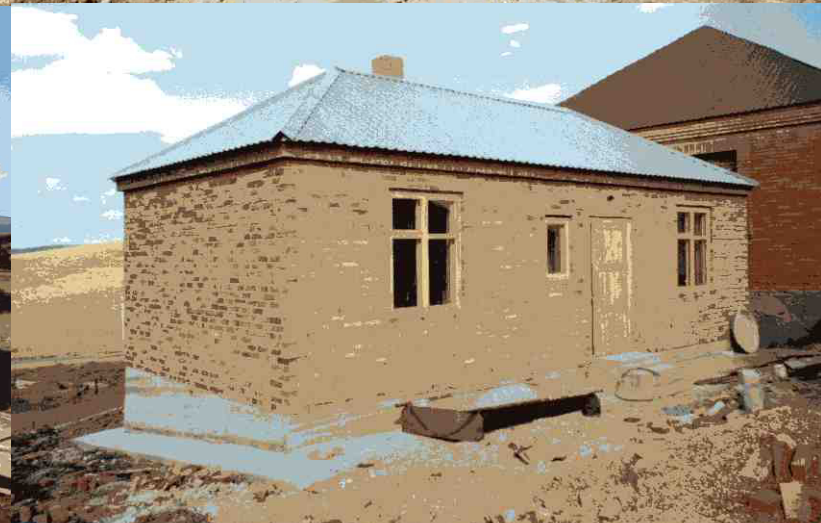


UNHCR 48 m² Standard Houses Programme 2006

René Edward Knufter – DuSoCC Project Manager – UNHCR Sarajevo



DuSoNC-RUS

RUS 48 Standard Houses



Swiss Humanitarian Aid Secondment at UNHCR Vladikavkaz

DuSoNC

Durable Housing Solutions in the Northern Caucasus



Swiss Humanitarian Aid Secondment at UNHCR Vladikavkaz

DuSoNC

Durable Housing Solutions in the Northern Caucasus

Durable Housing Solutions in the Northern Caucasus (Russian Federation)

DuSoNC-RUS 2006

Housing

Housing standard established
on new constructions

■ Individual houses

RUS 48 Standard House

