
ANNEXE 1: DESIGN PRINCIPLES

NON-PRODUCTIVE INFRASTRUCTURES

1 provide dignified restrooms

Throughout the construction period, dignified restrooms must be provided by the owner. Rooms necessary for the life on the site such as a cafeteria, resting rooms must be heated and cleaned. These rooms are key spaces to improve and maintain true collaboration between all workers. Toilets and changing rooms for all genders ensuring intimacy for all are to be provided. 1 toilet for 20 workers is the bare minimum according to the law.

**chantiers_dignes_p.2
*https://labac.ch/fr/
actualites/meyrin-logements/
expo-architecture-activisme*

PRODUCTIVE INFRASTRUCTURES

2 protect the worker from weather hazards

Working outdoors endangers the workers health and safety due to weather hazards such as hot and cold temperatures, wind, sun, rain and/ or snow. Hence construct protected working spaces for all workers as soon as possible, limiting exposed moments during construction.

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HRS_p.5

3 anticipate storage spaces

Define clear storage areas for each trade and building sequence before construction starts. It limits useless transfers and provides smooth flow of material during construction.

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HRS_p.2

4 guarantee the practicability of transport of materials and parts

Transport roads must be high and wide enough (6m) to allow all vehicles to pass. A right balance between fluid roads inside the pit and limiting sealed floor must be managed. The vehicles must deliver the materials directly to the storage area, without workers having to displace them after. All material or parts must be accessible for the crane. Ensure leveled floors to allow good transport of material and parts.

**obtibat_p.4
*obtibat_p.6
werkbüro_p.5

5 provide continuous lifting equipment

Cranes, freight elevators and other lifting equipment must remain on site for the entire duration of the work. The crane must be positioned on open ground for easy installation and dismantling.

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*the_pace_of_space_p.77
*obtibat_p.3
chantiers_dignes_p.2

6 consider machines to be facilitators only

Cranes and other machines are tools to facilitate workers tasks on site, hence its number must be chosen according to the pit surface and specificity, not to increase the construction' pace.

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Q11_CCHE_site_visit

PHYSICAL IMPACT

7 use non-transformed materials

Ban highly processed materials due to difficulty to trace their origins, not ensuring fair labour conditions abroad. Instead prefer the use of raw or minimal processed materials. These materials are less noxious for workers and the environment. Their uses promote workers' monopolizable crafts.

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*concrete_as_a_weapon_p.191
Design-for-Freedom-International-Guidance-and-Toolkit_p.5+7

8 reduce hand carrying

Reduce hand carrying with a maximal load of 25 kg for men and 15 kg for women. It is crucial to ensure their bodies safety before construction wishes.

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HRS_p.2

RISK

9 limit buildings' height

Height falls are the major cause of deaths on site, reducing the building's height reduces this risk. Therefore, buildings must not exceed 25m in height.

Lower and more diversified constructions avoid work' repetition and its correlated alienation, promoting craft and collaboration drifting away from an industrialised approach of task management.

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dessin/chantier_p.28

10 ensure scaffold safety

Set clear instructions before construction starts on who is liable to move, add or remove parts of the scaffold, reducing the risks of collapses and injuries. The scaffold must be conceived with solid and stable assembling methods, between the elements themselves, the ground and the building.

**état_de_vaud_p.1
*lacaton_vassal_bordeaux_
<https://www.lacatonvassal.com/index.php?idp=80#>*

11 reduce size of manipulated building parts

The main building parts and material are carried by crane far away from the receptionning worker. A false manipulation from the crane may highly injure the workers below. The elements being manipulated must weigh less than 1 tonne. To illustrate this point, a standard concrete skip of 500L weight around 1,4 tonne.

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the_pace_of_space_picture_pp. 81

SKILLS

12 promote the use of ornaments

Use ornaments to enhance craft and empower the workers. Integrate authentic ornaments into construction to exalt the technical gesture while encapsulating the joy of manual work.

**the_building_site_p.33*

13 minimize enterprises overlapping tasks

The overlapping and proximity of trades working simultaneously on the same spot represents a major accident risk. Allow independence of the various trades on their interventions, to allow free collaboration to appear. No more than 3 enterprises should collaborate simultaneously.

**HRS_p.5
*electrician_p.7
*the_pace_of_space_drawings
pp. 4-5_*

14 against over precision

Avoid overuse of technology in the design process, this result in useless detail precision and requirements that are impossible to meet on site. Privilege more craft related assembling techniques. Implement tolerance in the design process for easy assembly.

**dessin/chantier_pp.54-55
*technology pedro fiori
arantes_pp.154-155
HRS_p.12

15 mutualise piping

Mutualise the pipes for better installation and repair to avoid re-drilling the structure and thus damaging previous work done by other trade. Ensure natural ventilation and other low tech solutions to reduce the effective amount of pipes. Allow easy access to the pipes for repair.

**electrician_p.5*

THE ALREADY EXISTING

16 counter demolition

Do not demolish existing buildings, it is a negation of previous labour, while adding work to the new construction. To demolish means having to destroy the buildings, carry out materials, recycle or bury them, produce new materials. Instead treat the existent with care, allowing crafts and subtle work to be done.

**a_moratorium_on_new_
construction_p.203*

17 minimize excavation

Minimize digging earth, displacement by transport, storage on greenfields or filling of a pit somewhere else, refilling of the site after construction. Moreover it avoids killing and displacing the biotope present on site, avoiding a reconstruction of the top soil afterwards and preserving the current species and water sources.

**Entangled_life_Sheldrake
*Q11_CCHE_plan_logistique +
visite chantier
*Gruvatier_Orlatti_plan_
logistique + visite chantier*

AFTER SITE

18 foresee maintenance

Ensure easy and dignified repair access as on the piping or reparation of assembled parts. Also allow easy access for cleaning and recurrent house maintenance.

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construction_p.209
electrician_p.7

19 enable transformation of building use

Ensure that the building can be easily converted over time when users change, by making it technically and spatially easier to accommodate other uses.