



The Grid.
Max Adams

A1 Detroit
B1 Manchester

MA001

The Grid.

Max Adams

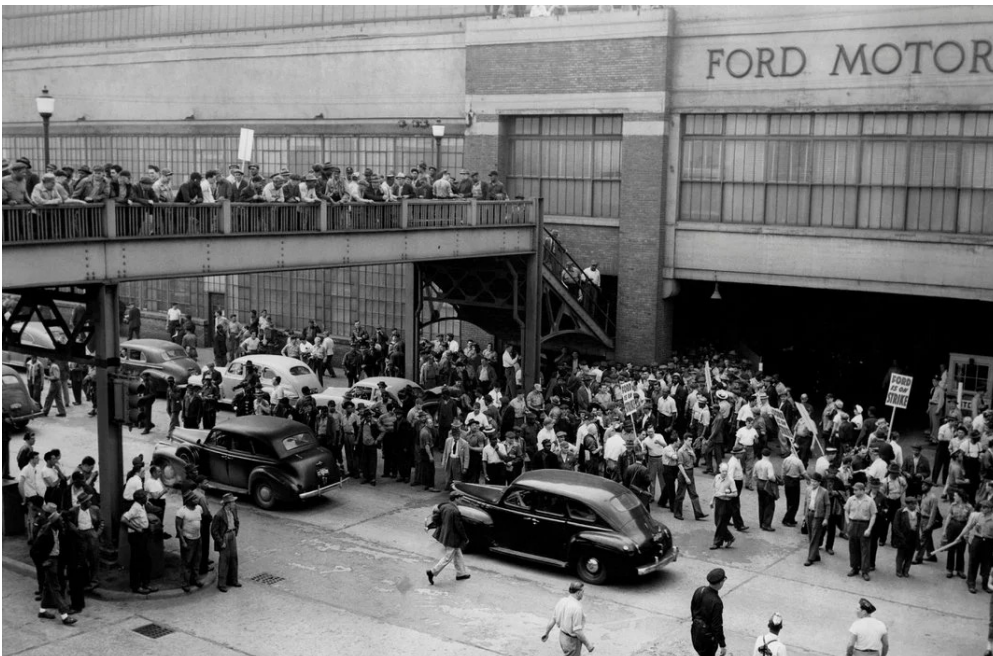
**The role played by modernism & industrial architecture in the formation and
facilitation of Techno.**

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Introduction

In the early 1980s inspired by the work of author Alvin Toffler and the precision of Kraftwerk's music, Juan Atkins would develop a musical language depicting the postindustrial landscape of his home city of Detroit. Through the use of machines Atkins and his fellow Detroiters would produce a call for uprising that would be heard on the other side of the Atlantic. This essay will explore how modernist values were captured within techno's revolutionary sound and how the grids of modern industrial architecture not only played a role in the conception of the genre but provided it with sanctuary. To understand Techno's language, you must be familiar with the land it hails from. Detroit, Michigan.



(fig.1) workers of Ford Motor Company on strike in Detroit, Michigan, (1950)

Detroit

Once America's industrial crown jewel with a long spanning history in technological innovation, that now all seems lost to time. The roots for Detroit's Automotive Empires would start to emerge in the 1890s, already a city with a background in metalwork. By the 1920s industry would skyrocket, due to cars becoming more affordable, sparking a period of African American history known as the Great Migration. Black communities mainly travelling north from the southern states in search of opportunity in Detroit's factories. Automobile empires such as Ford and Chrysler built factories in the inner city which in turn created their own ecosystems made up of part suppliers as well as the amenities needed to serve such a workforce. However, starting in the 1950s and continuing into the 1970s these companies would decide to move their operations out of the city serving the ever-growing population of white middle-class Americans moving to the suburbs. Due to this large portion of Detroit's inner city were bulldozed to make way for Highways out of the city. Inevitably the ecosystems created by automotive empires



(fig.2) Downtown Detroit, Michigan (unknown)



(fig.3) Michigan Central Station, Detroit (2004)

would collapse as Detroit's mostly black inner city was abandoned and left to decay. The Factories and other industrial facility were left to rot along with the homes abandoned by the mostly white middle class population, would create numerous voids within Detroit's city grid. (How Detroit Went from a Booming Metropolis to a Shrinking City | NBC Nightly News, 2019) The chorus to Field's, a song by Detroit rapper Danny Brown, depicts the harsh reality of growing up in Detroit and the city's half empty appearance.

"And where I lived...

It was house, field, field...

