Checklist

Building Projects in Development Cooperation and Disaster Management

Tool for Otimisation
with Basic Aspects
for Implementing Minimum Security Standards

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PROJECT:	
LOCATION:	**GPS COORDINATES:**
town / village:	longitude: ….° …. ” ….' E
quarter / district:	latitude: ….° …. ” ….' S
community/chief:	altitude (above see level *m*):
contact person:	

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Contact List:

Nr.	Name, Forename	Organisation	Telephone	E-mail

Checklist Building Security in DC and DRR

This checklist is intended to address essential aspects of building safety, that are usually of importance in single and multi-storey buildings, with private, public and commercial uses and with a clearly definded number of users. It could be used in the context of planning, successive monitoring and the final evaluation of building projects. Being not complete the list was conceived as a living document and should be adjusted upon need respectively and regularly. Available valid building regulations and rules / standards of a respective country must be adhered to, but also checked with regard to possible faults and defects. This checklist is only a tool and is solely on your own responsibility. It is not a substitute for missing building regulations.

Gliederung:

- A: General Aspects
- B: Building Site and Site Development
- C: Material und Components
- D: Supporting Structure
- E: Fire Protection
- F Health, Users and Enviromement
- G: Technical Supply and Equipment

Nr.	Basic Aspects:	yes / no	Remarks:
A: General Requirements			
A-01	Are there chronic risks in the project environment that are always to be expected (recurrent flooding, heavy rain or storms, poor construction, poor technical knowledge and experiences, other), if so which ones?		
	In what frequency ?		
	How is the population prepared for this? (Warning systems, evacuation plans, others)		
A-02	Are there any irregular acute risks in the project environment, such as extreme weather or natural events (earthquakes, landslides, volcanic eruptions, others), if so, of what kind?		
	In what frequency ?		
	If so, how is the population prepared for it? (Provision of shelters, particulary resilient building structure, other measures)		
A-03	Will the project be realized according to national or international building regulations, standards of the sponsor or own standards, if so which are the ones?		
A-04	Are there any state authorities for the approval and supervision of construction projects? If so, for which tasks and at which levels of administration?		
A-05	Which authorities and institutions are involved in the project development? (e.g., building authorities, fire department, civil protection service, health department, others)?		
A-06	Are there any hazardous impacts in the site environment (emissions from factories, sewage, landfills, others) that must users must be protected against, if so, which ones?		
A-07	Are experts involved in safety-relevant questions (supporting structure, fire protection, health, hygiene, other), if so, which ones?		
A-08	Is the building accessible without restriction to persons with different gender, age, mobility, physical / mental mobility, if not, what measures are considered to be taken?		
A-09	Are parapets and guardrails safe for children? (Height, no horizontal fill bars to prevent from overclimbing)?		
A-10	Are the follow-up costs for care, maintenance, repairs and maintenance of buildings taken into account in the overall project planning and long-term cost calculations?		

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Nr.	**Basic Aspects:**	**yes / no**	**Remarks:**
A-11	Does the protection of buildings / rooms from overheating and the creation of favorable climatic conditions play a role and is this taken into account (eg building orientation), if so how?		
A-12	Is the protection of persons in case of fire ensured, if so how (fire brigade, ambulance)?		
B: Building Site and Site Development			
B-01	Which site parameters of the site are gathered or queried in advance and taken into account:		
	local climate data (course of the sun, temperature gradients ,local and overall prevalent wind directions, precipitation, others)		
	Location qualities, topography of the site (hillside, surface water, other)		
	Soil investigation (types of soil layer and stratigraphy, landfills, soil contamination, groundwater, disposals, old pits, warfare materials, landmines in former combat areas, others)		
B-02	Is the site in the possession of the local partner or beneficiary and is it free from claims of third parties (continuing leasing-contracts, free use of population without land title)?		
B-03	Is the development potential of the site ensured in the intended manner (local planning law, e.g. steep slopes, soil erosion, flooding, wind tunnel effects, others) and confirmed by the responsible authorities (written confirmation)?		
B-04	Is the site connected to a public power supply or are there alternative power supply possibilities? (e.g., diesel generator, solar panels, etc.)		
B-05	Is the site connected to a public drinking water supply or are there another supply possiblilties? (e.g. groundwater-well, delivery service, water treatment facilities, others)?		
B-06	Are there any natural sources of water supply on the property or in the vicinity and have they been tested as well as compared for their potential usabilities? (e.g. ground-rain-river water, expenses for provision-maintenance-repair, drinking-farming-sanitation)		
B-07	Can rainwater be safely removed without submerging or otherwise endangering parts of the building and without risks of contamination?		
B-08	Is the site properly connected to public transport routes or is the access secured otherwise? (e.g., secured right of way across a neighboring property)		
B-09	Is the site properly connected to a public sewage disposal or how are the wastewaters disposed of otherwise? (e.g., pit, 2- / 3 chamber system + drainage shaft)		