$10.00 \times 4.80 = 48 \text{ m}^2$

DuSoNC-RUS 2006

Housing

Standard space allocation plan

- Living room / Kitchen

- Bedroom

- Bathroom

- Storeroom

- Corridor

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Housing

Standard utilities

- **Connection to water supply or well**
(if not available : construction of a rain water cistern)
 - **Connection to sewage system**
(if not available : construction of a septic tank)
- **Connection to power supply network**
 - **Connection to gas supply system**



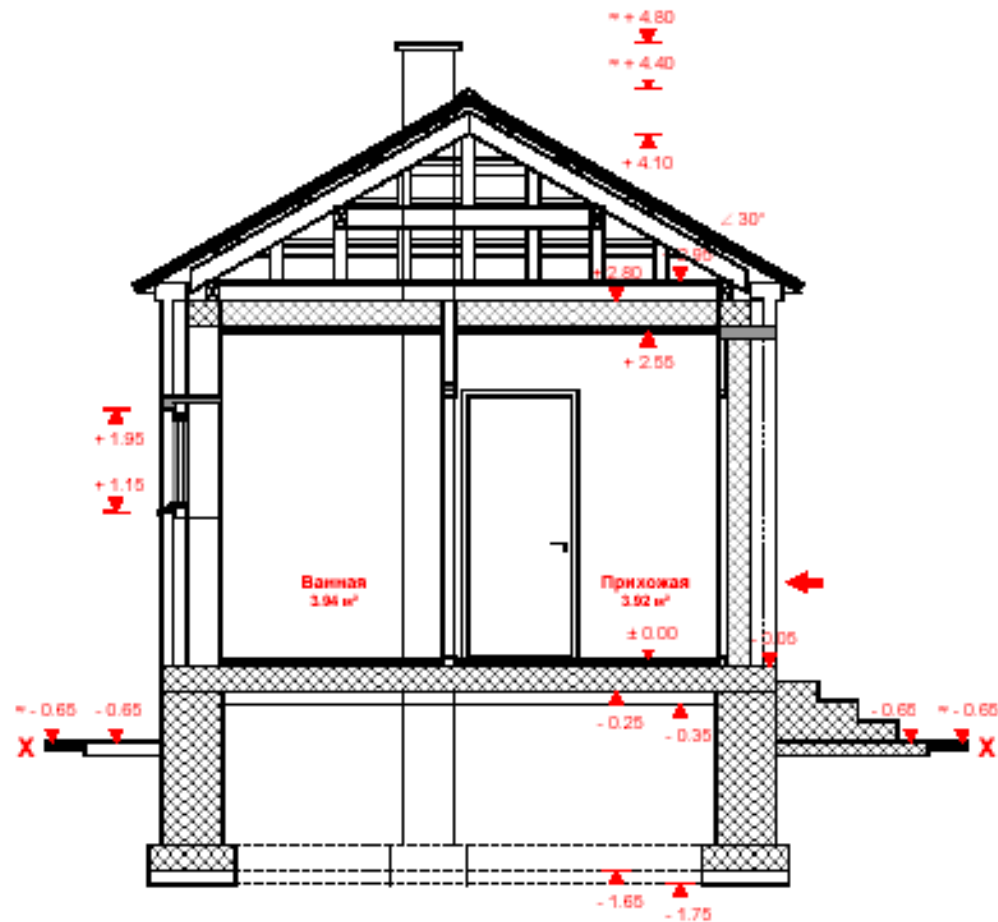
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RUS 48 Standard Houses Programme