Field, field, house." - Danny Brown

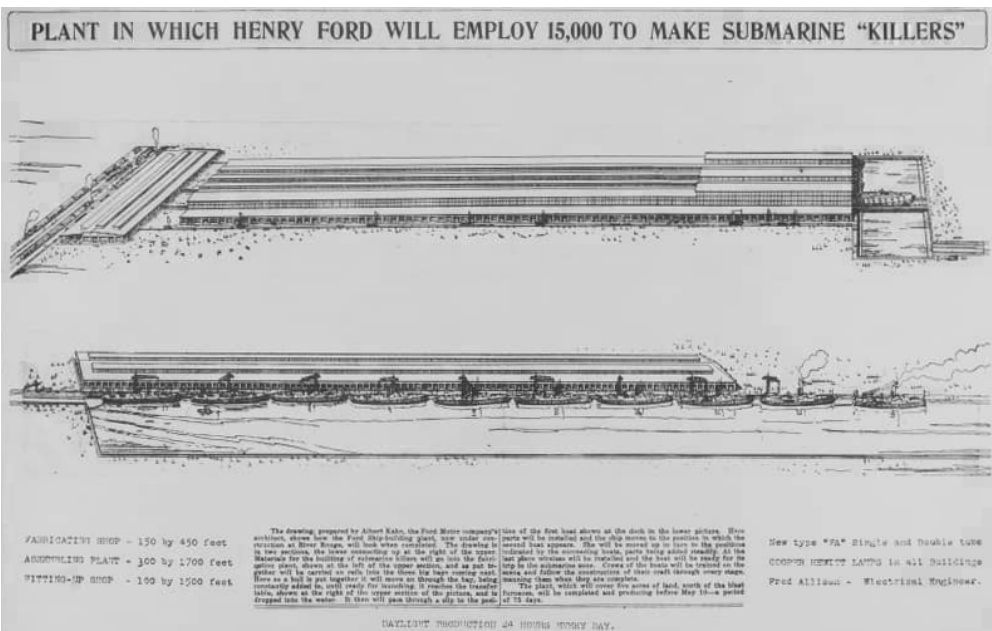
However, this abundance of empty space may have provided the perfect environment for Techno's creative minds, as Techno Rebels' author Dan Sicko thinks "Techno happened in Detroit – perhaps because the new musical genre needed quiet environs to grow and develop." (Sicko, 2010) Techno DJ/Producer Craig Carl states. "To the Rest of the world Detroit is like a prune pit. It's an underdog but, you can do what you've got to do without people bothering you." (Sicko, 2010) These spatial voids place spotlights upon the city's remaining crumbling structures, memories of Detroit's industrial prowess, as Wayne State University Professor Jerry Herron explains. "We've (Detroit) got space and it's not just space that's empty, it's space that's full of artefacts of American industrial Culture. It's a place like no other. It provides food for people's imaginations in a way that no other site does." (High Tech Soul: The creation of Techno Music, 2006, 00:08:03 – 00:08:16) Craig Carl, described as Techno's closest thing to a prodigy, describes how the architecture of the derelict Michigan Central Station inspires his creative process. "The lines might be basslines, and the curves might be string lines, and the columns may have more to do with drumbeats or the intricacy to the grooves within the music." (Techno City: What is Detroit Techno?, 2000, 00:09:57 – 00:10:11) As Rubin explains. "The city's post-apocalyptic mystic is crucial to the mythology of techno." (Rubin, 1998) Techno would convey the city's setting and the problems that it dealt. However, going back to before the city's industrial collapse, one man that worked as a part of Henry Ford's assembly lines would play an integral role in Techno's backstory back story and become a key figure in the trajectory of modern music with his record label Motown.



(fig.4) Berry Gordy (unknown)



(fig.5) Lincoln plant, showing newer Ford-built addition in rear. (1923)

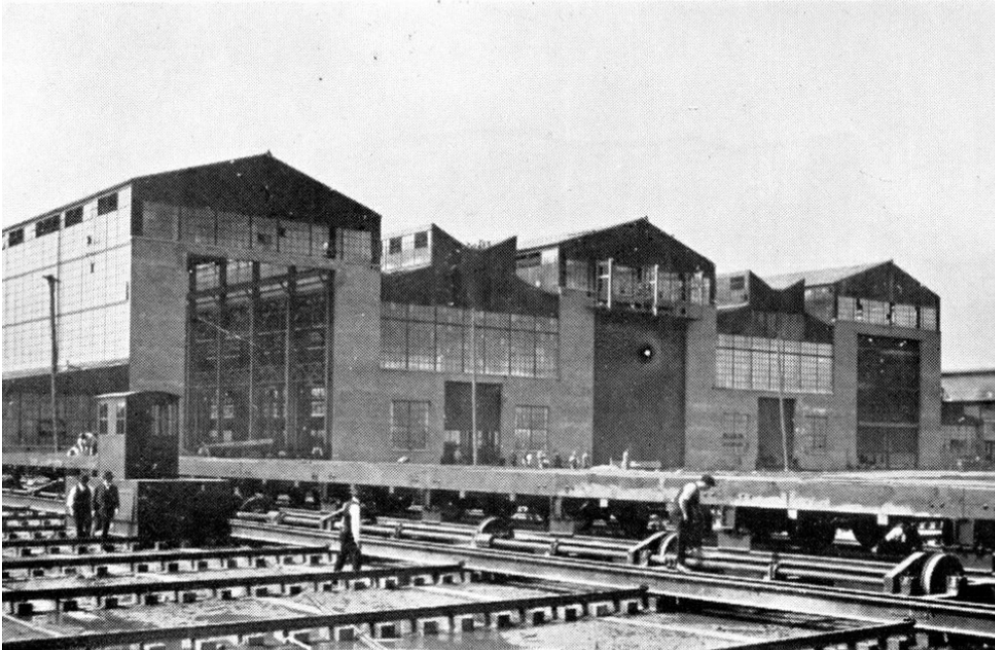


(fig.6) Drawings for The River Rouge Plant, (1918)

