Projects library of the specialised group of construction **SHELTER**

Project **Housing**

Project name **Durable Solutions for Collective Centre Residents**
DuSoCC in Northern Caucasus (Russian Federation)
RUS48 Standard "Turn-Key" Houses Programme

Region/Town	**Ingushetia (RI)** **North Ossetia-Alania (RNOA)** **Chechnya (ChR)**
GIS data (WGS 84)	**---**
Project type	**New construction**
Typology	**Individual housing**
Approach	**Contracted work**
Beneficiaries	**IDPs / Refugees**
Climate	**Moderately continental**
Special constraint	**Earthquakes, landslides**
Start / End of project	**2006 / ongoing**
Country GDP	**9,075 USD/cap (2007)**
Update	**26 November 2010**

Partners

Organisation (Implementer)	UNHCR Northern Caucasus (UNHCR Sub-Office Vladikavkaz)
Donor	Programme co-funded by SDC/SHA
IO/NGO partners	--- none
GO partners	Ingushetia: Local administration North Ossetia-Alania: Migration Service Chechnya: Local administration

Context to project

Initial Situation	Ingushetia: UNHCR reintegration programme in favour of Ingush IDPs from Prigorodny district (RNOA) and Chechnya North Ossetia-Alania: UNHCR reintegration programme in favour of Ossetian refugees from Georgia Chechnya: UNHCR reintegration programme in favour of Chechen IDPs displaced in Chechnya itself
Goals, Beneficiaries	Durable housing solution in favour of temporarily accommodated especially vulnerable individuals (female headed families, elderly people, …)
Implementations / Results	134 RUS48-Standard "turn-key" houses 2006-2010: - 122 objects at 24 locations in Ingushetia - 7 objects at 1 location in North Ossetia-Alania (cluster solution) - 5 objects at 1 location in Chechnya (Grozny town)

Reference data (comparative)			
Land plot (per house unit)	Ø ~ 600 m²	Garden (per house unit)	Ø ~ 300 m²
Ground floor (walls included)	48 m² (10.00 x 4.80)	Floor	1 floor, ground floor only
Occupants max.	5 persons	Occupants min.	2 persons
Total house area	32.54 m²	Surface/occupant	6.51 m²/cap (5) 16.27 m²/cap (2)
House volume (gross volume)	202.03 m³	Volume/occupant	40.41 m³/cap (5) 101.02 m³/cap (2)
Number of rooms	2 rooms	Occupants/room	1 – 2.5 cap/room
Heated area	27.66 m²	Heated area/occupant	5.53 m²/cap (5) 13.83 m²/cap (2)
Cost/unit	20,878 USD UNER August '08 23.47	Cost/occupant	4,176 USD/cap (5) 10,439 USD/cap (2)
Cost/m²	435 USD/m²	Cost/m³	103 USD/m³
Total housing cost (= Cost/unit)	20,878 USD UNER August '08 23.47	Self help (beneficiaries)	~ 100 USD/object
Community development projects cost => infrastructure: - drinking water supply - power network connection - gas network connection - sewage / septic tank - access road	+ ~ 2,088 USD (= + ~ 10% of Total housing cost)	Community development projects cost/occupant => infrastructure: - drinking water supply - power network connection - gas network connection - sewage / septic tank - access road	+ ~ 418 USD/cap(5) + ~ 1,044 USD/cap(2) (= + ~ 10% of Total housing cost)

Approach to results

Initial Situation

2006, when the programme has been started, years after the armed conflicts in the Caucasus ended (1st & 2nd war in Chechnya 1994-1996 & 1999-2001, the war following the secession of South Ossetia from Georgia 1989-1992 and the Prigorodny conflict between Ingushetia and North Ossetia 1992) there was still a substantial number of IDPs and refugees in need of shelter assistance in Northern Caucasus.

The figures reads as follows:

- Ingushetia (figures update as on 30.12.2005):
  . IDPs (from Chechnya): 19,822 Chechens + 6,197 Ingushs
- North Ossetia-Alania (figures update as on 01.01.2006):
  . refugees (from Georgia inclusive South Ossetia): 16,686
  . IDPs: 882 from Chechnya + 10 from Ingushetia

These IDPs and refugees have either been accommodated in collective centres in Ingushetia and North Ossetia or found a temporary accommodation in private sector. They live mostly in very poor conditions.