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RUS 48 Standard Houses Programme

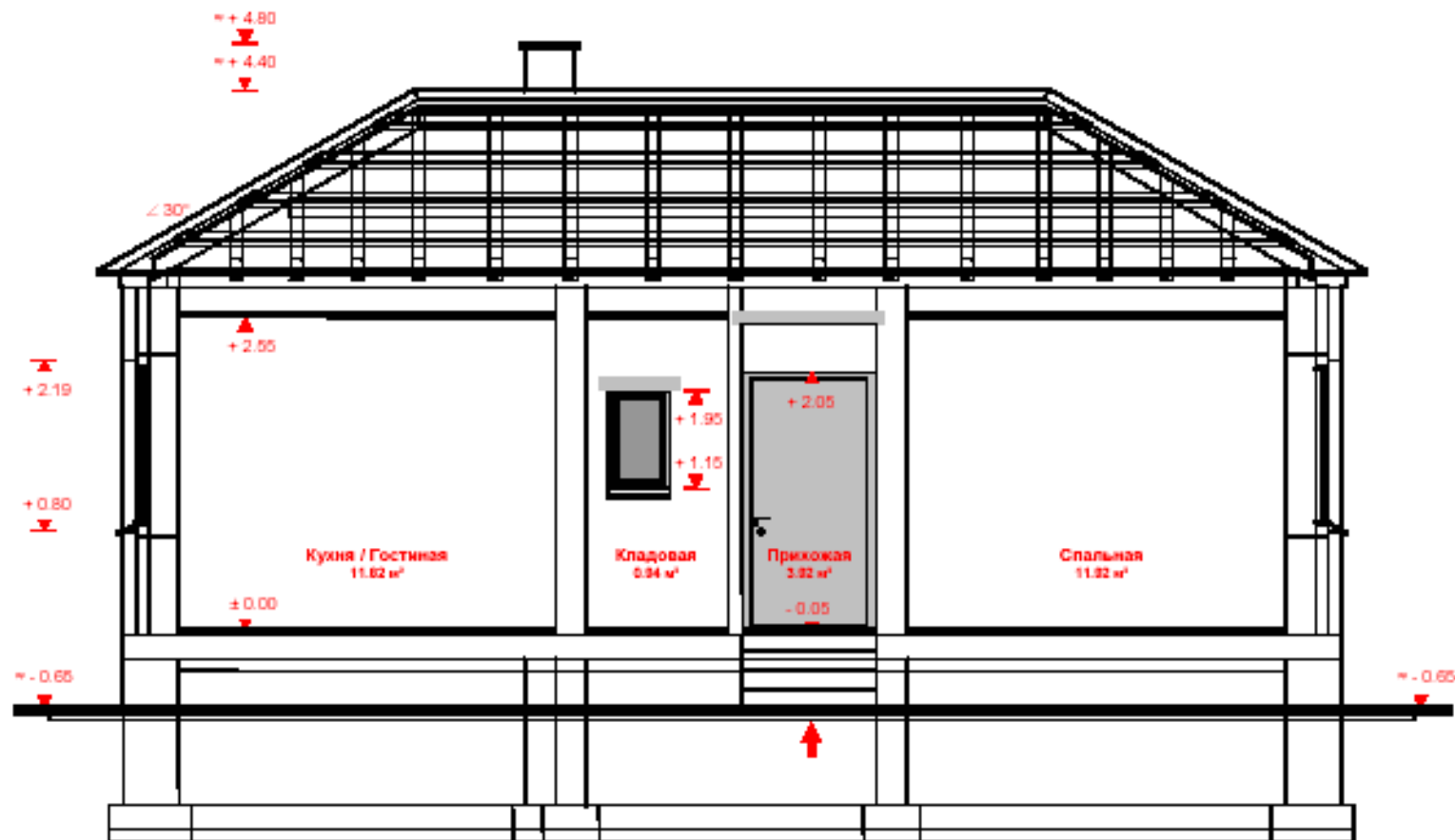
in Republic of	implementation modus	implementation by	phase	nr. of units
Ingushetia	"turn-key"	UNHCR	I	7
Ingushetia	"turn-key"	UNHCR	II	15
Ingushetia	"self-help"	DRC	-	19
North Ossetia	"turn-key"	UNHCR	I	4
North Ossetia	"turn-key"	UNHCR	II	3
sub-total	"turn-key"	UNHCR		29
sub-total	"self-help"	DRC		19
grand total	"turn-key" + "self-help"	UNHCR + DRC		48



