date on the front page to/at

.....

The Tender shall be submitted in double packing. The inner packing shall be sealed and labelled as follows:

TENDER FOR PN: .....
PROJECT NAME: .....

The period for submission of Tender shall expire with the date and time mentioned in the letter head. Tenders may be withdrawn by letter, telex, telegraph, or fax, prior to the submission time and date.

6. The period of adjudication begins with the submission/opening date and expires on the .....(date)..... The Tenderer is bound to his Tender until this date.

7. Your confirmation of the receipt of the tender documents would be appreciated. If you are not interested in submitting a Tender, please return the enclosures blank as soon as possible.

.....
Employer or The Engineer/Consultant

9.7 Tender Conditions for Contractors (TENDRCON)

1. GENERAL

1.1 The Tender must comply with the following conditions and instructions. Failure to do so is liable to result in the rejection of the Tender.

1.2 “Tenderer” means any person or persons, partnership, firm or company being prequalified and submitting fully priced Bill of Quantities in accordance with the Tender.

1.3 All recipients of the Tender Documents shall, whether they submit a Tender or not, treat the details of these documents as confidential.

2. TENDER DOCUMENTS

2.1 The Tender must be made out on the forms provided in the Tender Documents duly completed in ink or in print. The Bill of Quantities must be fully priced, totalled, checked arithmetically, and the grand total must be in compliance with the sum entered in the Tender. Tender and Contract Documents must be kept intact.

The Tender Documents and accompanying documents shall be signed by the Tenderer or his legally authorized representative and be returned to the address according to No. 5 of the “Invitation to Tender”.

2.2 The Tender must be accompanied by:

(a) A copy of each Circular Letter (see par.7) issued to Tenderers by the Employer or the Engineer (if applicable). Each copy of such Circular Letter must be endorsed by the Tenderer.

(b) The Form of Tender with Appendix to Tender (if applicable), and the Form of Bid Bond (if any), together with the Bill of Quantities, fully priced and summarized.

Any missing document may result in the rejection of the Tender.

2.3 Prices must be quoted for all items in the Bill of Quantities, where applicable, or a clear indication must be given that the values of the Works described under items left unpriced are allowed for elsewhere.

3. EXAMINATION OF SITE

3.1 Tenderers shall visit the site of the Works and obtain for themselves all information that may be necessary for completing their Tenders and for entering into a contract with the Employer. Tenderers shall aquaint themselves with the requirements of the contract, e.g. characteristics of the site and its surroundings, hydrological and climatic conditions.

In particular, Tenderers shall acquaint themselves with the conditions of

(a) existing access roads or other means of communication and access to the site of works, incl. police regulations concerned therewith,

(b) available land for storage, workshops, toilets, and site office(s),

(c) available connections to electricity and water for construction,

(d) the soil and subsoil to be excavated, stored or removed from site.

The availability of local labour, their quarters on site (if necessary), local materials and other local recources shall also be considered.

4. MODIFICATIONS/ADDITIONAL OFFERS

4.1 The Tender may contain only the prices and statements required in the Tender Documents and shall be signed by a duly authorized person. Any addition to, deletion or alteration of the Tender Documents may result in the rejection of the Tender.

4.2 Additional offers/proposals for modifications which, from the technical point of view, deviate from the Engineer’s Specification or such which entail a demand for other conditions of payment, execution deadlines or price reserves, shall only be admitted in connection with the submission of the base Tender.

–

Proposals for modifications and additional offers shall be made in a separate annex and must be clearly marked as such.

Modifications by the Tenderer concerning prices quoted or statements made shall be unambiguous. Samples and patterns submitted with the Tender must be clearly marked as appertaining to the Tender.

5. PRICES

5.1 All prices (unit prices, lump sum prices, settlement rates, hourly wages, bonuses) shall be stated **without** tax (turnover tax, value added tax, or alike). The amount of applicable tax shall be based on the locally valid tax rate and shall be added as the last item on the summary sheet of the Tender.

5.2 The offer of a discount based on the observance of certain payment deadlines described by the Tenderer shall be taken into account in the evaluation only if the tenderer declares that such a discount shall apply to all payments on account and the final payment, providing that the deadlines set for payments leave reasonable time for their processing.

5.3 The Employer will not be held responsable if the local bank in the recipient country converts the payments to the Contractor into local currency before crediting the same to the Contractor's account. The Contractor is not entitled to claim for any charges or fees deducted by the bank due to the exchange and/or transfer of payments.

6. AMBIGUITIES

If, in the Tenderer's opinion, the Tender Documents contain ambiguities which might influence the calculation of the prices, the Tenderer shall indicate this to the Employer by letter, telefax, telex, or telegram before submitting his Tender within 30 days after the receipt of the Tender Documents. Necessary clarification will be made by Circular Letter(s).

7. CIRCULAR LETTER

7.1 In the event that the Employer sends Circular Letters to the Tenderers during the tendering period in order to comment, clarify, or modify the Contract Documents, these Circular Letters shall become an integral part of the Contract Documents and it shall be assumed that they have been taken into account by the Tenderers in drawing up their Tender.

7.2 The Tenderer shall confirm the receipt of a Circular Letter to the Employer immediately. No Circular Letter shall be dispatched within 21 days before the submission date for the Tender, except one that confirms a due postponement of the original submission date.

8. PROHIBITED AGREEMENTS

Agreements restricting the competition are not permitted, especially arrangements and negotiations with other Tenderers in respect of

– submitting or not submitting a tender,

– the prices to be demanded and profit rates,

– binding arrangements for other compensation,

– processing cost margins and other price components,

– terms of payment and delivery and other conditions of contract insofar as they influence the prices directly or indirectly,

– indemnity or compensation payments for non–participation or limited participation in the competition,

– and profit–sharing.

9. SUBCONTRACTORS

If parts of the Works are intended to be executed by subcontractor(s), the Tenderer shall indicate nature and scope of such parts of the works and state name and address of the subcontractor(s) considered.

10. JOINT VENTURES

Tenders submitted by Joint Ventures or other Bidding Combinations shall be accepted only if the following information is provided with the Tender

(a) A list of the members of the Joint Venture/Bidding Combination designating the duly authorized representative(s).

(b) A declaration, signed by duly authorized representatives of all members, stating that the duly authorized representatives shall represent the members specified in the list in a legally binding manner vis–a–vis the Employer, and that all members are jointly and severally liable for the performance of the Contract with the Employer.

11. SUBMISSION OF TENDER

11.1 The Tender shall be submitted to the address stated in and prior to the time and date specified in the Invitation to Tender.

11.2 Tenders received after the date and time of submission will not be considered.

12. OPENING OF TENDERS

12.1 Tenderers shall be free to attend the opening session of the Tenders.

12.2 The session shall be held for opening and reading out the Tenders. Until this session all Tenders received shall be kept under lock and key with the envelopes unopened and marked with the date of receipt only. For the Opening Session the following procedure shall be observed and laid down in the minutes of meeting, stating place, date and time of the opening:

(a) The chairman of proceedings shall establish whether the seals of the envelopes are intact.

(b) Samples and patterns submitted with any Tender shall be on hand and duly marked.

(c) The Tenders shall be opened one after another and all major parts marked. The names and addresses of the Tenderers and the final amounts of their Tenders or of individual sections as well as other particulars concerning the price shall be read out. It shall be announced if and by whom proposals for modifications and/or additional offers have been submitted. Other details of the contents shall not be made known.

(d) The minutes taken of the opening session shall be read out, shall contain a note to the effect that they have been read out aloud and that it has been acknowledged as correct or shall specify what objections have been raised by whom.

(e) The minutes shall be signed by the chairman of proceedings.

12.3 Tenders which were not received prior to the submission time and date shall be specified separately in the minutes or addendum thereto. The time of receipt and the reason for the delay of the receipt shall be noted. Envelopes and other means of proof shall be kept in safe custody.

12.4 The Tenderers and their authorized representatives shall be permitted to inspect the minutes of the opening session and addenda thereto (if any). The minutes of the opening session shall not be published.

13. EVALUATION OF TENDERS

13.1 The following Tenders shall be excluded:

(a) Tenders received after opening date and time.

(b) Tenders submitted by tenderers who have entered into an agreement which constitutes a prohibited restriction of competition.

13.2 In selecting the Tenders to be considered for the award of contract, only those Tenderers who offer the necessary security for the performance of the contractual obligations will be taken into account. This shall entail the necessary expertise and experience, performance capacity and capability, the reliability as well as technical and financial means and recources.