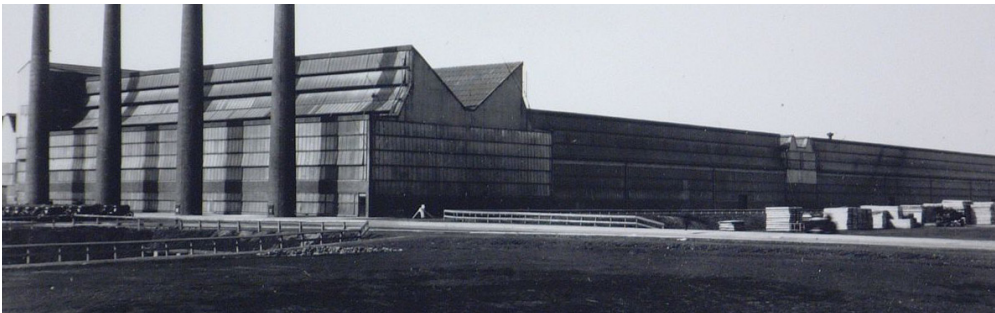
Motown

Detroit's musical heritage would also influence Techno's creators. Soul Acts such as The Temptations and The Supremes encapsulated the Motown sound during the 1960s. The Motown label was established in 1959 by Berry Gordy, a native Detroit that worked as a part of Ford's assembly line before setting up the label. "Gordy explains in his autobiography that he would use a tonal to a numerical system that he developed on his own. He wrote music to get through some of his toughest work shifts at the plant." (Johnson, 2022) "I would see cars come in one door a bare metal frame and go out the other door a brand-new car" "I got the idea to do my music business like an assembly line. When artists would come in one door an unknow kid off the street and go out the other door a big star." (Gordy, 2014) Emulating this "every aspect of the production of a song was broken down into a series of small tasks on which an individual would work. Only those at the head of the company would have an overview of each single that was for release." (Prasad, 2007) Gordy's assembly line consisted of Classes, a "Charm School" and in-house Song writers and Producers. Having this in-house process made Motown a completely self-sufficient record label.

The Ford Lincoln-mercury Plant in Detroit is where architecture would play a defining role in the formation of Gordy's business model. Founded in 1917, the plant produced luxury cars for Lincoln automobile company. The Company would be bought in 1922 by Henry Ford, who wanted to expand into the luxury car market. Ford would assign architect Albert Kahn to expand on the design of the existing site to house further assembly lines. (Wikibooks, 2022) By 1922 Kahn had already become a detrimental part of Ford's success due to the design of Highland Park, completed in 1910, "which revolutionized factory models of organization." (Ravara, 2020) The new additions to the Lincoln plant, where Gordy worked, resembles a similar design layout and features to Kahn's acclaimed Rouge River Plant, originally constructed in 1918 for the purpose of assembling war ships dubbed as "submarine killers", then later converted into an assembly line for Ford's automobiles. The single-storey linear design of the assembly building consisted of a steel frame forming a grid of equally sized bays. Two of which contained tracks for the transportation of subassemblies and parts, the other three of which housed the continuously moving assembly lines. The exterior of the frame was clad in a continuous curtain of operable steel-sash glazing optimizing natural light levels and ventilation inside the facility. (Thiel-Siling, S. and Bachmann, W., 1998) "An ornament free glass skin gave it the look of some futuristic, esthetic machine, 'the glass plant carried industrial architecture foreword more than any other', Hilderbrand writes" (Sherman, 1994)



(fig.8) . The Rvier Rouge Plant (1918)



(fig.9) The River Rouge Glass Plant. (1922)



(fig.10) Ford Assembly Line. (unknown)

Kahn's modernist philosophy placed the functionality of his industrial architecture first, adhering to Louis Sullivan's idea of "form follows function" and provided the perfect grids for factory efficiency. "By the time that the complex was built a glass-making plant, a foundry, a cement plant, a spring and upset building, a mill, for rolling steel into sheets, a pressed steel building, a motor assembly building and structures for ovens and open-hearth furnaces which were used for manufacturing steel" (Thiel-Siling and Bachmann, 1998), making Rouge River plant completely self-sufficient. The same way Kahn's plant turned raw materials into cars, Gordy's label transformed "an unknown kid off the street" and turned them into a star. Kahn's influence through design would travel outside the world of modern architecture. His linear, tightly regimented factories would be responsible for the success of the assembly lines that would later provide Gordy with the inspiration for his business model.

