Design of the Orlando West Fire Station: From *Apartheid* to *Saam*

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Honors Thesis Study

May 7, 2021

Johannesburg, South Africa has a long history of deep racism and segregation commonly known as apartheid. The apartheid, the Afrikaans word for "apartness" time of control is marked at the start in 1948 by the policies the Nationalist Party of South African government wrote in to encourage segregation towards non-white citizens and the release of Nelson Mandela and the overthrowing of white minority rulers within the government in 1990 (News, 2018). The Nationalist party introduced such intensely racist divisions within the society to create a solely totalitarian style of government (Dubow, 2015). This caused widespread and strong distrust of the South African government by those discriminated against, an act desired but has effects lasting longer than any of those in power could possibly realize. Distrust of the government does not simply stop out of the national government building walls but rather transfers into local government entities whose sole purpose is to serve its community in the case of emergency such as firefighters.

The distrust of firefighters is particularly troubling due to the number of fires that occur within the segregated neighborhoods. These neighborhoods and communities are often *informal settlements*. Informal settlements are characterized by their sporadic nature, seemingly without organization as the name "informal" suggests, created overnight in whatever space is available on the land deemed unusable or ill-desired. Populations

within informal settlements are overly dense with these "houses" made of cardboard, leftover

plywood, scrap metal, and other cheap or free materials often sitting just inches from one another

(Harrison, et al., 2010). Families of 8-12 individuals can live in shacks that are no bigger than a

small bedroom one would find in an average American home. This breeds trouble as informal

settlements tend to have minimal, if any, electricity, running water, or other necessities for life,

and instead the individuals living within the shacks use an open flame, old and expired propane

stoves, and other extremely dangerous, fire-producing objects around the flammable building

materials. When fires occur in

informal settlements, the few and

distant fire stations take too long to

reach the fire and are greeted with

protesting from community

members upon arrival. The distrust

deep-seated within the community

causes them to care more about

Image used permission of Justin Sullivan

fighting the firefighters than saving their homes. This only leads to immense and broad

destruction of large informal settlements, innumerable injuries, and even many deaths (Eksteen,

2020).

The apartheid is long gone, but its effects are still as present as ever (Hurst, 2009). There

has to be some outreach within these areas of intense segregation of informal settlements so

reconciliation and unity of the South African people can occur once more, or possibly even for

the very first time. The design of a fire station with a community and communication focus can

be the foundation of this time of positive change. This fire station, located along the border of the

Soweto West and Soweto East townships will serve the informal settlements surrounding its

north, east, and south both in typical fire station service as a source of protection and guardian as

well as a space for the community to have positive interaction with the firefighters as well as one

another. Its new duty is to repair the damages of the apartheid and instead of creating "apartness"

it will create "togetherness" or *saam* in Afrikaans (Beinart & Dubow, 1995).

The design achieves this conceptual stance and action through multiple processes. These

include the historical, the contextual, the symbolic, and the physical. Each process promotes

inclusivity of each category of a community member to fully unite those around the fire station

and to come together to heal from the apartheid.

The site chosen for the Orlando West Fire Station is well-accustomed to the quickly appearing and disappearing actions and seemingly chaotic nature of informal settlements as there recently have been instances of informal

settlements on the site itself. This has occurred within the last decade with the most recent of this

being in 2012. The layout of the homes within an informal settlement seems random and without

thought at first glance, but clear pathways can be seen upon further inspection. These pathways

often coincide with the most direct access out of the site, to the community water source, or a

congregation spot for that neighborhood. This phenomenon is also referred to as natural desire

lines. One can see other instances of this occurring in nature such as a bird's flight path,

electricity moving to its ground, or simply when people consistently walk across a grassy patch

diagonally instead of following the sidewalk around the green square. Pathways such as these are

connected through nodes or collection points.

The fire station utilizes

these existing pathways and

collection points as

organizational tools and to

understand how people would

naturally interact with the site

crossing over it. Paths found

were often directly from the

northwest corner to the middle

of the southern street, from the middle of the northern street to the southwest corner, and from

the far west end to the east corner. This can be seen in the major circulation routes throughout

the site's design with the main entrances laid on these pathways as well as the major veins of

pedestrian circulation through the building following a similar pattern.

These patterns and current circulation routes encourage intersecting paths between

community members and the firefighters who stay at the station. Conversations are encouraged

as these passageways also are placed alongside notable programmatic spaces such as the main

lobby, the station commander office, the demonstration area, and the community resource center.