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RUS 48 Standard House

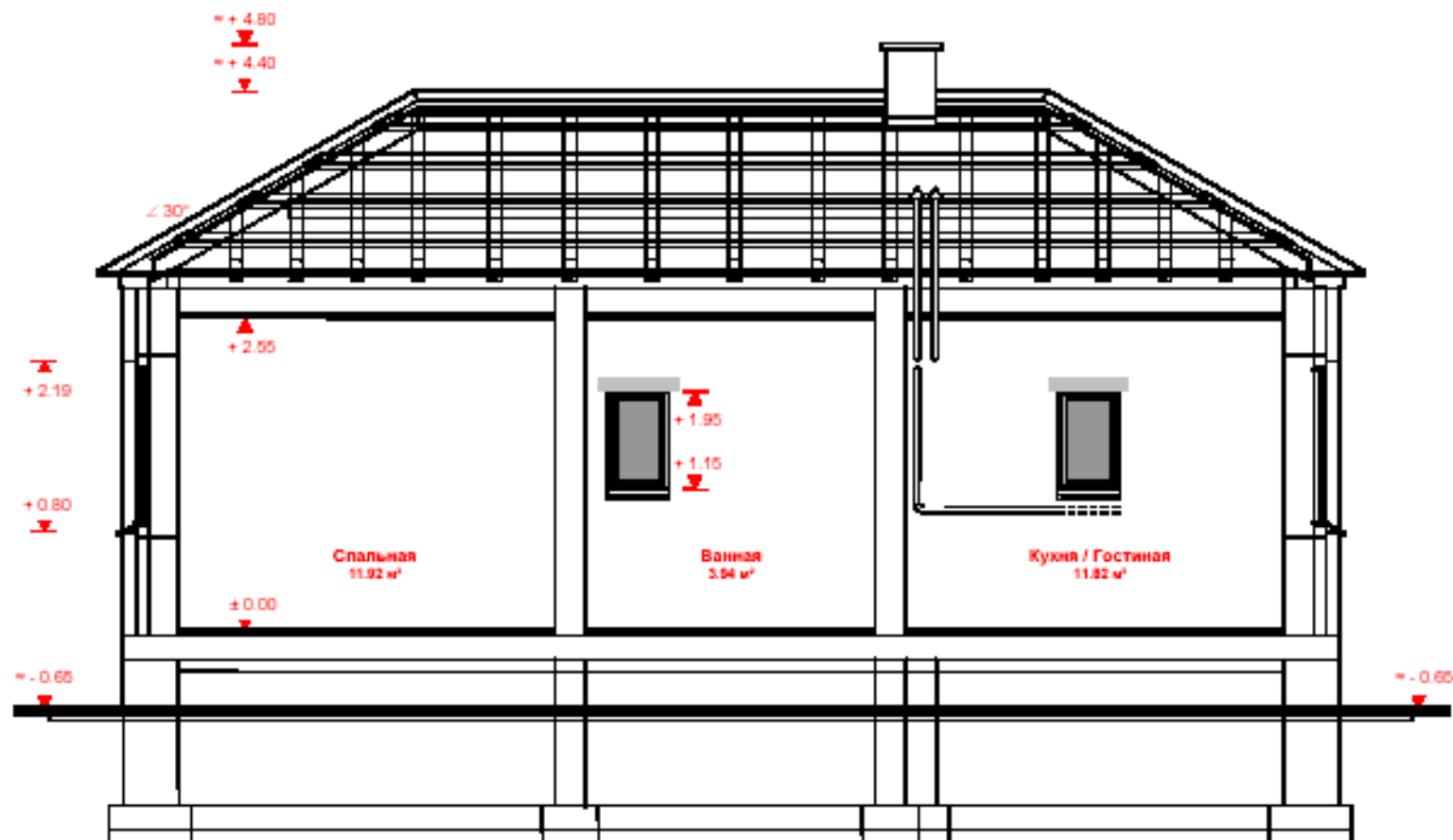
Cross section



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RUS 48 Standard House

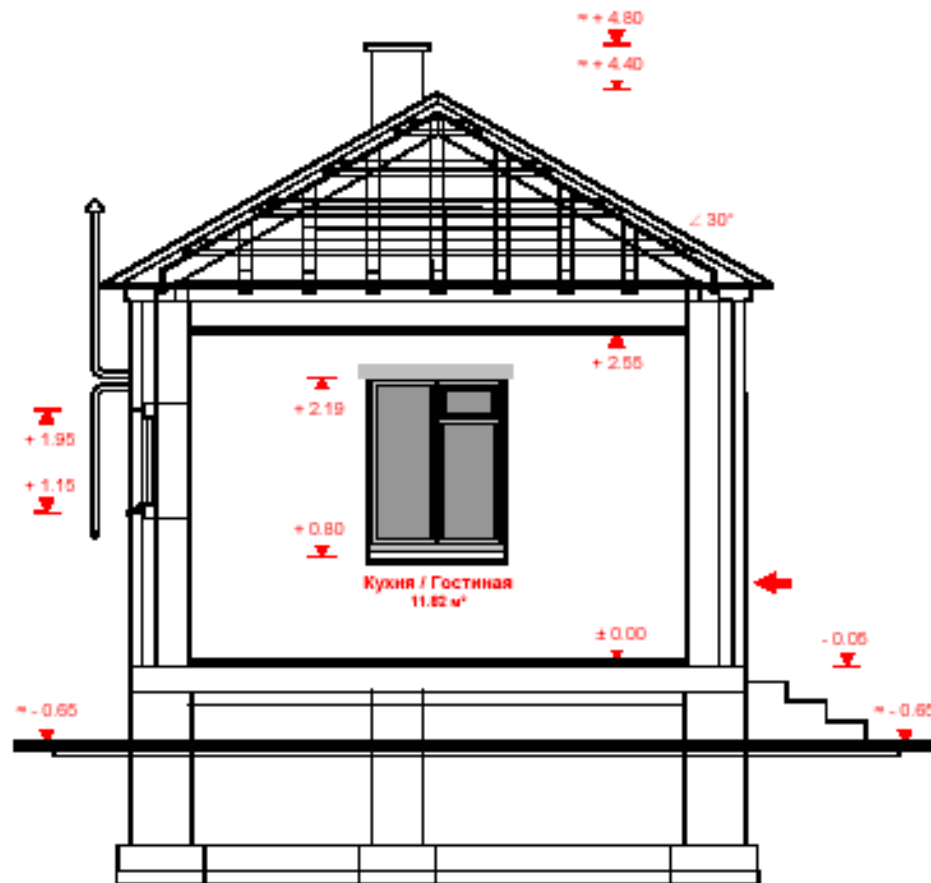