13.3 Tenders, of which the prices are obviously disproportionate to the Works concerned, will be disregarded. Only such Tenders from which proper execution and covering of the defect liability period can be expected with due regard to rational and thrifty construction operations and efficient management will be considered. From those Tenders the award will be made to the one which appears to be the most acceptable with regard to all technical, functional, environmental and economical aspects.

13.4 Any arithmetical error by the Tenderer in pricing the Bill of Quantities or in the additions or in carrying forward subtotals to the summary or to the Tender shall be corrected during the evaluation of the Tenders. In such cases the Tender sum shall be adjusted accordingly and the Tenderer shall be informed. It shall be assumed that the unit price rates entered in the Bill of Quantities are correct.

13.5 Proposals for modifications and additional offers which the Employer has admitted or requested for the tendering action shall be evaluated in the same way as the base tender. Other proposals for modifications and additional offers may be considered.

13.6 The Employer does neither bind himself to accept the lowest Tender or any Tender, nor will he be responsible or pay for expenses or losses which may be incurred by any Tenderer with the preparation of his Tender.

14. CANCELLATION OF THE TENDERING ACTION

14.1 The Tendering Action can be cancelled, if

(a) no Tender has been received which corresponds to the Tender Conditions,
(b) there have been substantial changes to the basis of the Tendering Action, or
(c) there are other serious reasons for such a cancellation.

14.2 The Tenderers shall be informed without delay of the cancellation of the Tendering Action by the Empoyer or his Engineer and of the reasons for the same.

9.8 Tender Form for contract above 1500,000 Euro (TENDRFID)

TENDER

Contractors stamp

Project No: .....

Project Title: .....

Contractor: .....

To ..... **or** .....

(Name and address of Employer) *(Name and address of project office, embassy or consultant's office in the recipient country)*

Dear Sir or Madam,

1. Having examined the Conditions of Contract, Drawings, Specifications, Bill of Quantities and all other documents received with the Invitation to Tender for the execution of the Works in connection with the above named Project, we, the undersigned, offer to execute and complete such Works and remedy any faults and defects therein in conformity with the conditions spelled out in the aforementioned documents for the sum of

.....
(in words .....)

or such other sums as may be ascertained in accordance with the said conditions.

2. We acknowledge that the Appendix to Tender enclosed forms part of our Tender.

3. We undertake, if our Tender is accepted, to commence the Works within the time required in the contract conditions, and to complete the whole of the Works comprised in the contract within the time stated in the Contract Conditions.

4. We agree to abide by this Tender for the period of 180 days from the submission/opening date stated in the Invitation to Tender and it shall remain binding upon us and may be accepted at any time before the expiration of that period.

5. Unless and until a Contract Agreement is signed, this Tender, together with your written acceptance thereof, shall constitute a binding contract between us.

6. We understand that you are not bound to accept the lowest or any Tender you may receive.

Dated this : ..... day of .....

Signature : ..... in the capacity of.....

duly authorized to sign Tenders for and on behalf of .....

.....

.....

(Contractors name and address in block capitals)

End.: APPENDIX TO TENDER

APPENDIX TO TENDER

	FIDIC–Part I Clause:	
Amount of Performance Security	**10.1**	.....percent of the Contract Price
Time to submit Work Programme	**14.1**	..... days after signing the contract
Minimum amount of third party insurance	**23.2**	..... per occurance with number of occurances unlimited
Commencement of Works	**41.1**	.....
Time for Completion of Works	**43.1**	..... days
Amount of Penalty for Delay	**47.1**	..... per day
Limit of Penalty	**47.1**	.....
Defects Liability Period	**49.1**	..... months
Advance Payment	**60.12**	.....percent of the Contract Price
Minimum amount of interim certificates	**60.2**	.....
Percentage of Retention	**60.3**	.....percent of the Contract Price

Spaces at Clauses 41.1, 43.1 and 60.12 above to be filled in by Tenderer!

Date ..... Initials of signatory of Tender .....

9.9 Minutes of Opening Tender (MOPTENDR)

Project .....

MINUTES OF OPENING TENDER

Works .....

.....

Date: ..... Time: ..... Place: .....

No.	Invited contractor	Representative present	Tender delivered	Tender signed	Tender complete	Total amount offered
1		Yes/No	Yes/No	Yes/No	Yes/No	I.
						II.
						III.
						Total
2		Yes/No	Yes/No	Yes/No	Yes/No	I.
						II.
						III.
						Total
3		Yes/No	Yes/No	Yes/No	Yes/No	I.
						II.
						III.
						Total
4		Yes/No	Yes/No	Yes/No	Yes/No	I.
						II.
						III.
						Total
5		Yes/No	Yes/No	Yes/No	Yes/No	I.
						II.
						III.
						Total
6		Yes/No	Yes/No	Yes/No	Yes/No	I.
						II.
						III.
						Total

Remarks:

.....

.....

Commission members **Signatures**

....

....

....

Project .....

PARTICIPANTS OF OPENING TENDER PROCEDURE

Works .....

.....

Date: ..... Time: ..... Place: .....

No.	**Name**	**Company**	**Signature**
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			

16

.....

17

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.....

19

.....

20

9.10 Contract for Construction Works on Measurement Basis (recommended for contract value up to 150.000 Euro) (CONCTRMB)

CONTRACT FOR CONSTRUCTION WORKS	Employer's logo
ON MEASUREMENT BASIS	
The	Date:
(Name and address of Employer)	*refer to in all correspondence:*
.....	Contract No.:
.....	
.....	Project No.:
hereinafter referred to as the **– "Employer" –**	
and:	
(Name and address of Contractor)	
.....	
.....	
.....	
hereinafter referred to as the **– "Contractor" –**	
herewith enter into the following Contract	

for the Project:	
Country:.....	

1. PURPOSE OF THE CONTRACT – SCOPE OF WORKS

The Employer awards and the Contractor takes over the execution of the following construction works:

2. CONTRACT DOCUMENTS

The priority of documents forming the Contract shall be as follows:

2.1 This Contract for Construction Works.

2.2 The Specifications

2.3 The Drawings enclosed to the Invitation to Tender, i.e.

No..... dated..... No..... dated.....
No..... dated..... No..... dated.....

and such drawings and details as may be issued by the Employer or his Authorized Representative for the clarification of the Works during execution.

2.4 The priced Bill of Quantities (including Daywork Rates), dated .....

3. TERMS OF EXECUTION – COMMENCEMENT OF WORKS

3.1 The Employer or his Authorized Representative shall give at least 7 days notice, in writing, prior to the date of handing–over of the site. The Contractor shall commence the Works within 5 days of the date of the handing–over of site.

3.2 The Contractor agrees to execute and to complete the Works as described in the documents listed under Clause 2 with due care and diligence in accordance with generally accepted construction practices.

3.3 The Contractor shall be obliged to observe the Laws, Bye–Laws, Ordinances and Statutes and other legal provisions of the country in which the Works are executed, in particular labour laws, local standards, public rules and regulations.

3.4 The Contractor shall submit a work programme not later than ..... weeks after the signing of this Contract.

3.5 The Contractor shall supply all building materials, equipment, plant and tools necessary for the execution of the Works in due number and time.

3.6 The Contractor shall provide all qualified and experienced labour necessary in due number and time and shall supervise their activities with due care and diligence. The Employer shall be entitled to object to and require the Contractor to remove from the Works any person employed by the Contractor who, in the opinion of the Employer, is incompetent, negligent, or guilty of misconduct.

3.7 No work shall be covered up or otherwise put out of view without prior approval in writing by the Employer or his Authorized Representative.

3.8 The Employer shall be entitled to make any variation of the form, quantity or quality of the Works or any part thereof that may, in his opinion, be necessary or desirable (cf. Clause 4.2). No such variation shall be made without an order in writing by the Employer or his Authorized Representative.

3.9 Building materials and Works may be subjected to tests at any time at the request of the Employer. These tests shall be carried out as directed by the Employer or his Authorized Representative at the place of manufacture or fabrication or on site or in a testing institute. The Contractor shall provide such assistance,

materials, plant, instruments and labour as required for such test. The costs of carrying out such tests shall be borne by the Contractor.

3.10 The Contractor shall keep the site free from all unnecessary obstructions at all times and shall remove all materials and plant which are no longer required. Upon completion of the Works he shall leave the site clean and orderly to the satisfaction of the Employer or his Authorized Representative.

4. REMUNERATION – ADDITIONAL WORKS

4.1 The Employer shall pay the Contractor a Contract Price of up to

.....
(in words.....)

in accordance with the prices stated in the Bill of Quantities and the Works actually executed and measured. The Contract Price shall be subject to such additions and deductions as may be made under the provisions of this Contract.