Approach

Individual dwelling houses construction at privately owned building land:
RUS48-Standard "turn-key" houses programme:
48 m² standard layout (10.00 m x 4.80 m)
direct implementation by UNHCR (local contractor)

Problems/Constraints

Volatile security situation in Ingushetia:
some construction sites temporarily not accessible due to security reasons

Lessons learned

Housing objects construction under the following conditions only:
- plot fully developed: all utilities available on site (water, power, gas)
- access all-weather road trafficable by trucks (building material supply)

Evaluation

Final 2006-2010 programme evaluation scheduled by the end of 2010

Legal framework

Politically attached to	24 local administrations in Ingushetia: Nazran, Nasyr-Kort, Altievo, Gamurzievo, Ali-Yurt, Ekazhevo, Gazi-Yurt, Surkhakhi, Yandare, Barsuki, Troitskaya, Berd-Yurt, Nesterovskaya, Sleptsovkaya, Karabulak, Plievo, Novy Redant, Aki-Yurt, Zyazykov-Yurt, Sagopshi, Malgobek, Verkhnye Achaluki, Kantyshevo, Dolakovo 1 local administration in North Ossetia-Alania: Krasnogor 1 local administration in Chechnya: Grozny
Type of ownership	Creation of private property: formal handing-over of the completed object to the beneficiaries

Construction information

			Cost USD	Repartition [%]
Construction	RUS48 UNHCR "turn-key" Standard House for Housing Programmes in Northern Caucasus Standard layout 10.00 m x 4.80 m = 48 m² (designed 2006, slightly modified 2008); optionally extendable – suggestion: extension to L-shaped layout, 85 m², 2 additional rooms (see annex)			
Shell	Foundations + outside work	reinforced concrete – construction: steel reinforced frame; concrete slab d = 20 cm, reinforced by steel grid inlay, basis layer of gravel d = 15 cm; bituminized cardboard moisture isolation strip between concrete slab and brickwork; 3 steps to the entrance, concrete with cement coating (1.10 x 0.30 x 0.15); concrete strip around the house 3 sides b_1 = 0.60 m, 1 side (along main façade), b_2 = 1.20 m	3,758	18
	Bricklaying (exterior): Façades	façade with 3 layers, dimension in total d = 47.5 cm according to Russian standard – => 12.5 cm outer shell in façade bricks + 10 cm heat insulation (mineral wool) + 25 cm inner shell in concrete blocks => thermal transmission coefficient U < 0.3 W/(m²·K) or as an alternative solution: façade with 2 layers, dimension in total d = 25 cm – => 12.5 cm outer shell in façade bricks + 12.5 cm inner shell in backfill bricks (substandard quality) – no heat insulation	4,384	21
	Seismic belt (Ring beam)	ring beam (d = 25 cm / h = 20 cm) – reinforced concrete belt top of façades brickwork	1,461	7
	Bricklaying (interior): Partitions	all partitions in bricks d = 25 cm or as an alternative solution: all partitions in bricks d = 12.5 cm	626	3
	Roof: Carpentering	hipped roof ("pyramidal"); roof slope ≈ 30°	1,253	6
	Roof: Covering	covered with corrugated zinc-plated steel roof sheets with ridge caps, canopy above front door (1.50 x 1.20) as a roof extension	835	4