Front façade



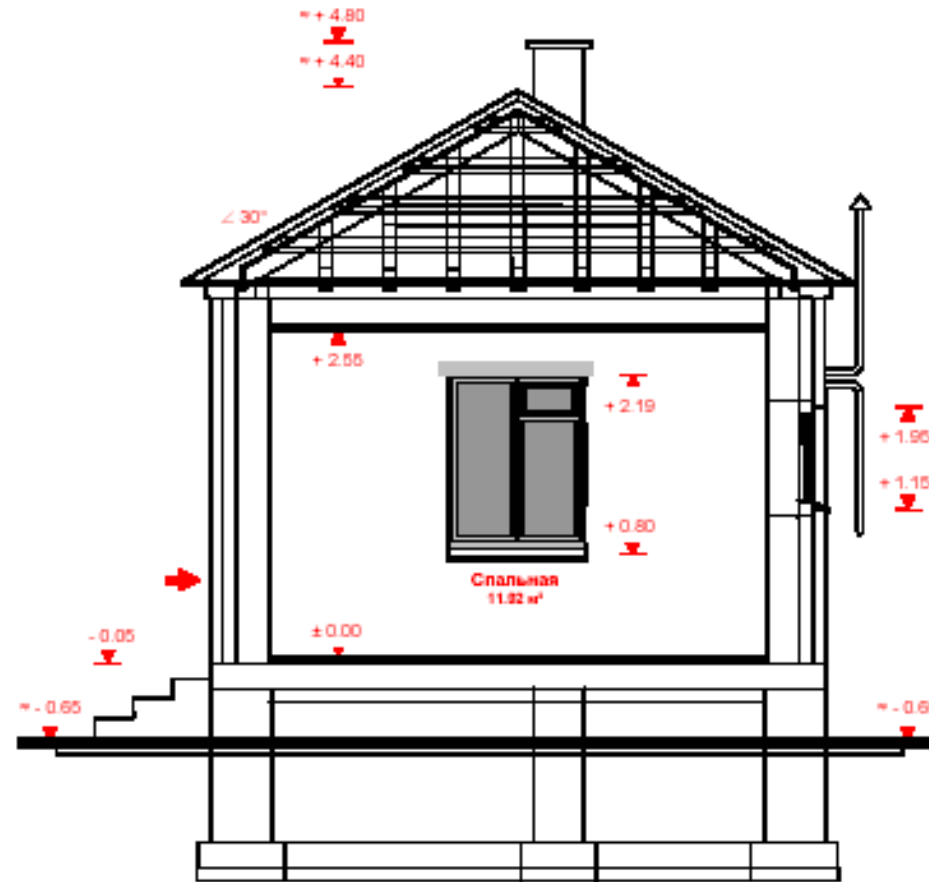
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RUS 48 Standard House

Rear façade



DuSoNC-RUS 2006
RUS 48 Standard House
Side façade (left)



DuSoNC-RUS 2006
RUS 48 Standard House
Side façade (right)