4.2 The rates and prices of the Bill of Quantities shall cover all services and works of the Contractor described in the Specifications and the Drawings. Additional works shall be remunerated only if they were ordered in writing by the Employer or his Authorized Representative and shall be valued at the prices set out in the Bill of Quantities.

4.3 If the Contract does not contain any rates or prices applicable to the extra or additional work, then suitable rates or prices shall be agreed upon between the Employer and the Contractor. In the event of disagreement, the Employer shall fix such rates or prices as shall, in his opinion, be reasonable and proper, taking into account all prevailing circumstances.

4.4 The Contractor shall invoice turnover tax if and as prescribed by law; the Employer will refund the amount in addition to the remuneration.

Amount of turnover tax *(if applicable):* .....

5. TIME FOR COMPLETION – PENALTY FOR DELAY

5.1 The Contractor shall complete the Works as listed under Clause 1 and 2 within..... days after the handing–over of site and shall request the issue of the Taking–Over Certificate at least 3 weeks prior to the date of completion.

5.2 If the Contractor should fail to achieve the completion of the Works within the period prescribed in Clause 5.1, the Contractor shall pay to the Employer a penalty of one per mille (1/1000) of the Contract Price stated under Clause 4.1 for every day of delay up to a limit of 10 % of the Contract Price.

5.3 The payment of such penalty shall not relieve the Contractor from his obligation to complete the Works or from any other obligation or liability under this Contract.

6. AUTHORIZED REPRESENTATIVE – SUPERVISION OF THE WORKS

The site supervision shall be carried out by an authorized firm or person assigned to act on behalf of the Employer and shall exercise the rights of the Employer under this Contract. The Employer herewith appoints as Authorized Representative for the execution of the Works:

.....
.....

7. PAYMENTS

7.1 All payments shall be made in ..... *(currency)*
to the following bank and account number of the Contractor:

.....
.....

7.2 The parties of this Contract agree to the following payment schedule:

7.2.1 Against presentation of a bank guarantee by a bank accepted by the Employer in compliance with the specimen enclosed (see GARANTAP) the Contractor shall receive an advance payment of.....% of the Contract Price =.....

The advance payment shall be repaid by deduction of the corresponding percentage from each payment on account.

7.2.2 Payments on account shall be made in accordance with the progress of the Works measured on site each month, in keeping with the Bill of Quantities and after certification of each invoice by the Authorized Representative.

7.2.3 Each invoice shall be submitted in duplicate and bear the project and contract number indicated on the front page of this Contract.

7.2.4 An amount of 10 % of the total of each payment on account shall be withheld by the Employer as Retention Money.

7.2.5 After the issue of the Taking–Over Certificate (in compliance with TAKGOVER) and presentation of the final bill the remuneration due shall be paid reduced by 5 % of the total Contract Price, which shall be released after the defects liability period has expired, provided the Works are free of defects. This amount may be released against the provision of a Defects Liability Guarantee by a bank accepted by the Employer in compliance with the specimen enclosed (see GARANTDL).

8. TAKING–OVER CERTIFICATE – DEFECTS LIABILITY PERIOD

8.1 The Employer or his Authorized Representative shall issue the Taking–Over Certificate in compliance with the specimen enclosed (see TAKGOVER) within 3 weeks of the date of delivery of the Contractor's request for its issue, provided that the whole of the Works have been completed in accordance with the Contract and to the satisfaction of the Authorized Representative.

If the Works have been completed except for minor faults or missing items, the Employer or his Authorized Representative shall include a statement in the Taking–Over Certificate, listing all faults and defects, missing items or outstanding works to be completed, including the date when all rectification and finishing works shall be completed.

8.2 The Defects Liability Period shall be twelve (12) months, starting with the date of issue of the Taking–Over Certificate.

8.3 Defects, faults, or shrinkage due to the use of materials or workmanship not in accordance with the Contract and which arise during the defects liability periodshall be made good by the Contractor immediately after notification. For these rectifications a new defects liability period shall start on their day of completion.

8.4 If the Contractor should fail to comply with his obligations under this Contract, the Employer shall be entitled to either make a deduction, claim damages or, giving four (4) weeks notice to the Contractor, employ another contractor to execute the works required for rectification and to deduct all expenses arising thereon or incidental thereto from the moneys retained according to Clause 7.2.4 or 7.2.5, or to recover these from the Contractor.

9. LIABILITY– INSURANCE

9.1 The Contractor shall be liable for all damages caused by himself, his agents or persons employed or in any way engaged by him for the execution of the Works.

9.2 Subletting of the Works under this Contract or of any part thereof shall require the express written consent of the Employer. This approval may be revoked at any time in case serious complaints arise. The Contractor shall be liable for all services performed by his subcontractors in the same manner as for his own services.

9.3 Without limiting his obligations and responsibilities under this Contract, the Contractor shall insure himself at his own expense against his liability for any material or physical damage, loss or injury which may occur to any person or property arising out of or in consequence of the performance of this Contract.

9.4 The insurance sum shall be as customary in the country where the works are to be executed.

10. TERMINATION OF THE CONTRACT

10.1 The Employer may terminate this Contract at any time either wholly or in part for individual parts of the Works.

10.2 Should the Employer terminate the Contract for a reason for which the Contractor is answerable, the Employer shall be entitled to claim compensation for damages. In this case the Employer shall remunerate only the Works already completed, provided the Employer can use them. The Employer may offset the claim for damages against the remuneration. Any other legal rights of the Employer shall remain unaffected.

10.3 Should the Employer terminate the Contract for a reason for which the Contractor is not answerable, the Contractor shall be entitled to payment for work already completed and to reimbursement of unavoidable expenses incurred prior to the date of termination.

11. ARBITRATION

All disputes arising in connection with the present Contract shall be finally settled under the Rules of Arbitration of the International Chamber of Commerce by one or more arbitrators appointed in accordance with the said rules.

12. FINAL PROVISION

This Contract shall be modified or supplemented only by written agreement.

.....	.....
(Place, Date)	(Place, Date)
.....	.....
The Employer	The Contractor *(seal, if available)*

Annexes:

- Specimen Advance Payment Guarantee (GARANTAP)
- Specimen Defects Liability Guarantee (GARANTDL)
- Specimen Taking–Over Certificate (TAKGOVER)

9.11a Specimen of Performance Guarantee (GARANTPF)

Performance Guarantee

Employer/Beneficiary:	.....
Consultant:	.....
	.....
Contract Date:	.....
Contract No.:	.....
Project No.:	.....
Object of supply/performance/civil works*:	.....
	.....
	.....

Contract price: *(Currency)* .....

We hereby undertake vis–a–vis the Employer to guarantee independently fulfilment of all of the Contractor's/Consultant's* obligations arising from the afore–mentioned contract, including any incidental claims, up to the amount of

(Currency) ..... (... % of the Contract Price)
(in words: .....)

Explicitly waiving all objections and defences, we undertake to render said payment upon receipt of the beneficiary's first written demand, provided that the latter states that the Contractor/Consultant* has failed to observe all or part of his contractual obligations.

This guarantee shall become effective with the date of signing the contract and shall remain valid until the date of issue of the Taking–Over Certificate.

The Employer shall return this guarantee to us as soon as its validity expires.

This guarantee shall be governed by the law of.....(Country).....The place of jurisdiction for all disputes arising from this guarantee shall be.....(Town).....

.....(Place)....., ...(Date).....

.....

(Signature of the guarantor) * delete what is not applicable

9.11b Advance Payment Guarantee (GARANTAP)

Advance Payment Guarantee

Employer/Beneficiary: .....

Consultant: .....

.....

Contract Date: .....

Contract No.: .....

Project No.: .....

Object of services/performance/works*: .....

.....

.....

Advance payment pursuant to the contract: *(Currency)* .....

We hereby undertake vis–a–vis the Employer to guarantee independently repayment of the advance payment stipulated above, including any incidental claims, up to the amount of

(Currency) ..... (... % of the Contract Price)
(in words:.....)

Explicitly waiving all objections and defences, we undertake to render said payment upon receipt of the Beneficiary's first written demand, provided that the latter states that the Consultant has failed to observe all or part of his contractual obligations.

This guarantee shall become effective with the first advance payment made by the Employer, shall decrease in proportion to the reduction of monthly payments, and shall expire when the advance payment has been repaid in full.

The Employer shall return this guarantee to us as soon as its validity expires.

This guarantee shall be governed by the law of.....(Country).....The place of jurisdiction for all disputes arising from this guarantee shall be.....(Town).....

.....(Place)....., ...(Date).....

.....