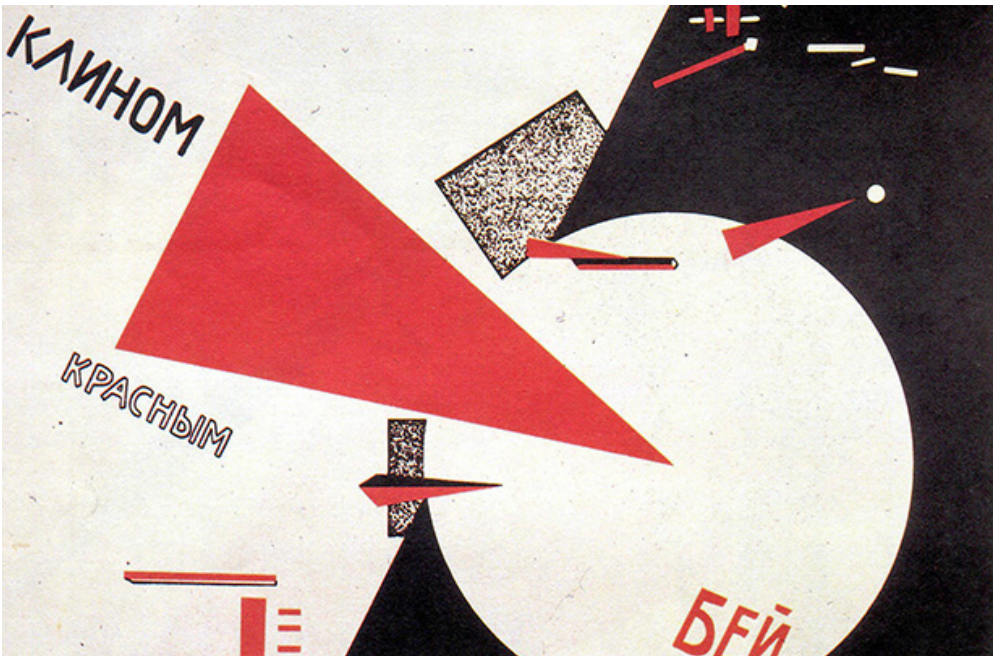
The Lincoln-Mercury factory designed by Kahn would leave an undeniable impression on Gordy and could be argued to have had a strong influence on the course of music in the 20th century. As Evans explains "Mainstream music as we know it today wouldn't exist without the blueprint mapped out by Berry Gordy." (Evans, 2021) "Conservative architecture was about to be leveraged into the future with the factories of Albert Kahn playing a role in modernism's springboard" (Sherman, 1994) in the same way Gordy's label would pave the way for black owned music businesses "beating the odds when they were always stacked against black people in America – without him there'd be no P Diddy or Jay Z" (McCann, 2022). Working for Ford he experienced how new cars could make all forms of people happy, regardless of the colour of their skin. Berry Gordy intended to do the same thing, making music everybody could enjoy. Something that would provide Motown's artists with success and recognition on a global scale.



(fig.11) Emscher Park near Düsseldorf. (2003)



(fig.12) The Man-Machine (1978)



(fig.13) Beat the Whites with the Red Wedge. (1919)

From Detroit to the World and Back

A group of musicians that could not escape the influence of Berry Gordy would be Kraftwerk “as former member Karl Bartos explains “we were all fans of American music: Soul the whole Tomala/Motown thing and of course James Brown. We always tried with to make an American rhythm feel with a European approach to harmony and melody.” (Sicko, 2010) Hailing from Dusseldorf in the Ruhr, the biggest industrial concentration in Europe at the time, would be another integral influence on the group. In Bussy’s “Kraftwerk: Man, Machine and Music” he Describes how Dusseldorf, a symbol of new industrial power represented by clean modern design would influence Kraftwerk to develop a more modern musical language in comparison to other German groups emerging from different regions. “The industrial heartland of Germany provided them with the inspiration for many of these early tapes, as they attempted to recreate the sounds of the flat industrialized zone on the banks of the nearby Rhine.” (Bussy, 2005) These recordings would lay the seeds for what would become the sounds of Techno. The groups near enough obsession with discipline and regimentation would lead them to adopt the use of new technologies to eradicate human error. Sequencing drum patterns using drum machines to break down rhythms in a mathematical fashion. Beats, quarter beats and sixteenths would be arranged to create a linear rhythmic grid, synthesizers would be used to create the melodies and harmonies to lay within these regimented patterns of electronic percussion, much like how Albert Kahns grids provided the structure to facilitate Henry Ford’s Production lines. Was the inspiration behind the regimentation in their music something taken from modernism? (Albiez, S. and Pattie, D., 2011)

Post war Western Germany struggled with cultural identity issues in the wake of the devastation caused by Hitler and the Nazi party. There was still a lot of guilt carried by Germans after the second world war. A lot of other German pop groups at the time looked at Anglo-American culture for inspiration at the time often choosing English names. “Kraftwerk”, the German translation of powerplant, sought to change this pattern. As group member Ralph Hutter explains “The culture of Central Europe was cut off in the thirties, and many of the intellectuals went to the USA or France, or were eliminated. We [Kraftwerk] are picking it up where it left off, continuing this culture of the thirties, and we are doing this spiritually.” (Bussy, 2005) The artwork for the group’s album The Man-Machine is heavily inspired by El Lissitzky, a Jewish Russian Artist classically trained as an architectural engineer in Germany who would later go on to become an ambassador for Bauhaus, a German school founded in 1919 striving to better the future through their principles of design and art in the wake of the First World War. (Albiez, S. and Pattie, D., 2011) Walter Gropius’ 1919 manifesto explains how the school would train artists to work as craftsmen, as there is no meaning in the role