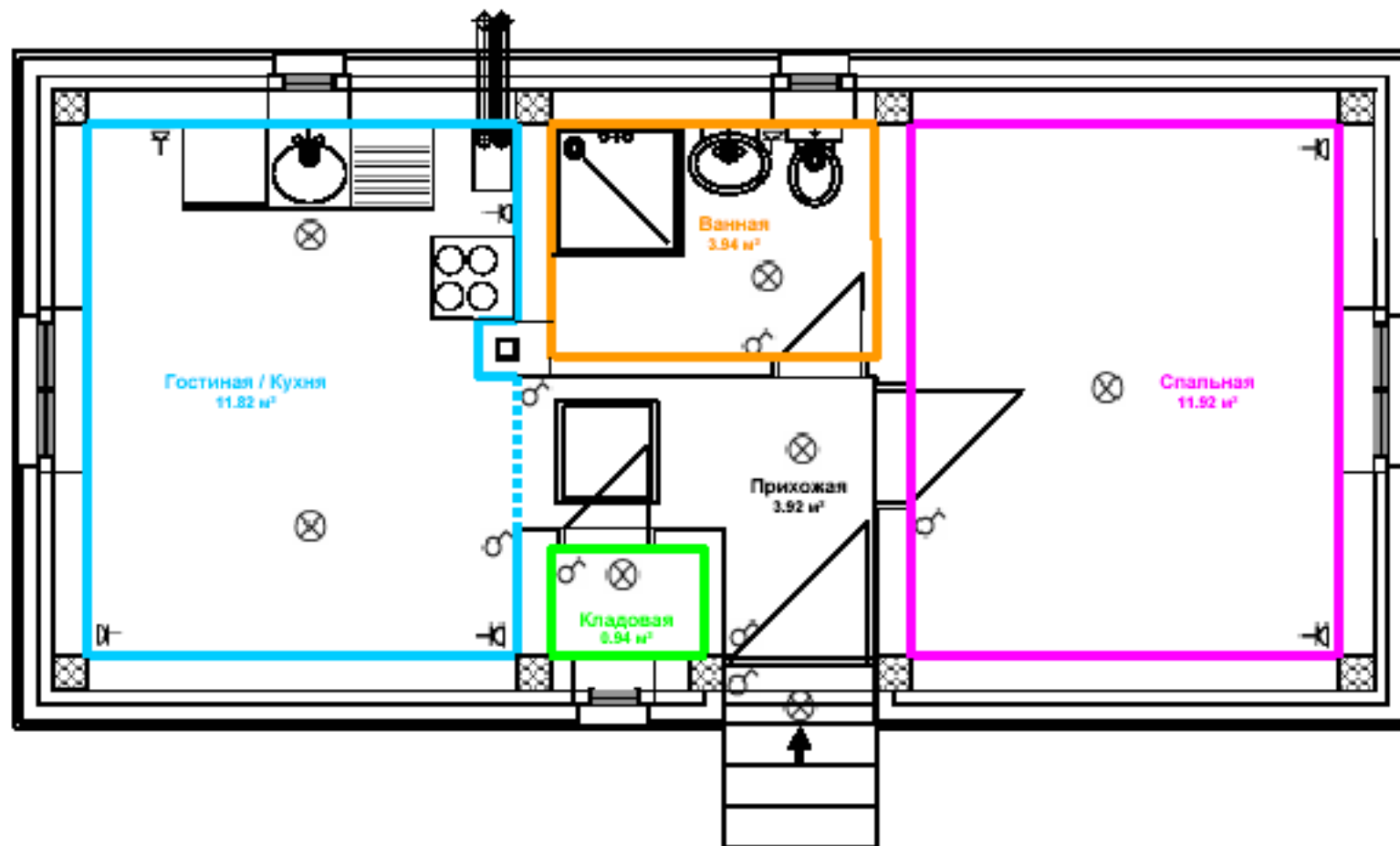


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RUS 48 Standard House
Pilot object : all façades

DuSoNC-RUS 2006

RUS 48 Standard House

Standard & Equipment



DuSoNC-RUS 2006

RUS 48 Standard House

Standard & Equipment

Living Room / Kitchen

Dimension A = 11.9 m² (3.85 x 3.09⁵)

connected to power/water/gas supply & sewage system

Equipment :

sink (double unit), electric boiler (50 lt), gas stove, chimney

2 ceiling lights, 1 switcher, 4 sockets

2 windows : 1 large (1.08 x 1.39) & 1 small (0.50 x 0.80)

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RUS 48 Standard House Standard & Equipment

Bedroom

Dimension A = 11.9 m² (3.85 x 3.09⁵)

connected to power supply

Equipment :

1 ceiling light, 1 switcher, 2 sockets

1 window : large (1.08 x 1.39)

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RUS 48 Standard House

Standard & Equipment

Bathroom

Dimension A = 3.9 m² (2.36 x 1.67)

connected to power/water supply & sewage system

Equipment :

shower base, washbasin, toilet

1 ceiling light, 1 switcher, 1 socket

1 window : small (0.50 x 0.80)

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RUS 48 Standard House

Standard & Equipment

Storeroom

Dimension A = 0.9 m² (1.13⁵ x 0.83)
connected to power supply

Equipment :
1 ceiling light, 1 switcher
1 window : small (0.50 x 0.80)