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Nr.	**Basic Aspects:**	**yes / no**	**Remarks:**
C: Materials and Components			
C-01	Are the intended materials, components and constructions locally in use and how are the required specialists available?		
C-02	According to which criteria are components, materials selected?		
	- Production costs		
	- Lifespan		
	- maintenance and running costs		
	- Protection of natural ressources		
	- Construction speed		
C-03	Is the evaluation of the above criteria carried out by a competent body or person and who makes the selection (local Partner, architect, civil engineer, others)?		
C-04	Do used materials pose a risk to health of users and beneficiaries (such as asbestos, toxic paints, sealants, preservatives), if so, which materials and where?		
C-05	Are PVC-containing components used, if so which ones and where?		
C-06	In areas where termites or other insects may be harmful to the constructionr: Are there suitable non-toxic protective measures taken, and if so, which ones?		
D: Supporting Structure			
D-01	Are all available informations on possible risks (earthquakes, strong winds, flooding, others) from national and/or international rules and standards taken into account in the overal planning?		
D-02	If the area is at risk, how will the safety of users be ensured:		
	- by the maximum stability of the buildings?		
	- by secure temporary shelters / buildings?		
	- by evacuation plan or other measures?		
D-03	Is it ensured that the necessary measures for the proper execution of the supporting structure are implemented completely and according to the given specifications, if so how?		
D-04	Will neighboring buildings be exposed to risks during the construction process or after the completion of the project (eg stability, fire, etc.), if so which?		
D-05	Are the necessary and attainable quality of execution weighed against each other in a realistic manner (that is, the technical skills of the contractor and the manpower as well as the materials / components used)?		

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Nr.	**Aspects for different project settings:**	**yes / no**	**Remarks:**
E: Fire Protection			
E-01	Is there a sufficient unhindered access to the site and the buildings available for helpers (fire brigade, ambulances)?		
E-02	If so are theiy coordinated with the lovcally responsible authorities?		
	If necessary, will safe meeting points on the site be kept accessible for building users, made known and signed to carry out rescue measures?		
E-03	Are there sufficient escape routes, staircases, corridors in the building? (1st + 2nd rescue route, sufficient length+width, emergency exits, inflammability of materials, sufficient fire resistance)		
E-04	Are the main entrances / exits to the building accessible and usable safely and unassisted by persons with physical disabilities e.g. by ramps or equivalent facilities?		
E-05	Are the circulation areas in the building adequately dimensioned, exposed and ventilated for the expected number of people?		
E-06	Are special components required to prevent the spread of smoke and fire as well as warning the user?		
	- Fire walls, smoke and fire divisions (horizontal / vertical)		
	- Smoke and fire doors, fire dampers		
	- Fire extinguisher (type of use, number, distribution)		
	- smoke and fire detection and reporting devices (smoke detectors, fire alarm buttons, sirens, others.)		
	- Escape route signs, escape route plans, fire brigade plans, fire protection regulations		
E-07	Are escape doors designed in order to open at opening times (usually in the direction of escape) and are they easy to open from the inside without obstructing escape routes?		
E-08	Is there a need for premises for the storage of flammable materials, fuels of all kinds, colors, oils or similar, if so, which ones and are there any risks for the users?		
E-09	Are safety devices always accessible without hindrance and are they regularly maintained?		
E-10	Are supply lines/pipes (electrical, water, heating, ventilation, etc.) laid without risk of fire / smoke transmission into escape routes (emergency corridors, staircases, safe building sections)?		
E-11	Do all rooms that serve a permanent stay have a second escape / rescue route (for example windows: W / H> 90/120 cm)?		
E-12	Are escape / rescue routes always to open unhindered from inside during operation time of the building?		
E-13	Do rooms for more than 30 pesons have an 2nd escape door directly to the outside or to another safe room?		