(fig.14) *The Bauhaus Building, Dessau. (unknown)*



(fig.15) *The Wassily Chair. (1926)*



(fig.16) *Tubular Steel Chairs. (1928)*



(fig.17) *Bauhaus Dessau. Staircase in the vocational school building.*



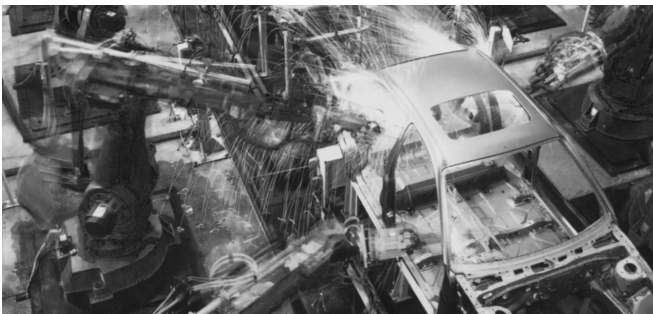
(fig.18) *Grand Palais Staircase, Paris. (unknown)*

of an artist who produces work without any function or connection to life. Previously schools had focused too much on the individual painter or sculptor creating art for the elite and ego. Bauhaus believed in the reunification of all disciplines to create a new world that serves all. Gropius deemed the complete building to be the aim of all visual arts, to achieve this once again all Architects, Painters and Sculptures must combine their crafts to create structures where monument and decoration are indistinguishable. (Gropius, 1919) Bauhaus favored simple but highly functional design, using materials fit for purpose and efficient mechanisms to form appearance, not hiding a structure or an object's materials behind vain decoration. Bauhaus' Architecture was practical and was designed to serve the needs of all, their products favored the use of economical materials allowing them to be produced on an industrial scale and be accessible to all, something emulated by Ikea today. Where decorative fashions come and go, Bauhaus' practical forms were so forward thinking that they are timeless. Whilst Bauhaus and its followers were looking to a socialist future. A lot of the German population at the time were looking back at tradition in the hopes of reinstalling national pride after defeat in the First World War. Fueled by fear and anger, the rightwing Nazi party would rise into power during this period. Fearful of Bauhaus' socialist ideology they would close the school in 1932. (Quartz, 2019) (Engels, H. and Tilch, A., 2018)

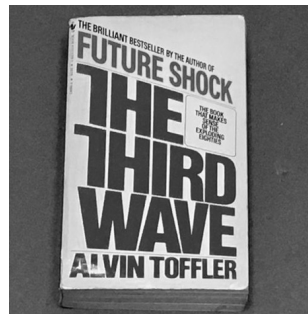
The Man-Machine's artwork features a red and black colour pallet strongly which alludes to Bolshevik propaganda created by El Lissitzky. This cover art would convey a strong opposition to Germany's Nazi past and align the band with a socialist forward-thinking aesthetic. The Man-Machine could be considered a sonic representation of Bauhaus. Always embracing new possibilities with sound through newly developed technology. Bauhaus' architecture celebrated the use of the latest materials and construction techniques to achieve the most practical results. The instrumentation within The Man-Machine's songs feels very mechanical and purposeful, the percussion lays out a grid pushing forward in a calculated manner, there's no unnecessary decoration within the music, no guitar or drum solos. Even the monotone vocoded vocals are direct and do not flirt with ideas like vibrato, the focus of the art is the sounds that machines can produce. In comparison with Bauhaus architecture, the simple form of the handrails in The Bauhaus Building demonstrates the use of durable materials and practical design. A stark contrast to Paris' Grand Palais where the flamboyant Art Nouveau design adds nothing to the handrail's practicality and is simply following period fashion. Fashions come and go; the simplicity of Bauhaus and focus on materiality and mechanism makes their works of design timeless. The same argument could be made for The Man-Machine, the simplicity of its rhythm and focus on the sounds produced by technology is what made the album so ahead of its time. Even the way Kraftwerk chose to present themselves is a conscious decision. Eerily ordinarily dressed in suits



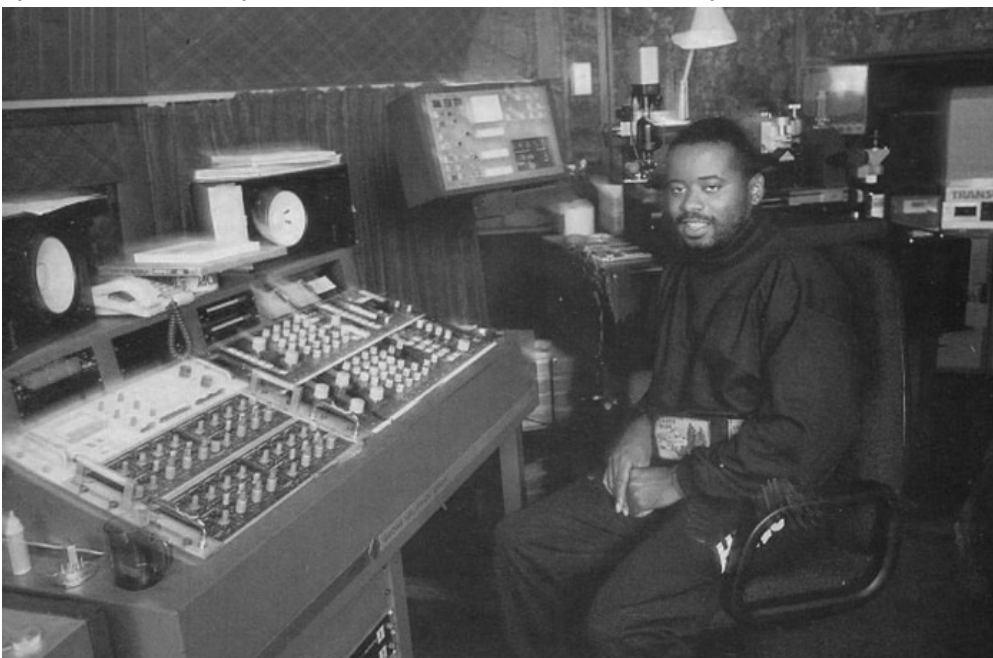
(fig.19) *The Model* music video. (1982)