DuSoNC-RUS 2006

RUS 48 Standard House

Standard & Equipment

Corridor

Dimension A = 3.9 m² (w = 1.10; L-shaped)
connected to power supply

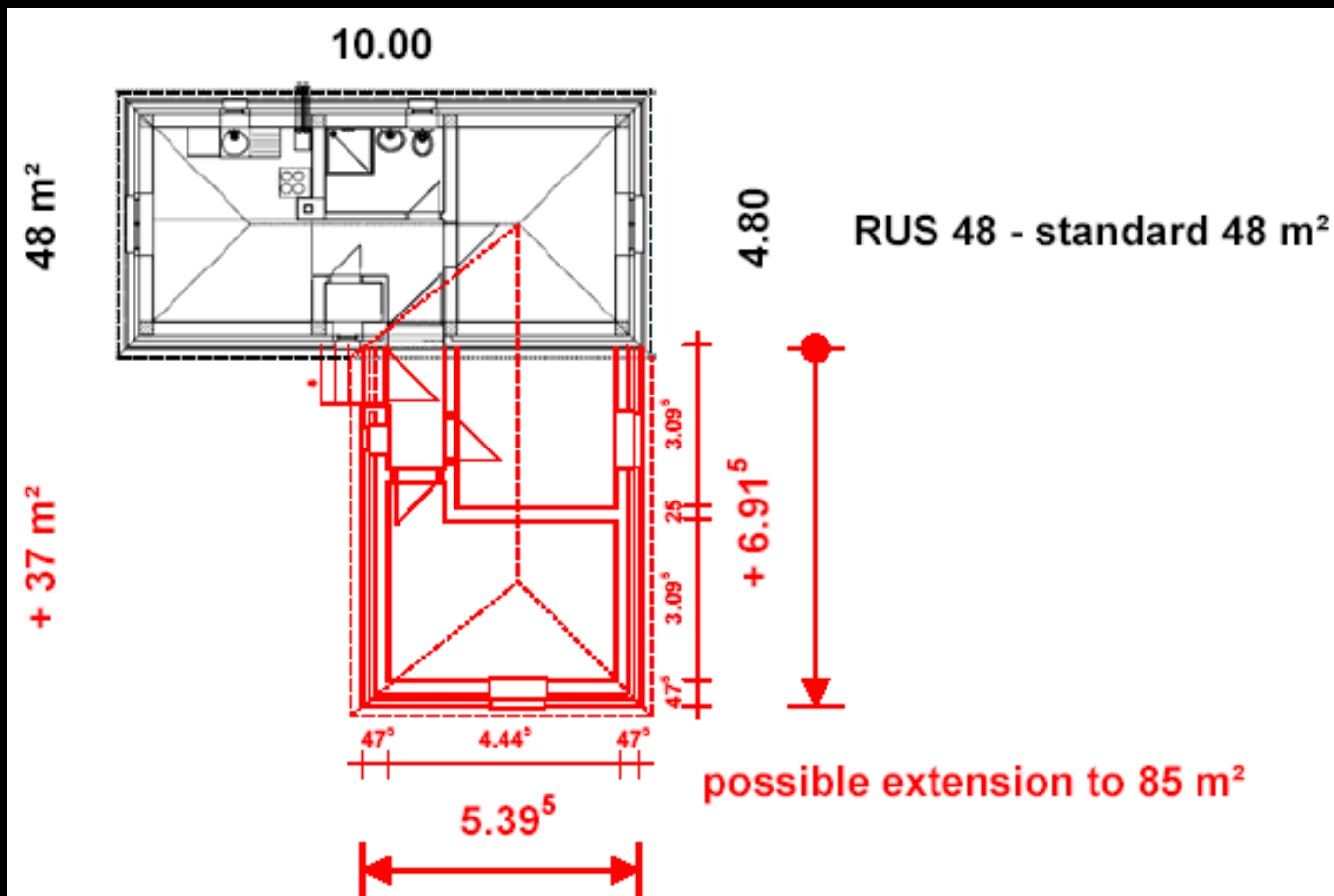
Equipment :
1 ceiling light, 2 switchers
service opening in ceiling

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RUS 48 Standard House

Technical Specification

Layout extension



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RUS 48 Standard House

Technical Specification

Foundations

foundation in reinforced concrete

concrete slab $d = 20$ cm, reinforced by steel grid

basis layer : gravel $d = 15$ cm

bituminized cardboard moisture isolation to brickwork

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RUS 48 Standard House

Technical Specification

Brickwork

façades in 3 layers $d = 47.5$ cm (RUS standard) :

1st layer : outer shell in conventional bricks (12.5 cm)

2nd layer : isolation in mineral wool (10 cm)