Both community-focused and fire station essential spaces provide grounds for these two groups

to become equals, further learn about one another, and grow towards reconciliation of a truly

post-apartheid society not only in the timeline but in action as well.

Directly relating to the pedestrian and vehicular circulation throughout the site, the

building form is based on these historic desire lines. The programmatic spaces are mostly

arranged linearly following the circulation to provide

greater visual access towards each of these spaces.

Visual access further gives a connection between the

community and the firefighters and has the

opportunity to encourage conversation if the two

make eye contact while traveling between the spaces

developed through the formal gestures of the fire

station design.
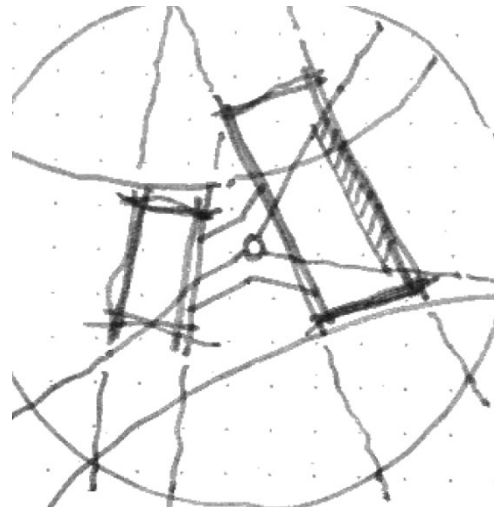
The context of the surrounding site is extremely important to fully understand the

comfort level of the community the fire station is serving. With their existing distrust of the

government, it is imperative that the design does not create a feeling of distrust of the community

in response. Instead, the materiality and formal gestures of the design chosen reflect what is

familiar, open, and honest to the surrounding community. Much of the local architecture within

the neighborhood of the informal settlements and of the other businesses that serve that

community are created with a simple building material palette. Many of the informal settlement

houses are created with corrugated metal sheets. This same material is used in some more

permanent architecture such as houses as a type of roofing. The permanent and sturdy housing in

this area often utilizes brick masonry load-bearing walls or is simply finished in a brick veneer

with a timber framing structure. This type of housing is considered the dream of many

individuals in impoverished informal settlements and is considered the point at which their

family is ultimately secure and safe. The fire station utilizes these same materials to connect with

these same ideas of safety and security as well as familiarity.

The main exterior material of the fire station is multiple color

variations of local clay brick, with sections along the higher

portions of the wall faces finished in stucco panels. Deep red-

painted standing-seam zinc roofing is used on all roof planes

to associate both with the corrugated metal sheets and

terracotta shingles used in some permanent housing design in

the area. Glazing is often used to reference transparency

within a design. Within the fire station, large expanses of

glazing towards the south and east provide this transparency into the inner working of the fire

station to build trust within the community. Trust is a key element to reunify this community and

the government.
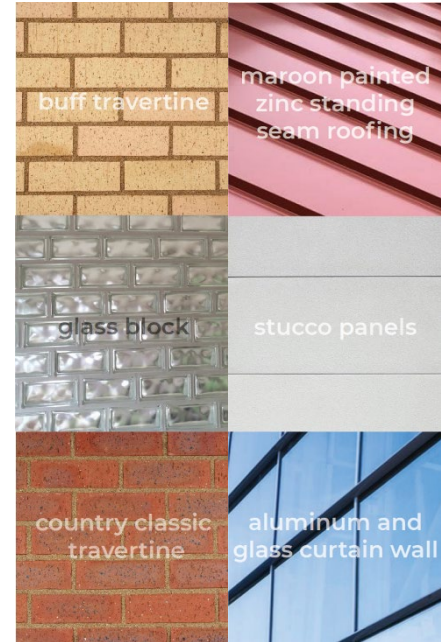
The form of the surrounding buildings also had an impact on the form of the fire station

to further promote contextual familiarity and a sense of belonging. The school buildings down

the road to the east of the site follow the idea of a homelike structure as they use gabled roofs.