(Signature of the guarantor) * delete what is not applicable

9.11c Guarantee for Defects Liability Period (GARANTDL)

Defects Liability Guarantee

Employer/Beneficiary:	.....
Consultant:	.....
	.....
Contract Date:	.....
Contract No.:	.....
Project No.:	.....
Object of services/performance/works*:	.....
	.....
	.....
Contract price:	*(Currency)* .....

We hereby undertake to grant the Employer an independent guarantee for the warranty claims to which he is entitled vis–a–vis the Consultant pursuant to the afore–mentioned contract, including any incidental claims, up to the amount of

(Currency) ..... (... % of the Contract Price)
(in words: .....)

Explicitly waiving all objections and defences, we undertake to render said payment upon receipt of the Beneficiary's first written demand, provided that the latter states that the Consultant* has failed to observe all or part of his contractual obligations.

This guarantee shall become effective upon the date of issue of the Taking–Over Certificate and shall expire upon the end of the Defects Liability Period.

The Employer shall return this guarantee to us as soon as its validity expires.

This guarantee shall be governed by the law of.....(Country).....The place of jurisdiction for all disputes arising from this guarantee shall be.....(Town).....

.....(Place)....., ...(Date).....

.....

(Signature of the guarantor) * delete what is not applicable

9.12 Specimen of Construction Progress Report (PROGREP)

CONSTRUCTION PROGRESS REPORT No.....	covering	.....	.....
		month	*year*

1. Project Number .....

Name of Project .....

Employer .....

2. Architect/Consultant .....

Supervising Consultant .....

Site Supervisor .....

3.	Start of construction period	scheduled	actual
	Anticipated date of completion		

4.	Meteorological (hurricane, flood, frost, earthquake) or local incidences (strike, emergency or martial law, or similar) which disrupted construction activities for more than three (3) consecutive days:

5.	Contractors/subcontractors working at site during reporting period:

6.	Labor force	Number of engineers	
	(monthly average)	Number of foremen	
		Number of skilled craftsmen	
		Number of unskilled workers	
		others	
		Total on site	

7.	Occurences/hinderances unexpected and unforeseen,

8.	**Progress of work** state the following data for each building/part of building or installation:

	item of work executed	percentage of completion	ahead or behind schedule
8.1			
8.2			
8.3			
8.4			
8.5			
8.6			
8.7			
8.8			
8.9			
8.10			
8.11			
8.12			
8.13			
8.14			
8.15			
8.16			
8.17			
8.18			
8.19			
8.20	Overall completion of project		

9.	Reasons for being behind schedule under Item No.:

10.	Steps taken to overcome lack of progress under above items:

11. compiled:

....

place date signature

12. Enclosures:

..... sheets with photos of the construction progress

9.13 Form of Certificate of Taking–Over (TAKGOVER)

Project No: .....

Project Title: .....

Contract No.: ..... dated:.....

incl. Supplement dated ..... dated:.....

Contractor: .....

TAKING – OVER CERTIFICATE

(In case of partial take–over precede title by "PARTIAL")

This is to certify that the Works of the subject contract incl. its supplement(s) have been completed to the satisfaction of the representatives named below and are being taken over as of

..... 20....

Following a joint inspection of the building(s)/installation(s) by the persons named below it has been ascertained that they have been carried out according to the Contract. Faults and defects and/or outstanding works have/have not been determined as listed on the attached sheet.

The following persons participated in the joint inspection as representative for

the Employer .....

the Engineer .....

the Contractor .....

(insert names in printed letters)

The faults and defects found and listed shall be eliminated and the outstanding Works/missing items (if any) shall be completed/installed without delay, definitely not later than

.....20....

All rights on the part of the Employer concerning liability and maintenance shall remain unaffected. The Employer reserves the right to avail himself of the contract penalty clause insofar as this has been agreed.

The execution of the Works has been commenced as of .....

With the building(s)/installation(s) completed and taken–over at the date stated above the **Defects Liability Period** commences at that same date and ends at.....

This Certificate shall be drawn up in three identical copies with one copy each for the three representatives signing below

.....	.....	.....
Employer's Representative	Supervising Engineer	Contractor's Representative

End.: List of defects and/or outstanding works

ENCLOSURE TO TAKING–OVER CERTIFICATE

Project No: .....

Project Title: .....

Contract No.: ..... dated:.....

incl. Supplement dated ..... dated:.....

Contractor: .....

LIST OF DEFECTS AND/OR OUTSTANDING WORKS

1. The following faults and defects have been found and established during the joint inspection at the date of taking−over stated on the front page:

2. The following outstanding Works/missing items have been found and established during the joint inspection at the date of taking−over as above:

3. This **Partial Taking−Over Certificate** does not apply to the whole of the Contract stated above, but to the following parts/portions of work only:

.....	.....	.....
Employer's Representative	Supervising Engineer	Contractor's Representative

9.14 Form of Certificate of Handing−Over (HNDGOVER)

This is to certify that the following works for the project named below have been completed to the full satisfaction of the representatives listed in the Minutes of the Handing−Over and are being handed over to and accepted by the authorized representative of the counterpart authority in the recipient country as of

Project No: ..... 20.....

Project Title: .....

Works: .....

Remaining defects and outstanding works affecting the warranty of the contractor(s) have/have not been determined as stated in the **Minutes of Handing−Over** enclosed.

Upon this handing−over of the works all rights and obligations concerning the works are transferred to the counterpart authority in the recipient country.

The Project Agreement between the Government of the Federal Republic of Germany and the

Government of .....dated..... shall remain unaffected and the works shall be at the unlimited disposition of the experts delegated by the GTZ to the promoted project for the implementation and completion of their duties and tasks.

.....	.....
Place	Date
Handed over by	Accepted by
.....	.....
Signature and name in printed letters of the authorized representative of the Employer	Signature and name in printed letters of the authorized representative of the counterpart authority

End.: Minutes of the Handing−Over

MINUTES OF THE HANDING−OVER

The handing−over of the

Works: .....

of

Project No: .....

with the

Project Title: .....

as of....., 20..... has been accomplished by the following team of representatives present and authorized to sign for the:

	name in printed letters	*initial:*
Employer	.....	.....
Counterpart Authority	.....	.....
Usufructuary	.....	.....
German Embassy (if applicable)	.....	.....

Following a joint inspection of the works it has been ascertained that they have been completed as approved and are ready for use. Defects, deficiencies and outstanding works, all covered by contractors liability, were established as follows:

1. Faults and Defects at

1.1 Building/Installation

1.2. Exterior Facilities (if applicable)

2. Outstanding Works/Missing Items

2.1 Building/Installation

2.2 Exterior Facilities (if applicable)

3. Remarks:

With this certificate the following documents are handed–over to the authorized representative of the counterpart authority:

– one (1) set of as–built drawings,

– one (1) copy of the Taking–Over Certificate as of.....20.....,

– one (1) copy of the Acceptance Certificate of the electrical installations and equipment, incl. the record of inspection,

– complete set of operating instructions and maintenance manuals for electrical/mechanical equipment (if applicable)

....

For the Employer For the counterpart authority

9.15 FIDIC–Part I, Conditions of Contract for Works of Civil Engineering Construction (recommended for contract value above 150.000 Euro) Website Information (FIDIC–P1).

Information on FIDIC Publications (from Internet website "http://www.fidic.org")

FIDIC publishes:

• Information about FIDIC, with such booklets as FIDIC Info, a small information/address book published annually, and FIDIC Statutes and Bylaws.

• Information for clients, including the International Directory of Consulting Engineers (published every two years, and which is also available online at www.fidicdirect.com, Quality Based Selection, FIDIC Tendering Procedure and other valuable documents about the use of consulting engineers.

• Information for Consulting Engineers, with manuals/guides on topics such as risk management, environment, transfer of technology, quality management, dispute resolution techniques, insurance, law and other business issues.

Contracts/Agreement

The "backbone" of the body of FIDIC's publications is FIDIC's selection of contracts and agreements. FIDIC publishes Conditions of Contract for:

• Works of Civil Engineering Construction (The Red Book)
• Construction Contract (NEW: updates the Red Book)
• Electrical & Mechanical Works (The Yellow Book)
• Design–Build and Turnkey (The Orange Book)
• Plant and Design Build Contract (updates Yellow Book and Orange Book)
• EPC/Turnkey Projects
• The Short Form

These documents are available in printed and electronic versions, and a short text tells you how to choose the right contract.

All FIDIC contracts standard conditions of contract between a client/employer and a contractor. The consulting engineer is not a party to these contracts, but plays a role as the employer's representative to see that the contract is properly carried out.