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Nr.	**Aspects for different project settings:**	**yes / no**	**Remarks:**
F: Health, Human Standards and Environment			
F-01	Buildings, dwellings and rooms for the permanent stay of persons are to be designed so that they can be used without restriction by people with special needs (for example wheelchair users, elderly, children, others):		
	- basically and at all levels		
	- in all rooms on the ground floor only		
	- in the following parts of the building:		
F-02	The following aspects should be taken into account in the planning of rooms for the permanent stay and use of persons:		
	- Insulation (high/low temperature)		
	- Noise Protection		
	- Heat Storage		
	- Heating		
	- Cooling		
F-03	The equipment of / with sanitary facilities is in line with:		
	- hygienic and according to the cultural conditions		
	- separated according to user groups		
	- as needed in sufficient numbers		
	- inside or outside buildings		
F-04	If necessary exhaust flaps of ventilation tubes or and wastewater tubes are located above window openings usually above the roof.		
F-05	The drinking water is regularly examined according to national / international standards, if so how often and which standard.		
F-06	International standards for the construction of sanitary facilities, for watersupply / wastewater disposal and hygiene (WASH) are complied with? If not how is the health of the users ensured?		
F-07	If necessary the storage for cleaning utensils and facilities is spatially separated in cleaning room.		
F-08	A first aid kit (first aid kit) for the provision of standard accidents and for the initial care of serious accidents is provided.		
F-09	If necessary, inaccessible cavities in floors, ceilings, walls and roofs are planned in a way that insects will not penetrate and condensed water or humidity will not emerge or otherwise could escape.		
F-10	If necessary, individual rooms without natural ventilation can be mechanically (electrically) ventilated with a secured power supply.		
F-11	The biodiversity of the environment is taken into account. In the case of indications of protected or rare plant and animal species, a coordination with the responsible local authorities takes place.		

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Nr.	**Aspects for different project settings:**	**yes / no**	**Remarks:**
G: Technical Suppy and Equipment			
G-01	Water supply 1: Is the water demand determined according to the different uses? (Drinking water, cleaning, supply of plants and animals, etc.).		
G-02	Water supply 2: Is there a separation of drinking water and greywater on the site / in the building? (separate lines and taps with marking required)		
G-03	Water storage: Are there facilities for storing drinking water or greywater, if so what kind? (Cistern, with / without pump, -> efficiency, supply security, possibilities of maintenance and repair).		
G-04	Water heating: Is there a central hot water supply with distribution networks, if so, is it planned by a competent expert so that the development and spread of bacteria, especially Legionella, can be avoided?		
G-05	Wastewater + Hygiene: What sanitary facilities are there inside buildings?		
	- Dry toilets with container **(**pit latrines, outhouses**)**		
	- WCs with flushing water		
	- hand wash basins		
	- Cisterns for refilling		
	- showers		
	- detergents for handwashing		
	- separated rooms according to cultural conventions		
G-06	The planning of the water supply, sewage disposal and hygiene is carried out by a qualified specialists? (e.g., professional equipment planners, installer)		
G-07	Electrical installation is provided for the building or parts of it.		
	If so, will it be taken over by a qualified specialist? (e.g., specialist planner, electrician)		
G-08	Power supply: The possibilities of decentralized electricity production by diesel generator or regenerative energy are examined in terms of supply security, maintenance, provision and follow-up costs, availability of spare parts, sustainability.		
G-09	Hospitals + Health Centers: Neutralization tanks and solid waste collectors for collecting chemically contaminated water are considered in the planning of wastewatertreatment.		
G-10	Canteens and professional kitchens: food products are stored in separate rooms according to the respective requirements of sufficient size and equipped with appropriate fresh air supply.		
G-11	Canteens and professional kitchens: Waste is stored, ventilated and cooled in separate rooms according to the respective requirements (inorganic / organic, dry, humid).		
G-12	Canteens and professional kitchens: Rooms where hot food is prepared and / or dishes are washed are adequately provided with light, ventilated and provided with separating devices for grease, washing facilities, others.		