(fig.20) *Automated Machines Working on Cars*. (unknown)



(fig.21) *The Third Wave*. (1980)



(fig.22) *Juan Atkins in the studio in the 1980s*. (unknown)

and ties, the group's music is the point of focus, their appearance is not a distraction. There is no egotistical front man belting out a ballad, they perform as a unit, as equals. It is more of a demonstration than a performance. This was the image Kraftwerk wanted to display, one of socialism and revolutionary vision for the future, breaking the norms of popular outside opinion on German identity. This would be something that the population of inner-city Detroit could relate to as DJ and producer Robert Hood explains "They wanted western culture, but with a new identity aside from being labelled Nazis. We wanted a new identity aside from being labelled black people who were going nowhere." (McCallum, 2019)

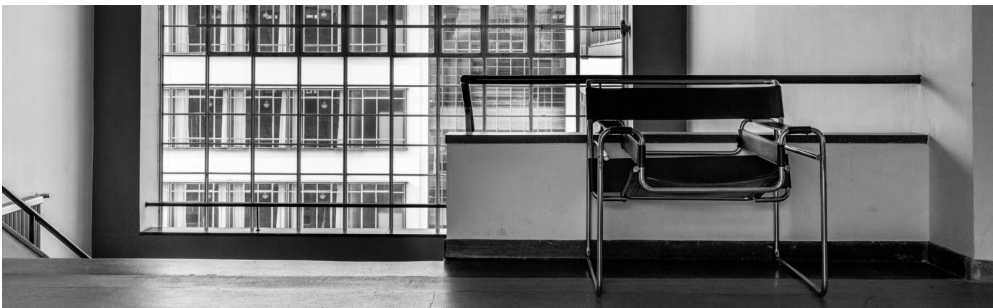
In addition to large portions of Detroit's industrial sectors leaving the city there was another challenge people were facing as the proclaimed godfather of Techno Juan Atkins explains. "There was a lot of fallout based on things switching over to automation, computers and robotics taking over where people once worked and thrived but, it wasn't really a bad thing. The city was in transition to a technological base." (High Tech Soul, 2006, 00:07:23 – 00:07:41) Atkins' positive outlook on the situation stems from a class he took in high school, Futurism, which was based on the transition from an industrial society to a technological society. Growing up in Detroit he was always fascinated by anything futuristic, he found comfort in the idea that technological could bring improvement to his surroundings. His grandmother owned an electric synth organ that he would play with day in, day out. He describes how he would create futuristic sounds, like how you would imagine a UFO to sound if it landed in your back garden. (DJ Mag, 2018) Atkins' would continue to play around with electronic sound and music as he entered high school. Techno Rebels, a section in *The Third Wave* by Alvin Toffler, the book of reference in Atkins' Futurism class was a great source of realization to Atkins. In Toffler's world The Techno Rebels are a growing population that are tired of how the advancement in technology has benefited the wealthy and the elite causing damage to social and ecological structure and seek change, believing "technology does not need to be big, costly or complex in order to be sophisticated" (Toffler, 1981) Socialists in the technological age, they intend to use practical technology for the improvement of society for all. Atkins resonated with this idea. His equipment was not costly or complex, but it took him out of postindustrial Detroit, could it do the same for others? Atkins would continue to create music However, it was Kraftwerk that would really help Atkins develop his sound, as he explains. "The stuff I was doing was so organic and so flowing it didn't have any of that preciseness, and when I heard Kraftwerk, it sounded like computers talking. I wish my stuff sounded that advanced" (Juan Atkins and Kraftwerk, 2016, 00:03:24 – 00:03:44) If Kraftwerk's tightly regimented sound was a sonic representation of Bauhaus and modernism then Techno in Detroit would be a continuation of that idea, as Atkins states. "It showed me the preciseness of this German way of thinking applied to electronic music,



(fig.23) Selection of 1980s Roland Products (1980s)



(fig.24) Dodge Main Plant, Detroit. (unknown)