Additionally, FIDIC publishes a Client/Consultant Model Services Agreement (The White Book), which is the agreement often used by the client when appointing a consultant as his employer's representative for the above contracts.

This "rainbow" of FIDIC contracts/agreements provides the major portion of the total income from publication sales to FIDIC.

FIDIC's volunteer committees, who draft nearly all of FIDIC's documents, are continuously drafting or revising, keeping FIDIC's Publications informative and up–to–date.

Representation Impact

Equally important for FIDIC is the representation/image impact of its publications. Most people first learn about the Federation by reading or using its business practice publications or standard conditions of contract. FIDIC's "quality image" is enhanced by its publication of quality documents.

The most pronounced example of this image impact is FIDIC's Conditions of Contract for Works of Civil Engineering Construction ("The Red Book", owing to its red cover), now in its fourth edition. Many people call the Red Book "FIDIC" or "the FIDIC", mistakenly using the Federation's acronym (taken from its original French name, Fédération Internationale des Ingénieurs–Conseils) for its best known publication, unaware of the Federation, but certainly aware of its Red Book.

This confusion is not surprising, when one considers that the Red Book is used as the general conditions in standard bidding documents of many development banks, including the World Bank.

Financial Impact

FIDIC's publications fulfil an important and essential role for the well being of the Federation. Revenues from publication sales account for nearly half of FIDIC's income, with most of the other half coming from Member Association (MA) subscriptions.

FIDIC's annual income from publications has grown from about SFr. 300,000.– in the late 1980's to more than SFr. 900,000.– today. This growth in publications sales has allowed FIDIC to reduce the unit rates for membership subscriptions by nearly one–half over the past decade, an important impact when one considers that more than half of FIDIC's Member Association's are in developing countries, many of which have weak currencies.

With FIDIC being a non–profit, self–supporting Federation, which neither seeks nor accepts financial support from any other body, the essential role played by its publications sales cannot be over emphasized.

Ordering

All FIDIC documents can be ordered online at the FIDIC.org Bookshop. The Bookshop gives details such as:

- Overview of contents.

- Translations: All FIDIC documents are published in English and depending upon the need, in other languages (but English remains the language of reference in case of legal dispute – see FIDIC Policy on Translations). However, other organizations often undertake to translate FIDIC documents, especially conditions of contract. The Bookshop indicates the translations that are available and where they can be obtained if they are not stocked by the Bookshop

- Prices: all prices are in Swiss francs and special offers are available for orders exceeding the minimum order provided more than three items are ordered.

International Federation of Consulting Engineers
FIDIC Bookshop– BP 86 • CH–1000 Lausanne 12 • Switzerland
Tel +41–21–654 44 15 • Fax +41–21–654 44 17• fidic.pub@fidic.org • FIDIC Bookshop

9.16 FIDIC–Part II, Conditions of Particular Application (as an example), drafted by the GTZ (FIDIC–P2), to be adapted to the specific project conditions.

CONDITIONS OF CONTRACT

PART II – CONDITIONS OF PARTICULAR APPLICATION

The following clauses of Part I of the "Conditions of Contract for Works of Civil Engineering Construction" (FIDIC), Fourth Edition 1987, reprinted with amendments 1992, prepared by the Fédération Internationale des Ingénieurs–Conseils, shall be supplemented, modified, deleted or added as follows:

Sub–Clause 1.1 – Definitions

(a) (i) The Employer is .....

.....

.....

.....

.....

(a) (iv) The Engineer is .....

.....

.....

.....

.....

The Employer is entitled to replace the Engineer at any time without the consent of the Contractor. In such a case the Employer shall notify the Contractor in writing without undue delay.

(b) (vi) “Letter of Acceptance”:

Sub−Paragraph (b) (vi) shall be added by the following:

“In case no Letter of Acceptance is issued all references to the Letter of Acceptance shall be deemed to be made to the Contract Agreement referred to in Sub−Clause 9.1.”

Sub−Clause 2.1 – Engineer’s Duties and Authority

Paragraph (b) of Sub−Clause 2.1 shall be amended as follows:

“(i) The Engineer shall obtain the specific approval of the Employer in writing before carrying out any of the following actions as specified in Part I:

(1) consenting to subcontracting of any part of the Works pursuant to Clause 4.1,

(2) determination of any extension of time pursuant to Clause 12.2 (a),

(3) determination of any additional costs pursuant to Clause 12.2 (b),

(4) issuing a Taking−Over Certificate pursuant to Clause 48.1,

(5) making any variation pursuant to Clause 51.1, unless the accumulated costs of the variations do not surpass ten (10) percent of the original Contract Price,

(6) fixing rates or prices pursuant to Clause 52, including provisional rates and prices,

(7) determining increased costs arising from special risks pursuant to Clause 65.5,

(8) determining any sums payable pursuant to Clause 65.8 in the event that the contract is being terminated.

(ii) Notwithstanding the obligation, as set out above, to obtain approval, if, in the opinion of the Engineer, an emergency occurs affecting the safety of life or of the Works or of adjoining property, he may, without relieving the Contractor of any of his duties and responsibilities under this Contract, instruct the Contractor to execute all such work or to do all such things as may, in the opinion of the Engineer, be necessary to abate or reduce the risk. The Contractor shall forthwith comply, despite the absence of approval of the Employer, with any such instruction of the Engineer. The Engineer shall determine an addition to the Contract Price, in respect of such instruction, in accordance with Clause 52 and shall notify the Contractor accordingly, with a copy to the Employer.”

Sub−Clause 2.2 – Engineer’s Representative

Sub−Clause 2.2 shall be deleted and substituted by:

"The Engineer's Representative shall be appointed by and be responsible to the Engineer. The Engineer's Representative shall either be a representative of the local representation of the Engineer or an expert seconded by the Engineer. Any appointment or revocation of the Engineer's Representative requires the specific written approval of the Employer and shall not take effect until a copy thereof has been delivered to the Contractor."

Sub–Clause 2.3 – Engineer's Authority to Delegate

Sub–Clause 2.3 shall be deleted and substituted by:

"Any communication given by the Engineer's Representative to the Contractor shall have the same effect as though it had been given by the Engineer."

Sub–Clause 2.4 – Appointment of Assistants

Sub–Clause 2.4 shall be deleted entirely.

Sub–Clause 2.5 – Instructions in Writing

In the last sentence the following words shall be deleted:

"and any assistants of the Engineer or the Engineer's Representative appointed pursuant to Sub–clause 2.4."

Sub–Clause 3.1 – Assignment of Contract

Sub–Clause 3.1 shall be deleted and substituted by the following:

"The Contractor shall not, without prior consent of the Employer (which consent shall be at the sole discretion of the Employer) assign the Contract or any part thereof or any benefit or interest therein or thereunder."

Sub–Clause 5.1 – Language and Law

(a) The language is English.

(b) The law is that in force in.....*(Country)*.....

Sub–Clause 5.2 – Priority of Contract Documents

The list of documents shall be deleted and substituted by the following:

(1) the Contract Agreement, if completed;
(2) the Letter of Acceptance, if issued;
(3) the Tender with Appendix;
(4) the Conditions of Contract Part II;
(5) the Conditions of Contract Part I;
(6) the Specifications;
(7) the Drawings; and
(8) the priced Bill of Quantities.

Sub–Clause 10.1 – Performance Security

The third phrase of Sub–Clause 10.1 shall be deleted and substituted by:

"Such security shall be in accordance with the specimen "Performance Guarantee" annexed to these Conditions."

Sub–Clause 10.3 – Claims under Performance Security

Sub–Clause 10.3 shall be deleted entirely.

Sub–Clause 13.1 – Works to be in Accordance with Contract

The last phrase of Sub−Clause 13.1 shall be deleted and substituted by:

“The Contractor shall take instructions only from the Engineer or, subject to the provisions of Clause 2, from the Engineer’s Representative.”

Sub−Clause 14.1 − Programme to be Submitted

The words “in Part II of these Conditions after the date of the Letter of Acceptance” in the first and second line shall be substituted by “in the Appendix to the Tender”.

Sub−Clause 14.3 − Cash Flow Estimate to be Submitted

Sub−Clause 14.3 shall be deleted entirely.

After Sub−Clause 15.1 − Contractor’s Superintendent

The following Sub−Clause 15.2 shall be added:

“15.2 − Language Ability of Contractor’s Representative

The Contractor’s representative shall have command of the contract language according to Sub−Clause 5.1 (a).”

Sub−Clause 20.4 − Employer’s Risks

The definition of Sub−Clause 20.4 shall be preceded by the paragraph:

“The Employer’s risks are limited to those related to the country where the Permanent Works are to be executed. The present political situation is well known to both parties and shall not be considered an Employer’s risk; thus it shall not justify any claim, additional payment or any extension of time.”