Interior work	Joinery: Windows Doors	A) Windows: double glazed plastic windows, all windows with plastic window sills outside & inside, dimensions strictly standard: only two dimensions (width x height), opening inwards a) small (≈ 0.50 x 0.80) – 1 in bathroom, 1 in storeroom, 1 in kitchen/living room b) large (≈ 1.08 x 1.39) – 1 in living room, 1 in bedroom B) Doors: interior doors in timber, to be painted by the beneficiary, front door in steel (made in China), dimensions strictly standard: three dimensions (width x height) a) entrance steel door "Made in China" (1.10 x 2.05) b) interior doors in timber, to be painted by the beneficiary ba) bedroom (0.90 x 2.05) bb) bathroom & storeroom (0.70 x 2.05)	1,670	8
	Flooring	concrete with cement coating in kitchen/living room, bathroom, storeroom & corridor; wooden floor (fir planks) in bedroom; no ceramic tiles (to be done by the beneficiary)	2,297	11
	Ceiling + insulation	sandwich-type (gypsum) plasterboard construction (whitewash to be done by the beneficiary), service opening (0.60 x 0.60) in corridor; heat insulation: mineral wool, 2 layers d = 5 cm => 10 cm	835	4
	Plastering	walls plastering (cement plaster) no ceramic tiles (to be done by the beneficiary)	1,461	7
	Painting Whitewash	--- excluded --- (to be done by the beneficiary)	0	0
Installations	Sanitation Septic tank	A) Water supply system: outlet to public water supply system prepared: Ø 110 mm pipe, + 1.00 m from façade B) Bathroom: washbasin, bath tub (1.60 x 0.70) & complete toilet (bowl & tank), electro water boiler (30 litres), one joint tap for washbasin & bath tub, water pipes to tap & toilet tank, drain pipes C) Kitchen: sink (double unit) combined with vanity unit, tap for sink, water pipe to tap, drain pipe D) Sewage system: septic tank (or leaking pit): prefabricated cylindric concrete element, capacity: Volume ≈ 6.5 m³, complete septic tank (or leaking pit) with concrete cover, inclusive manhole & ventilation (delivery & installation by contractor), connection to bathroom & kitchen drains	1,670	8

	Wiring/Power	outlet to power supply system (220 V), distribution box / fuse box (with 2 16 A contactors) in corridor next to entrance 6 ceiling lights: outdoor next to front door (1), in corridor (1) & in all rooms (1 + 1 + 1 + 1) 6 switchers: outside next to front door (1), in corridor (1) & in all rooms (1 + 1 + 1 + 1) 5 sockets: in kitchen/living room (2), in bedroom (2), in bathroom (1)	209	1
	Gas/Heating	metal stove in kitchen (for heating/cooking with gas or firewood), chimney in kitchen (construction in brickwork); future connection to public gas supply system prepared: gas pipe Ø 15 mm in kitchen	418	2
Total			**20,878**	**100**

Urban planning

Distance to	Health center	from 1 (Karabulak) to 5 km (Berd-Yurt)
	Education facilities	from 1 (Karabulak) to 5 km (Berd-Yurt)
	Income activities	from 1 (Karabulak) to 5 km (Berd-Yurt)
	Public transport	from 1 (Karabulak) to 5 km (Berd-Yurt)
	Shopping facilities	from 1 (Karabulak) to 5 km (Berd-Yurt)