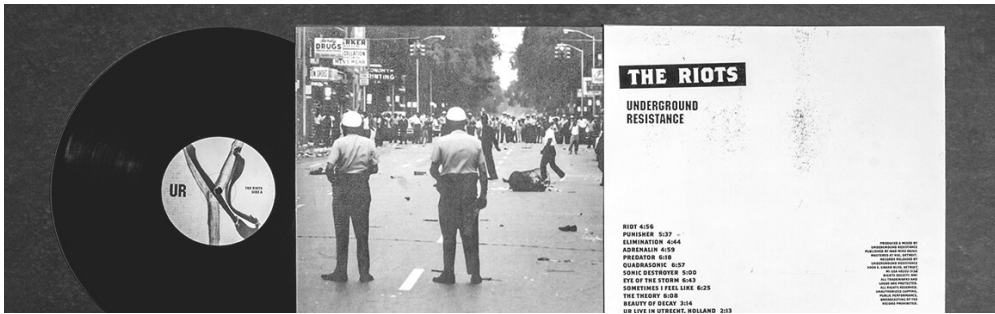
(fig.25) Bauhaus Dessau. (unknown)

that was the beauty of Kraftwerk” (Sound of Berlin Documentary, 2018, 00:09:04 – 00:09:18) Kraftwerk would be a monumental influence in Atkin’s Musical structure and the progression of his music.

During the 1970s drum machines and synthesizers were expensive and unattainable to most. During the production of Kraftwerk’s album *Autobahn* group member Ralf “Hutter describes the investment into a “Mini-Moog” synthesizer being as expensive as a Volkswagen” (Bussy, 2015) In the early 1980s companies like Roland would mass produce drum machines like the TR-808 and synthesizers like the TB-303. The sounds that these machines would produce would become synonymous with early Detroit Techno. From the early 1980s Atkins and his friends would acquire mass produced technology and through DJing at parties in Detroit would start to spread their sound. By the mid 1980s there would be a number of Detroiters using machines as a vehicle to a utopian vision. (Sicko, 2005) This is another example of where Bauhaus’ ideas align with how the genre took shape. If this technology was not designed to be accessible then this equipment would never have been obtained by Techno’s creators and therefore, would never have allowed the music to develop.

Where Kraftwerk’s sound captured the essence of industrial Dusseldorf, Techno would capture the soul of postindustrial Detroit, a more desperate setting. The music’s sound would be a reflection of this as DJ/Producer Derrick Thompson explains “people don’t have money to buy food and clothing or other necessities or luxuries we like to enjoy. These attitudes tend to come out in our music” (High Tech Soul, 2006, 00:07:42 – 00:07:53) Techno’s creators would still see themselves to be building upon Detroit’s rich musical heritage as Atkins states. “You’ve got alternative Rock, so why can’t we have alternative Soul” (High Tech Soul, 2006, 00:02:19 – 00:02:23) The Digitalization of Soul music through drum machines and synthesizers is what became Techno as Craig Carl states. “We put Soul into that machine. That’s how Techno became what it is today” (Techno City Documentary, 2000) Derrick May Would Coin the term “High Tech Soul” as a description of Techno. With Kraftwerk’s adoption of American rhythm within Soul Music they too fall under this banner. However, The Soul captured within their machines would not convey the reality of postindustrial Detroit.

The individual ability of Techno’s producers to create complete musical compositions made up of percussion and other musical elements through the use of machines, encapsulates the merging of crafts described in the Bauhaus manifesto, as stated. “These men of all their kindred spirit will know how to design buildings harmoniously in their entirety – structure, finishing, ornamentation and furnishing.” (Gropius, 1919) Techno’s producers have learnt how to produce every aspect of a track. The track’s structure would be its grid of percussion, the other sounds that work within that regimentation would be the



(fig.26) *Underground Resistance, The Riots Record. (2015)*

tracks finishing, furnishing and ornamentation. One man can perform all the individual roles within an orchestra. The artist is not bound to performing a single task within a project, unlike members of an orchestra. The ability to compose Techno is a sonic embodiment of Bauhaus.

Between Gropius' Bauhaus in the industrial age and Toffler's Techno Rebels, Techno has been molded by modernism and socialist ideology and had been designed to be used as a tool for revolution and social change in the Technological age, the postindustrial age. Where would this revolution take place? Detroit's postindustrial landscape would be fertile ground into which Atkins could plant the seeds for his Utopian vision. Albert Kahn would again cross paths with Detroit's musicians.



(fig.27) *Gary Chandler at the Packard Plant. (unknown)*

The Packard Plant

"Who's ever thought of making music with an old turntable and a scratchy record and sticking it in an abandoned warehouse or an abandoned factory site?... People in Detroit that's who did." – Jerry Herron (High Tech Soul Documentary, 2006)

Detroit's factories, structural grids once filled with the voices of thousands of machines, were empty. Places like The Packard Plant had been abandoned, lying dormant for 30 years. Where Berry Gordy's music provided him with an escape from the industrial structures he worked within. Atkins, May, and Saunderson's music would provide them with reason to reinvade them, occupy them and transform them. "Their sci-fi soundscapes serving as cerebral tickets out of the inner city, not so much escapist but transcendent." (Rubin, 1998) They would Elevate these spaces in ways that could never have been imagined before. "The hard-hitting snares and bass kicks of the new genre punched the ceilings in sprawling brick buildings. These underground cities that permitted deafening volume levels catered to an audience spanning 400 to 1,500" (Bray, unknown) These artefacts of industrial history were once again filled with the voices of machines, conveying the reality of the Detroit that lay beyond the confines of their walls.