Sub−Clause 21.1 − Insurance of Works and Contractors Equipment

The following phrase shall be added to Paragraph (a):

“,it being understood that such insurance shall provide for compensation payable in those types and proportions of currencies required to rectify the loss or damage incurred.”

Sub−Clause 21.2 − Scope of Cover

The words “from the start of work at the Site” in Paragraph (a) shall be deleted and substituted by: “from the date fixed for the Commencement of Works under Sub−Clause 41.1”.

After Sub−Clause 25.4 − Compliance with Policy Conditions

The following Sub−Clause 25.5 shall be added:

“25.5 − Source of Insurance

The Contractor shall be entitled to place all insurance relating to the Contract (including, but not limited to, the insurance referred to in Clauses 21, 23 and 24) with insurers approved by the Employer.”

After Sub−Clause 26.1 − Compliance with Statutes. Regulations

The following Sub−Clauses 26.2 and 26.3 shall be added:

“26.2 − Agreements between.....and the recipient country

The works under this Contract shall be carried out observing the Bilateral Agreement for Technical Co−operation and the Project Agreement between .....and the recipient country. These agreements provide inter alia that the import of equipment and materials required for the Contract Works will be free of any custom duties, taxes, or any other official charges.

26.3 – Violation of Agreements

Each and every case of violation of the aforementioned Agreements shall be reported by the Contractor to the Employer immediately."

Sub–Clause 30.3 – Transport of Materials or Plant

Sub–Clause 30.3 shall be deleted entirely.

After Sub–Clause 34.1 – Engagement of Staff and Labour

The following Sub–Clauses 34.2 to 34.5 shall be added:

"34.2 – Health and Safety

Due precautions shall be taken by the Contractor at his own cost to ensure the health and safety of his staff and labour in collaboration with and to the pertaining requirements of the local health authorities, labour laws, welfare and hygiene requirements.

34.3 – Alcoholic Liquor or Drugs

The Contractor shall not, otherwise than in accordance with the Statutes, Ordinances and Government Regulations or Orders for the time being in force, import, sell, give, barter, or otherwise dispose of any alcoholic liquor and/or drugs, or permit or suffer by his Subcontractors, agents, staff or labour to do so.

34.4 – Arms and Ammunition

The Contractor shall not give, barter, or otherwise dispose of to any person or persons, any arms or ammunition of any kind or permit or suffer the same as aforesaid.

34.5 – Disorderly Conduct

The Contractor shall at all times take all reasonable precautions to prevent any unlawful, riotous, or disorderly conduct by or amongst his staff and labour and for the preservation of peace and protection of persons and property in the neighbourhood of the Works against the same."

Sub–Clause 36.2 – Cost of Samples

A full stop shall be inserted after "at his own cost" and the remainder of the sentence shall be deleted.

Sub–Clause 41.1 – Commencement of Works

The first sentence of Sub–Clause 41.1 shall be deleted and substituted by:

"The Contractor shall commence the Works on the date stated in the Appendix to Tender."

Sub–Clause 42.1 – Possession of Site and Access Thereto

In the third line of Paragraph (b) the words "with the Engineer's notice to commence the Works," shall be substituted by "upon the contractually agreed date of commencement of the Works,"

Sub–Clause 44.2 – Contractor to Provide Notification and Detailed Particulars

In the first line of the Paragraph (b) the words "or such other reasonable time as may be agreed by the Engineer," shall be deleted.

Sub–Clause 47.1 – Liquidated Damages for Delay

The Sub–Clause 47.1 shall be deleted and substituted by:

"47.1 – Penalty

If the Contractor fails to comply with the Time for Completion in accordance with Clause 48 for the whole of the Works or, if applicable, any Section within the relevant time prescribed by Clause 43.1, then the Contractor shall pay to the Employer the relevant sum stated in the Appendix to Tender as a penalty for every day which shall elapse between the relevant Time for Completion and the date stated in the Taking–Over Certificate of the whole of the Works or the relevant Section, subject to the applicable limit stated in the Appendix to Tender. The Employer may, without prejudice to any other method of recovery, deduct the amount of such penalty from any monies due to or to become due to the Contractor. The payment or deduction of such penalty shall not relieve the Contractor from his obligations to complete the Works, or from any other of his obligations and liabilities under this Contract, namely for damages caused by delay."

Sub–Clause 47.2 – Reduction of Liquidated Damages

The Sub–Clause 47.2 shall be deleted and substituted by:

"47.2 – Reduction of Penalty

If, before the Time of Completion of the whole of the Works or, if applicable, any Section, a Taking–Over Certificate has been issued for any part of the Works or for a Section, the penalty for delay in completion of the remainder of the Works or of that Section shall, for any period of delay after the date stated in such Taking–Over Certificate, and in absence of alternative provisions in the Contract, be reduced in the proportion which the value of the part so certified bears to the value of the whole of the Works or Section, as applicable. The provisions of this Sub–Clause shall apply to the rate of penalties only and shall not affect the limit thereof."

Sub–Clause 48.1– Taking–Over Certificate

Sub–Clause 48.1 shall be preceded by the following sentence:

"The Taking–Over–Certificate shall be issued by the Employer unless he authorises the Engineer in writing to issue such a Certificate."

After Sub–Clause 49.4 – Contractor's Failure to Carry Out Instructions

The following Sub–Clauses 49.5 to 49.7 shall be added:

"49.5 – No Engineer under contract

In case that there is no Engineer under contract during the defects liability period, the Employer shall assume all functions of the Engineer referred to in Clauses 49 and 50.

49.6 – Limitation of action

The Employer's right to demand that the Contractor make good any defect after notification thereof shall become statute–barred two years after that notification.

49.7 – Defects liability period for subsequent improvement works

In respect of the Works undertaken to make good defects, the defects liability period shall begin anew on the day on which those works have been acceptably completed. A certificate pursuant to Sub–Clause 48.1 shall establish that the Work has been completed in proper form."

Sub–Clause 52.2 – Power of the Engineer to Fix Rates

After the first full paragraph the following paragraph shall be added:

"Provided further that no change in the rate or price for any item contained in the Contract shall be considered unless such item accounts for an amount of more than two (2) percent of the Contract Price and the actual quantity of work executed under the item exceeds or underruns the quantity stated in the Bill of Quantities by more than 25 percent."

Sub–Clause 53.2 – Contemporary Records

The word “necessarily” in the third line shall be deleted.

Sub−Clause 53.3 – Substantion of Claims

The words “, or such other reasonable time as may be agreed by the Engineer” shall be deleted.

Sub−Clause 53.4 – Failure to Comply

Sub−Clause 53.4 shall be deleted and substituted by:

“If the Contractor fails to comply with any of the provisions of this Clause in respect of any claim which he seeks to make, he shall not be entitled to any payment in respect thereof.”

Sub−Clause 60.1 – Monthly Statements

At the end of the first line the number “six” shall be substituted by “two” and Paragraph (c) shall be deleted entirely.

Sub−Clause 60.2 – Monthly Payments

In Paragraph (b), within the first line, the phrase”, other than pursuant to Clause 47,” shall be deleted.

Sub−Clause 60.3 – Payment of Retention Money

The following Paragraph (c) shall be added:

> (c) The Employer shall pay the other half of the Retention Money mentioned in Paragraph (b) before the expiration of the Defects Liability Period for the Works against presentation of a Defects Liability Guarantee conforming with the annexed specimen and issued by a bank approved by the Employer.

Sub−Clause 60.6 – Final Statement

Sub−Clause 60.6 shall be deleted and substituted by:

“The Statement at Completion shall be deemed as the Final Statement.”

Sub−Clause 60.7 − Discharge

Sub−Clause 60.7 shall be deleted entirely.

Sub−Clause 60.8 – Final Payment Certificate

The number “28” shall be substituted by “56” and the words “, and the written discharge” in the first line, “finally” in the first line of Paragraph (a) and “, other than under Clause 47” in the second line of Paragraph (b) shall be deleted.

Sub−Clause 60.9 – Cessation of Employer’s Liability

A full stop shall be inserted after “Final Statement” and the rest of the sentence be deleted.

Sub−Clause 60.10 – Time for Payment

The Sub−Clause 60.10 shall be deleted and substituted by:

> “Any amount due to the Contractor shall be paid by the Employer to the Contractor within 45 days after receipt of an Interim Payment Certificate or the Final Certificate issued by the Engineer.”

After Sub−Clause 60.10 – Time for Payment

The following Sub−Clauses 60.11 and 60.12 shall be added:

"60.11 – Place of Payments

The place of performance for all payments shall be....."