For further information

Involved SHA construction group consultants	René Edward Knupfer Technical Coordinator SDC/SHA Secondee at UNHCR Northern Caucasus UNHCR Sub-Office Vladikavkaz
Other involved SHA consultants	--- none
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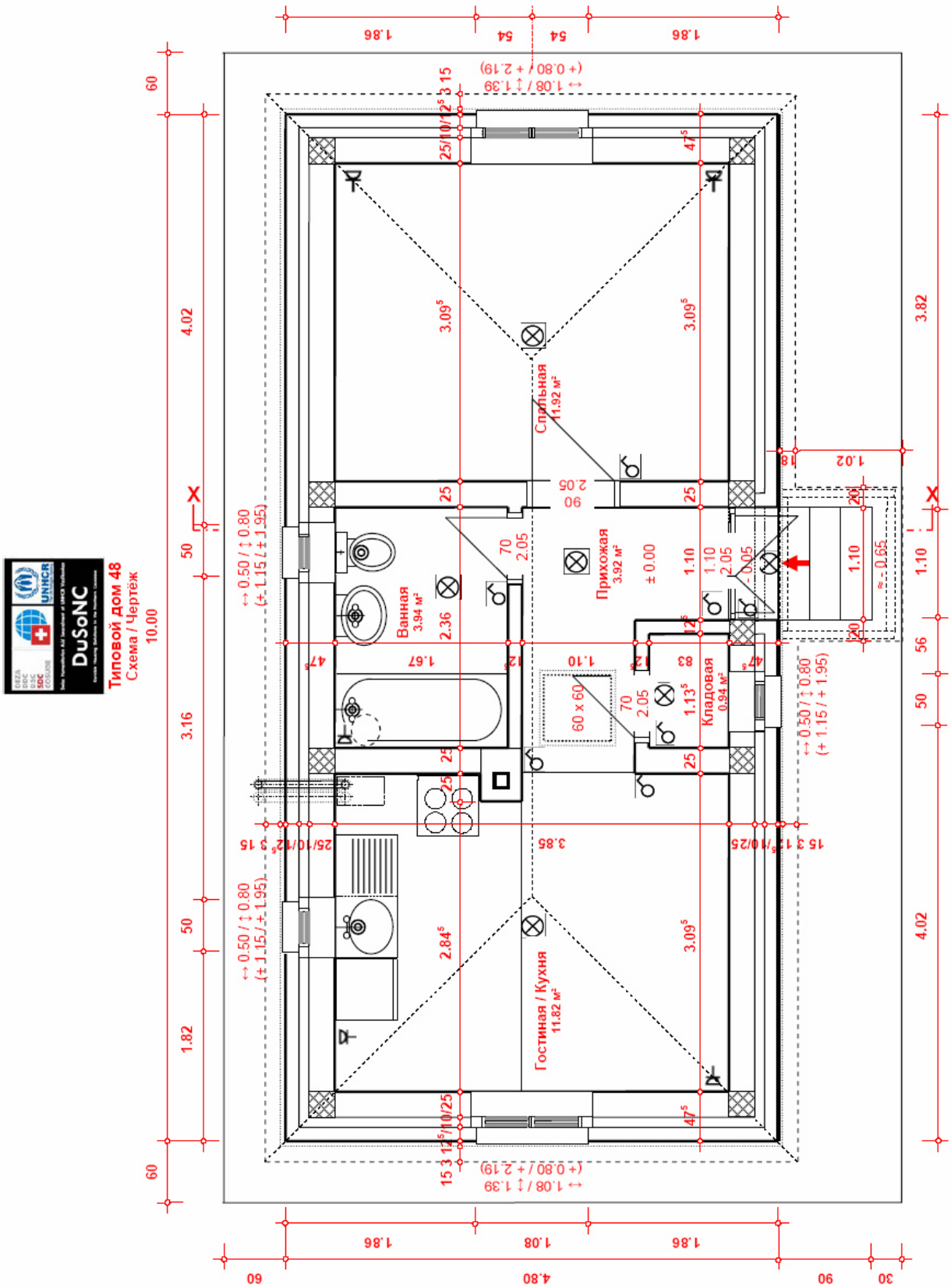
Recommended institutions:	UNHCR Northern Caucasus (UNHCR Sub-Office Vladikavkaz)
Recommended partners:	--- none Direct implementation without implementing partner
Recommended books/reports:	DuSoNC-RUS RUS48 Standard Houses Programme (PowerPoint presentation, 2006)
Relevant other projects (links):	- DuSoCC-BiH Housing Programme 1999-2005 (SDC/SHA Secondment at UNHCR Sarajevo) BiH "Turn-Key" Standard Houses Programme - DuSoCC-NC Housing Programme 2006-2010 (SDC/SHA Secondment at UNHCR Vladikavkaz) RUS48 Standard "Self-Help" Houses Programme
Annex	RUS48 Standard "Turn-Key" House extension: Suggested layout