Several permanent homes and businesses as well as many informal settlement homes utilize this

roof shape in addition to shed-style roofs. These two roof forms are the major forms used in the

Orlando West fire station design to truly allow the community to feel as if this building has

always been a part of the neighborhood and to be comfortable to be around and inside. If the

community members feel as if they are already familiar with this new piece of architecture, it is

more likely that they will feel comfortable creating conversations that could lead to unification

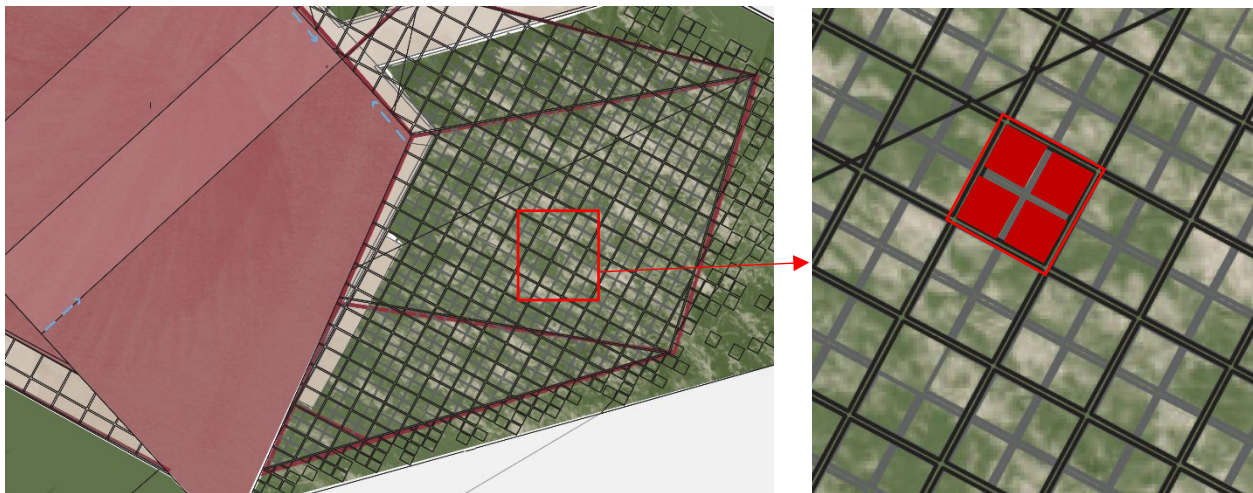with the firefighters within the building.

Symbolism is the driving feature through the detailed development of the fire station design. The cultures of Soweto, South Africa, and Africa are rich in symbolism. Symbols can be found through the colors and shapes of the South African flag, the patterning of traditional beaded jewelry, Adinkra, a set of symbols native to the West African country of Ghana is also seen throughout much of African culture including in some South African culture pieces as well. Eban, or "the fence," is a specific symbol within Adinkra which meaning encompasses love, security, and safety (Dzokoto, Hill, Twum-Asante, & Hayfron, 2018). These three terms are emotions and descriptions that correspond directly with the fire station's purpose and goal of its community-focused additions. Eban, made of four diamonds within a larger diamond shape, was abstracted to be used throughout the fire station design. In particular and the use that is most present throughout the design is a cross pattern in brick created with alternating the colors of "Buff" and "Country Classic" clay brick as well as instances of alternating "Buff" with brick-sized transparent glass block. The same abstracted pattern is also used in rolling interior shading partitions made of small wooden boards.
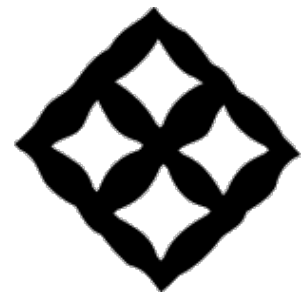
variation of the eban pattern shows up throughout the site development of

the fire station as well. This includes the shading structure and public market paving. From an

aerial view, these elements line up in a similar structure to the eban symbol with the larger

diamond as the polycarbonate panel of the shading structure and the smaller diamonds as the

four smaller pavers below.

The usage of symbolism throughout the building in this manner acts as a reminder to all

those who view this fire station. Eban becomes a promise from the firefighters to the public. The

promise is to love the community through service providing safety and security from the dangers

of fire. The promise is also to care for the community's health and wellbeing as a society. It is to

provide safety and security from another source of apartheid and instead of creating reparations

through its service and interactions with the members of the informal settlements.