60.12 – Advance Payment

An advance payment according to the amount stated in the Appendix to Tender shall be made by the Employer against the provision of an Advance Payment Guarantee by the Contractor according to the specimen annexed to these conditions. The bank providing such guarantee shall be subject to the Employer's approval.

The advance payment shall be written down by the Contractor by way of proportional reductions in any interim certificate and the Final Certificate, until the amount paid in advance has been written down to nought. The proportion of each reduction shall correspond to the relation of the advance payment to the total Contract Price."

Sub−Clauses 61.1. 62.1 and 62.2

Sub−Clauses 61.1, 62.1, and 62.2 shall be deleted entirely and substituted by:

"61.1 − Completion of the Contract

A Defects Liability Certificate shall not be issued. The Contract shall be considered as completed in full as soon as the Defects Liability Period has passed without any notice of defects or as soon as any works instructed pursuant to Clause 49 and 50 have been completed to the satisfaction of the Employer. The Defects Liability Guarantee shall be returned accordingly, if applicable."

Sub−Clause 65.7 – Removal of Contractor's Equipment on Termination

After the words "Sub−Clause 65.6," the words "or Sub−Clause 65.9" shall be added.

After Sub−Clause 65.8 – Payment if Contract Terminated

The following Sub−Clause 65.9 shall be added:

"65.9 − Termination of Contract at Employer's Convenience

The Employer shall be entitled to terminate this Contract at any time at his convenience by giving notice to the Contractor, with a copy to the Engineer. Such termination shall have immediate effect unless otherwise stated in said notice. In the event of such a termination, the Contractor shall

(a) proceed as provided under Sub−Clause 65.7, and
(b) be paid by the Employer as provided under Sub−Clause 65.8."

After Sub−Clause 66.1 – Payment in Event of Release from Performance

The following Sub−Clause 66.2 shall be added:

"66.2 − Partial Impossibility

If such circumstances as mentioned in Sub−Clause 66.1 render it impossible or unlawful for the Contractor to fulfil part of his obligations, Sub−Clause 66.1 shall apply mutatis mutandis. In such a case the Employer shall be entitled to terminate the Contract if he does not have an interest anymore in the fulfilment of the part not affected by such circumstances, but shall pay the Contractor according to Sub−Clause 65.8."

Sub−Clause 69.1 – Default of Employer

Paragraph (b) shall be deleted and the following phrase shall be added at the end of the Sub−Clause:

“A termination under Paragraph (a) requires a prior written reminder of the payment due, giving a reasonable time limit.”

Sub–Clause 69.3 – Payment on Termination

The following sentences shall be added at the end:

“In any case, such payment shall be limited to the total Contract Price. However, the Contractor is obliged to take all necessary steps to minimise the damage.”

Sub–Clause 69.4 – Contractor’s Entitlement to Suspend Work

The words “to interest under Sub–Clause 60.10 and” shall be deleted and the following paragraph shall be added after the first full paragraph:

“However, any suspension of work or reduction of rate of work requires a prior written reminder of the payment due, giving a reasonable time limit.”

Clause 70 – Changes in Cost and Legislation

The Sub–Clauses 70.1 and 70.2 shall be deleted entirely and substituted by:

“70.1 – Fixed Prices

The Contract Prices are fixed prices for the term of this Contract and shall not be subject to any adjustment in respect of rise or fall in the cost of labour, materials, or any other matters affecting the costs for the execution of this Contract.”

Sub–Clause 71.1 – Currency Restrictions

The Sub–Clause 71.1 shall be deleted entirely.

Sub–Clause 72.2 – Currency Proportions

The whole text following the word “shall,” (fifth line) shall be deleted and substituted by: “be as stated in the Appendix to Tender.”

After Clause 72.3 – Currencies of Payment for Provisional Sums

The following Clauses shall be added:

“Clause 73.1 – Bribery and Agreements to Restrain Competition

If the Contractor or any of his sub–contractors, agents, or servants offer to give or agree to or give to any person any bribe, gift, gratuity, or commission as an inducement or reward for doing or forbearing to do any action in relation to the Contract or any other contract with the Employer or for showing or forbearing to show favour or disfavour to any person in relation to the Contract or any other contract with the Employer, then the Employer may enter upon the Site and the Works and terminate the employment of the Contractor and the provisions of Clause 63 thereof shall apply as if such entry and termination had been made pursuant to that clause. The same shall apply if the Contractor has taken part in agreements to restrain competition in order to obtain the contract or if he has made incorrect statements in the Tender Documents.”

Clause 74.1 – Details to be Confidential

The Contractor shall treat the details of this Contract as private and confidential, save in so far as may be necessary for the purpose thereof, and shall not publish or disclose the same or any particulars thereof in any trade or technical paper or elsewhere without the prior consent in writing of the Employer. If any dispute arises as to the necessity of any publication or disclosure for the purpose of the Contract the same shall be referred to the decision of the Employer whose award shall be final.”

Clause 75.1 – Joint and Several Liability

If the Contractor is represented by a joint venture of two or more persons, all such persons shall be jointly and severally bound to the Employer for the fulfilment of the terms of the Contract and shall designate one of such persons to act as leader with the authority to bind the joint venture. The composition or the constitution of the joint venture shall not be altered without the prior written consent of the Employer."

Clause 76.1 – Invalidity

The invalidity of one or several provisions of the Contract shall not affect the validity of the remaining provisions. Invalid provisions shall be substituted by such provisions as are closest to the economic purpose aimed at by both contracting parties."

10. Glossary

Backstopping

Accompanying professional and technical support.

Cash for Work

Remuneration for work (minimum wage level), in order to strengthen the buying power of many households. It is closely linked to "food–for–work", an instrument of food security with the aim of alleviating acute nutritional deficits, mobilising self–help and enhancing nutritional support activities. It is frequently applied in integrated food security programmes (IFSP), which, depending on the situation, can be a combination of food– and cash–for–work, operational inputs–for–work and equipment–for–work, as well as foodstuffs for participating in training programmes (food–for–training).

Conflicts

Conflicts are a common component of world politics, as well as of the politics within communities and states. They result from real or supposed contrasting interests. When two or more actors actively propagate their contradicting interests a conflict develops. Conflicts are usually local or regional, and rarely affect an entire country.

Conflict management

is the attempt to influence the course of a conflict by regulation, prevention of violence and finding a means of settlement. It aims at bringing about constructive solutions from which all parties can benefit.

Contract for construction works on measurement basis

A contract based on specifications of building works subdivided into individual works with agreed unit prices. Accounts are settled according to actual measurements and quantities of the materials used and work accomplished (in contrast to a lump sum contract).

Crisis prevention

incorporates early, planned, systematic and coherent action at different levels of state and society in order to prevent violent conflicts. Activities conceived to prevent crises aim to reduce the potential for increased violence, before, during or after a violent conflict, and to promote the development of institutions, structures and "cultures" to settle disputes with peaceful means.

Development–oriented emergency aid

Development–oriented emergency aid (DEA) encompasses all measures, initiatives and reactions to emergency situations in crises, conflicts and disasters and their prevention. The aim is to contribute to a reduction of the endangering and vulnerability of people – at household level, as well as regional and national levels – or to alleviate the effects of disasters: either by precautionary measures to avoid or by managing existing emergency situations.

Disaster

A disaster is an disruption in the normal functioning of a society, which leads to loss of human lives, property and environmental resources, and which exceeds the ability of the affected communities to cope using only its own resources. There are three types of disasters: man−made disasters (caused by technological failures), natural disasters and conflicts. They can occur suddenly, over a certain period of time, or exist permanently.

Disaster risk assessment

This means the recording of disaster risks (potential threat, including statistical frequency of hazards) in a given region over a given period of time. The aim is to assess the probability of occurrences, the estimation of potential losses (number of dead and injured, damage of property, interruption of economic activity) and a disaster alleviating information system and evaluation (e.g. demarcation of endangered areas, establishment of early warning systems).

Disaster risk management

Disaster risk management includes measures to avoid disasters and to reduce the effects of disasters.

FIDIC

The FIDIC selection of contracts and agreements contain internationally accepted contract conditions and guidelines for the execution of building works worldwide. They are published by “Fédération Internationale des Ingénieurs−Conseils (FIDIC)” in two parts. Part 1 contains the general conditions, while Part 2 is concerned with the special clauses of the project and therefore has to be adapted to the specific conditions of the project in question. Further information and order forms can be found in the Internet under “www.fidic.net”.