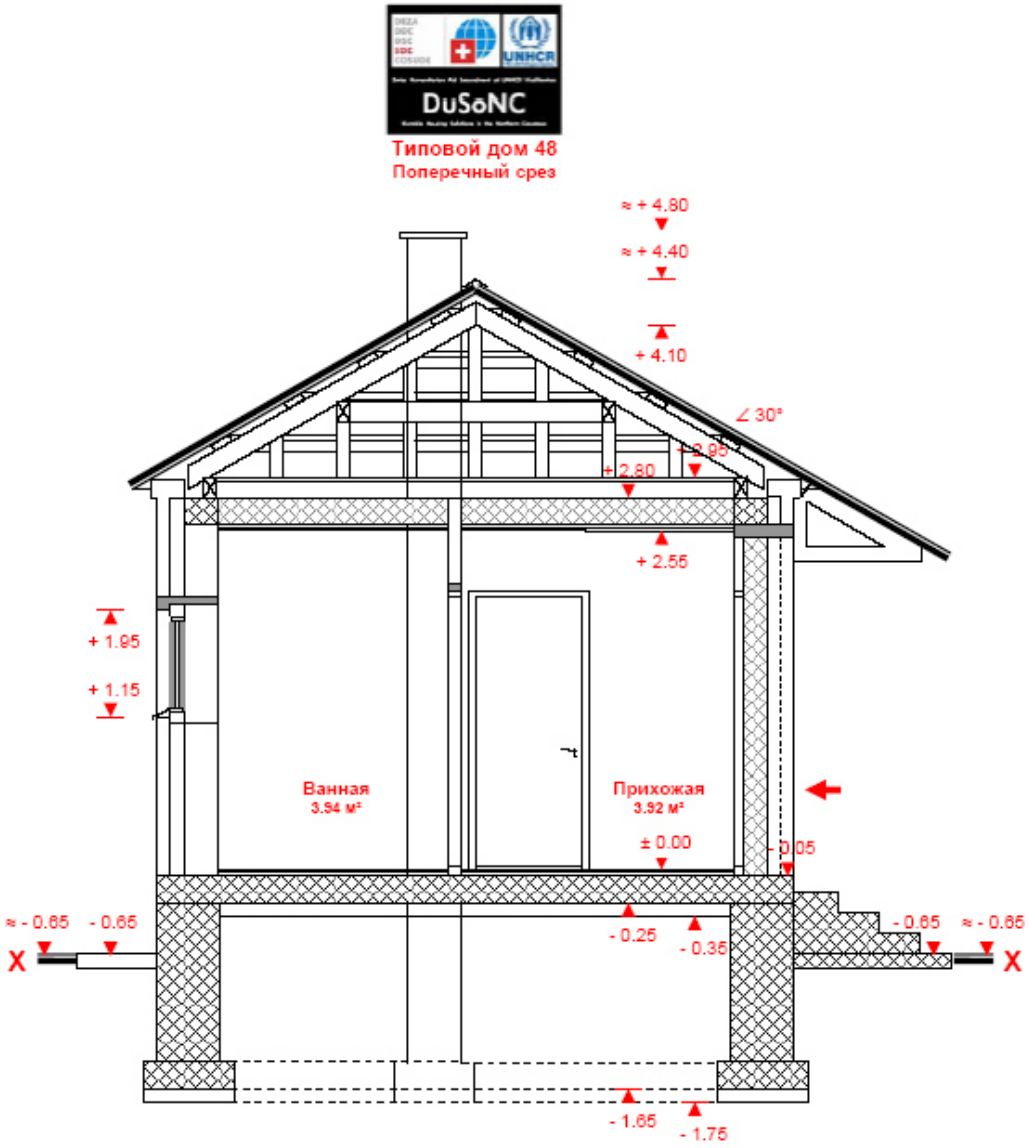
RUS48 UNHCR "Turn-Key" Standard House for Housing Programmes in Northern Caucasus

Layout



RUS48 UNHCR "Turn-Key" Standard House for Housing Programmes in Northern Caucasus

Cross Section



Annex

DEZA DDC DSC SDC COSUDE — UNHCR The UN Refugee Agency
Swiss Humanitarian Aid Secondment at UNHCR Vladikavkaz
DuSoNC
Durable Housing Solutions in the Northern Caucasus

Типовой дом 48

RUS48 UNHCR "Turn-Key" Standard House – House Extension

⇨ RUS48 UNHCR "Turn-Key" Standard House; 10.00 m x 4.80 m = 48 m²

⇨ optionally extendable (+ 37 m²) from 48 m² (10.00 m x 4.80 m) to 85 m² :
+ [(3.09[5] + 0.25 + 3.09[5] + 0.47[5]) x (0.47[5] + 4.44[5] + 0.47[5])] = + (6.91[5] x 5.39[5]);
the result will be a new L-shaped layout
layout extension partially along front façade (next to entrance/corridor/bedroom),
corridor extension (l = 2.30, w = 1.10) & new entrance to corridor extension,
result : additional two bedrooms,
extension of foundation, façades & roof construction