3rd layer : inner shell in concrete blocks (25 cm)

=> thermal transmission coefficient $U \leq 0.3 \text{ W}/(\text{m}^2 \cdot \text{K}^\circ)$

ring beam $d = 25$ cm / $h = 20$ cm in reinforced concrete

partitions in conventional bricks $d = 25$ cm / 12.5 cm

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RUS 48 Standard House

Technical Specification

Roof

carpentering :

hipped roof

covering :

corrugated zinc plated steel roof sheets, with ridge caps

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RUS 48 Standard House

Technical Specification

Floors

**floors in kitchen, bathroom, storeroom & corridor :
concrete with cement coating**

**floors in living room & bedroom :
matchboard (smoothed) timber floor paneling**

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RUS 48 Standard House

Technical Specification

Walls plasterwork

**cement plastering; 2 layers : base coat + top coat
(whitewashing by beneficiary)**

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RUS 48 Standard House

Technical Specification

Ceilings

**sandwich type (gypsum) plasterboard construction
(whitewashing by beneficiary);
heat insulation in mineral wool, 2 layers $d = 5 \text{ cm} \Rightarrow 10 \text{ cm}$**

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RUS 48 Standard House

Technical Specification

Joinery

windows :

in timber (double windows),

2 standard dimensions : large 1.08 x 1.39 & small 0.50 x 0.80

(painting by beneficiary);

all windows with zinc plated metal window sills

doors :

in timber,

dimensions : 1.10 x 2.05, 0.90 x 2.05, 0.70 x 2.05

(painting by beneficiary)

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RUS 48 Standard House

Technical Specification

Water/Sanitation installation

bathroom :

shower base, washbasin, toilet

kitchen :

sink (double unit), electric boiler (50 lt)

pipng :

outlet to public water supply system + 1.00 m from façade

sewage system :

septic tank (capacity $\geq 5 \text{ m}^2$) – to be done by beneficiary

DuSoNC-RUS 2006

RUS 48 Standard House

Technical Specification

Power installation

connection :

outlet to power supply network

distribution :

distribution box / electric meter next to front door (outdoor)

fuse box next to front door in corridor

equipment :

ceiling lights, switchers, sockets

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RUS 48 Standard House

Technical Specification

Heating

equipment :

metal stove in kitchen (heating with firewood possible)

stove connection to chimney

piping :

connection to public gas supply system prepared

gas pipe Ø 15 mm in kitchen

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RUS 48 Standard House

Technical Specification

Outside

entrance :

**3 steps to the entrance, in concrete, with cement coating
(1.10 x 0.30 x 0.15)**

concrete strip around the house :

3 sides d = 0.60 m / 1 side d = 1.20 m (along front façade)

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RUS 48 Standard House

Building costs

Central Bank of Russia CBR exchange rate effective on 12 December 2006 : RUB => EUR 34.7130

	%	RUB	EUR
Foundations & outside work	18	66,600	1,919
Bricklaying (façades, ring beam, partitions)	31	114,700	3,304
Roof (carpentering & covering)	10	37,000	1,066
Joinery (windows & doors)	8	29,600	853
Floors (timber & concrete)	11	40,700	1,172
Ceilings (gypsum plasterboards)	4	14,800	426
Walls plasterwork	7	25,900	746
Water/Sanitation installation	7	25,900	746
Power installation	1	3,700	107
Heating/Gas installation	3	11,100	320
Total	100	370,000	10,659



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RUS 48 Standard House

Pilot programme in Ingushetia

UNHCR RI'06 object Bachalova Derbekhan in Troitskaya



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RUS 48 Standard House

Pilot programme in Ingushetia

UNHCR RI'06 object Plieva Patimat in Nazran



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RUS 48 Standard House

Pilot programme in Ingushetia

UNHCR RI'06 object Bekoyev Gelani in Verkhnye Achaluki



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RUS 48 Standard House

Pilot programme in Ingushetia

UNHCR RI'06 object Maashevo Zulay in Verkhnye Achaluki



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RUS 48 Standard House

Pilot programme in Ingushetia

UNHCR RI'06 object Albokachiev Vakha in Zerat Surkhakhi

ОРГАНИЗАЦИЯ ОБЪЕДИНЁННЫХ НАЦИЙ - ООН



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