Financial cooperation

Financial Cooperation (FC; formally known as “capital aid”) is an instrument of bilateral development cooperation. Its task is to provide capital which will make better use of, or boost, the production potential of developing countries, including their economic and social infrastructure. Through FC, funds are made available to partner countries in the form of soft loans or non−repayable financial contributions. Emphasis is on investment, not on advisory services. Unlike TC, FC is thus a means of financing and not a direct contribution. The Kreditanstalt für Wiederaufbau (KfW) is responsible for handling German Financial Cooperation on behalf of the Federal German Government.

Financing agreement (GTZ)

Financing agreements are agreements based on international law to provide a project of a partner with non−repayable, tied contributions of the GTZ from funds of the Federal German Government. Financial contributions are not direct contributions. They are provided where there is a competent local executing agency which is in a position to assume full responsibility for the proper planning and implementation of the project. Construction work, for instance, is usually supported through financial contributions. To handle a financial contribution, the GTZ enters into a financing agreement with the partner.

General contractor

Unlike the non−commercial general contractor (NGC), the general contractor carries out considerable parts of the works with his own resources (e.g. in his capacity as building contractor, construction of the building carcass) and sub−contracts other works to third parties.

Housing development

The housing development referred to here is concerned with temporary buildings and settlements with technical services and social facilities of varying standards. Depending on the standard of finish, level of investment and regional plans, the aim should be to achieve a certain degree of sustainability, such that, when the buildings are dismantled, at least a part of the technical systems (sewage, water supply, power supply, roads, or parts of them) can be reused in the case of a new development.

Immediate relief

Relief measures, that are implemented directly after a disaster or war, are called immediate relief. This immediate relief serves to ensure the instantaneous survival of the affected population.

Involvement/Participation

In development cooperation the term “participation” refers to the process, in which various actors share and negotiate control over development initiatives, and the decisions and resources associated with them. Participation as a management principle is based on the now widely acknowledged insight that processes of change are all the more successful, the more intensively the actors are appropriately involved in the design of project objectives and measures. Depending on the project type and phase, different degrees of participation may be appropriate.

Lump sum contract

A fixed price (or lump sum) is based on specifications of services to be rendered, for which a “fixed” price, i.e. an unalterable price, has been agreed. The “fixed” price necessitates a precise description of services and/or plans and drawings of a building project, which may be deviated from only marginally during execution. In the case of major deviations the additional costs have to be negotiated, or new services have to be paid for.

Non−commercial general contractor (NGC)

The NGC or implementing consultant “takes over” the responsibility for achieving the objectives of a project and is answerable to the financing agency for the services as a whole. He is less concerned with “undertaking” the professional implementation himself, but instead sub−contracts these services to professionals of the local or international building industry.

Nucleus model

In the case of a nucleus model, only the central core of a house, or only the main and essential rooms, installations and building components are constructed or repaired. All the rest is carried out by the owner at his/her own cost.

Ownership

The term “ownership” is used in today’s development policy debate to designate identification with the project, along with the motivation to assume responsibility for development initiatives and processes of change. It is also used to remind people of the subsidiarity of external support. Today, ownership in the above sense is considered an important precondition for the efficiency and sustainability of development processes, and in TC is one of the key quality indicators. It should be ensured that “ownership” exists, or is achieved in the course of a project, both within the partner organisation(s) and among the target groups and their institutions.

Project executing organisation

The project executing organisation is the legal entity responsible for human resources, financial and technical aspects of implementing a TC−supported project in the partner country. It may be state−run, parastatal or non−governmental. A project may imply cooperation with several project executing agencies, each with clearly defined responsibilities for specific components of implementation (responsibility for implementation) which do not overlap. In some cases the project executing organisation can engage third parties (private companies, institutions, groups or individuals) to provide the services agreed upon.

Project management

Action and responsibility for a technically and commercially/economically immaculate execution and accounting of a (building) project.

Rapid assessment

Investigations of one or more experts on location to determine the possibility of implementation and conception of a project from a technical point of view, taking into consideration the different requirements of the parties involved, and estimation of the time frame and costs.

Rehabilitation and reconstruction

The term rehabilitation includes measures that are taken up after a disaster, quite often directly after a phase of humanitarian aid and before the period of reconstruction, in order to restore existential social functions,

which are needed to provide the basis for the ensurance of survival of the people with their own human and material resources.

Reconstruction leads to the complete restoration of a functioning society, economy and environment. In the process, the aim should be to regain the quality of life, or even exceed it, in comparison to the living conditions before the disaster. This should happen with regard to preventive measures against future risk situations.

Self–help

Self–help means people endeavouring to achieve goals through their own efforts. It is an individual or collective response to objective emergencies, or to situations perceived to be unsatisfactory, which people seek to overcome by sustainably improving their living conditions and increasing their self–reliance. Self–help efforts can involve changing a material situation or influencing political and social framework conditions. Help towards self–help is characterised by the following principles:

- The beneficiaries' own efforts are not substituted and the promoted individuals and groups are not exonorated from responsibility.

- Existing initiatives are strengthened; external promotion may not go beyond providing initial stimulus.

- The participation of affected persons and groups in all decision–making within the scope of the cooperation is a necessary precondition.

- Promotion is geared primarily to groups.

- The decision as to what constitutes the maximum possible self–help and the minimum necessary external support is the subject of dialogue with the beneficiary individuals or groups. In emergencies, it is displaced in favour of external aid, such that the proportion of self–help is reduced accordingly.

Significance

Does the project generate broad–based sectoral and/or regional impacts, can it be used as a model, and is it replicable in other sectors or countries? Does it contribute to institution–building and/or institutional development of the relevant sub–systems? The opposite of significant projects are so–called “island” projects, i.e. isolated projects which do not impact significantly on their wider environment.

Sustainability

This denotes a balance between the needs of the present generation and the living perspectives of future generations. With reference to projects, it describes the extent to which the partner organisations and target groups are willing and able to self–reliantly continue and further develop the innovations effected by the project. As a decisive quality criterion, sustainability presupposes in particular that

- the partner organisations designated to implement the project have the required qualifications,

- the effects of the project correspond with the needs of the target group,

- the services expected from the partners lie within their capabilities and

- the implementation is also justified under economic aspects.

Technical cooperation

The goal of technical cooperation is to enable people and organisations in partner countries to improve their living conditions on their own responsibility and through their own efforts. To this end, technical, economic and organisational skills and expertise are transferred within the scope of TC. Technical cooperation projects are implemented free of charge.

VOB – German contracting rules for award of public works contracts

The VOB is published by DIN (German Standards Institute) on behalf of the German Committee for the Award of Public Works Contracts. It comprises three parts:

- VOB Part A: General conditions for the award of contracts for building works;
- VOB Part B: General contract conditions for the execution of building works. These are general terms of business, which supplement the works contract law of the BGB (German Civil Code) with the necessary conditions specific to building works;
- VOB Part C: General technical contract conditions for building works.

Vulnerability

The vulnerability of a society is determined by such circumstances and influencing factors, that cause the existing resources and potentials of societies, population groups and individuals to be inadequate for the solution of problem situations by their own means, thus making them unable to prevent the occurrence of a disaster. The degree of vulnerability determines the degree of damage that results from a disaster. The basic cause of vulnerability can lie in socio–economic, political and ecological instability, or a combination of these factors.

Warranty

is the guarantee for a faultlessly executed piece of work continuously over a fixed period of time. In the case of building measures in emergencies, the warranty period should, depending on the situation, cover at least one year, or better still two years. In Germany it has recently been extended to 5 years for building projects.

11. Abbreviations

AA	Federal Foreign Office
BMZ	Federal Ministry for Economic Cooperation and Development
ECHO	European Community Humanitarian Office
EU	European Union
DC	Development cooperation
DEA	Development–oriented emergency aid
FA	Financing agreement
FC	Financial cooperation
FIDIC	Fédération Internationale des Ingénieurs–Conseils
GO	Government organisation
GTZ	German Technical Cooperation
HOAI	German fee scale for architects and engineers
IFRC	International Federation of Red Cross and Red Cresent
KfW	(Kreditanstalt für Wiederaufbau) The German Development Bank
NGC	Non–commercial general contractor
NGO	Non–governmental organisation

O + R	(GTZ–internal) orientations and rules
OCHA	United Nations Office for the Coordination of Humanitarian Affairs
SWIFT	Money transfer system within the “Society for Worldwide Inter–bank Financial Telecommunication”
THW	German Federal Agency for Technical Relief
TOR	Terms of reference
TC	Technical cooperation
UN	United Nations
UNDP	United Nations Development Programme
UNHCR	United Nations High Commission for Refugees
VOB	German contracting rules for award of public works contracts
WFP	World Food Programme