



healing space

“education, motivation, integration”

youth prison facility

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Marcelle Booyzen

Mentor: Gwen Breedlove
Study leader: Karel Bakker

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overview

Crime in South Africa today has become a subject that has invaded our conversations, the way we move about our environments, our recreation, our driving habits, the way we build, plan our cities or plan our routes home at night. In short, crime has permeated our society so profoundly that we have almost begun to accept that all the above violations of our civil liberties, are simply part and parcel of life in South Africa. This got me thinking about whom these criminals were, where do they come from and how can we, as future architects, contribute to putting a stop to this cycle of civil abuse? I thought of the countless young offenders who, when committed to an institution, instead of coming out rehabilitated, return to crime as blossoming criminals. With these thoughts in mind, I chose a Youth Holding Prison for my thesis study.

My main question is, how much can an architectural environment assist in the rehabilitation of socially dysfunctional people? Rehabilitation applies to criminals who were normal members of society before they snapped, committed a crime, were punished in prison whereupon they are released and return to society, and reformed. How often is this the case? Are we, contrary to this notion, not confronted with a scenario of criminals, who leave prison and re-enter society, unchanged by the prison environment and unable to interact normally with society, only to be labeled as habitual criminals? Here, the word rehabilitation does not apply. Here, we require healing. Can architecture help to heal? If so, we should apply these healing principles to those young, first-time offenders who still have a chance to change their values and alter their perceptions of life and their place in society, through education, new life experiences and above all, motivation.

The unofficial name of the ensuing proposal is, "Healing spaces; education, motivation, integration"

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 - 1 _ 9 The New Generation Prisons. Copad Engineers, 2002:19 - 22
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- 4_8 The Constitutional Court. Architecture South Africa, July/August 2004
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- 5 _ 1 Natural processes, an organism. Author
- 5 _ 2 Construction hats. Abbitare, vol. 427, 2003: 184
- 5 _ 3 Water. Urban Green File, vol. 5, 2000
- 5 _ 4 Disabled images. Diffrient, N., Tilley, A.R., Bardagjy, J.C. 1974
- 5 _ 5 Floor grating specs. Diffrient, N., Tilley, A.R., Bardagjy, J.C. 1974
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- 5 _ 8 Handicapped and Elderly specs. Diffrient, N., Tilley, A.R., Bardagjy, J.C. 1974
- 5 _ 9 Single passage specs. Diffrient, N., Tilley, A.R., Bardagjy, J.C. 1974
- 5 _ 10 Ramp specs. Diffrient, N., Tilley, A.R., Bardagjy, J.C. 1974
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- 6_ 5 Concrete. Tadao Ando, 2002
- 6_ 6 Gabion wall @ The Fashion District (Ink) Johannesburg. Author
- 6_ 7 Timber. Wall Paper, 2003
- 6_ 8 Renzo Piano Building Workshop in Rome. Abitare, vol. 418,2002
- 6_ 9 Glass facade and details in Proposed youth prison visitors centre. Author



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