The physical aspects of
this fire station are designed with
immense care to ensure adequate
interaction and communication to
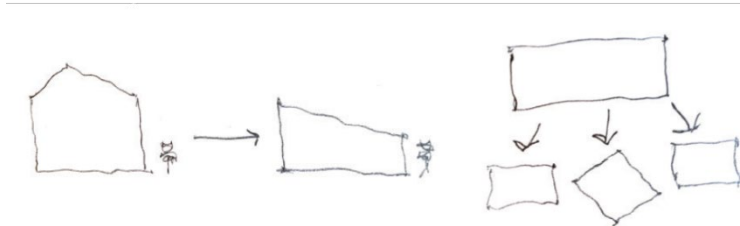
lead towards reconciliation and unity between firefighters and the community members.

Without a proper scale of spaces both in the horizontal and vertical planes, users within can

easily feel out of place and uncomfortable. In the fire station's case, specific locations take this

scale into significant account. In particular, the main community-focused space, the community

resource center is recognized to be a multipurpose space that will likely change over time as the

community's needs change. This space must therefore provide space for multiple uses. Two such

uses that require opposite spacial composition are large community meetings and one-on-one

after-school tutoring.

In the first scenario, a large community meeting would feel crowded, harsh, and

incredibly formal if the ceilings in the space were low, there was little natural light, and the color

palette was sterile. Instead, in the community resource center, the gradually sloping ceiling
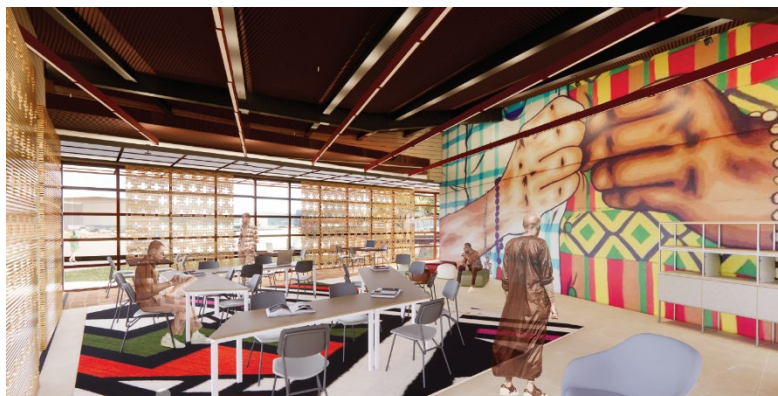
ranging from 12 feet to 15 feet tall
allows space for the members to
congregate as well as voices to
travel easier. The large glass
curtain walls along the three
exterior walls with the rolling

interior shading allow plenty of natural light to enter the space with enough control for the users

within to choose the perfect level of illumination for the particular meeting.

        In the case of one-on-one after-school tutoring or individual private conversations

between a member of the community and a member of the fire department, the horizontal

division throughout the building with a change in materiality at 10 feet elevation above the top of

the slab-on-grade gives a sense of security and comforting closeness. Along the southern edge of

the community resource center, the ceiling plane drops to 10 feet as well to reinforce this idea of

human scale within the building.
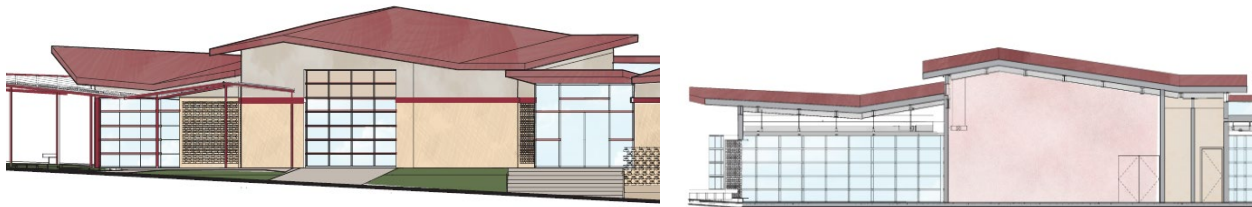
        Both of these functions performing successfully in the desired spaces within the fire

station are essential to showcase the achievement of the station's goals. These conversations

encouraged by the spatial design of the fire station are the driving factor in creating unity and

reconciliation in this township. Without the conversations and interaction between the parties,

there will never be development and reparations from the apartheid.

        Ultimately, the architectural design of the

Orlando West Fire Station can not be the sole reason

for the reconciliation and the *saam* of the people of

South Africa. However, utilizing the hist

oric, contextual, symbolic, and physical aspects of the design into account with interactions

between the opposite ends of the divide in mind can encourage steps in the right direction. With

each detail focused on people the opportunities for the fire station to truly make a difference in

Soweto are innumerable. Through this design, these opportunities and the completion of

reconciliation, though, are closer than ever before.

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