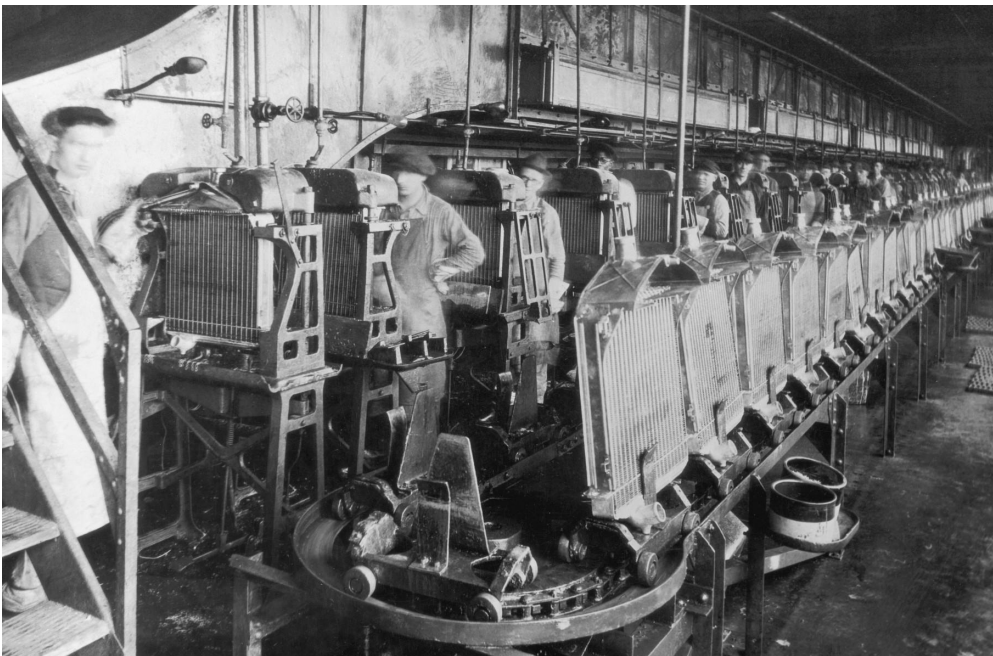
(fig.28) The Packard automotive plant in its heyday.(unknown)



(fig.29) Technical Drawings for Packard Motor Car Factory (unknown)



(fig.30) Blank Musical Score Sheet. (unknown)



(fig.31) The Packard plant assembly line. (unknown)

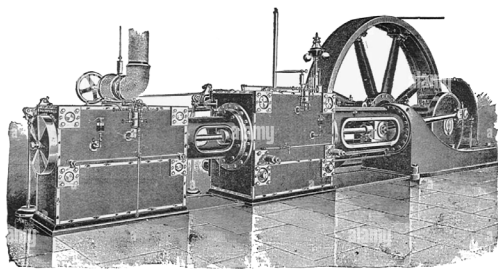
With Development starting in 1903 the Packard Plant would eventually become the largest manufacturing plant in America by 1910. Although the first buildings constructed on the site were not anything out of the ordinary at the time, Building 10, constructed in 1905, designed by Architect Albert Kahn pioneered the use of reinforced concrete in industrial buildings. The use of beams and pillars, forming a grid, allowed for floor to ceiling windows and wide-open spaces. Building 10 was a breakthrough in improved working conditions due to the reduction in oil spillages and fires caused by vibrating machinery placed within previous wooden structural grids. Instead of columns having to be situated within 3 meters of one another, like in previously built structures, the use of reinforced concrete in building 10 increased the span between columns to around 9-meters. Floor spaces could be greater utilized increasing the amount of machinery that could be installed within the building. Building 10 would set the standard for the use of reinforced concrete throughout the rest of the plant. (Abandoned, unknown) (Ravara, 2020) “Kahn became interested in working at a new type of building by making a combination of program, structure and economy, relegating aesthetics and composition to the sphere of formalistic or symbolic rules” (Ravara, 2020) Designing the plant Kahn aligned himself with modernist values adhering to Louis Sullivan’s idea of “form equals function”. The grid of the plant is focused on providing the most efficient space for the industrial process within. The machines inside are as important as the building. A blank score is nothing without notes, the notes are what make that score music.

The layout of the grid Kahn would design at the plant would be as important as the materials it was constructed from. “The Packard factory was organized into independent production modules” “Car assembly worked from the first floor up through the floors until reaching the top floor where automobiles were taken outside on goods elevators. Each building housed the entire assembly process” (Ravara, 2020) The Plant’s design would be a predecessor to Plants Kahn would go on to design for Ford and the production lines that Berry Gordy would emulate within his business model. Later Developing a more linear style of Design rather than the floor-by-floor process described here. The architecture of The Packard Plant makes the site an ancestral figure in Techno’s backstory. If it was not for Kahn’s architecture of Henry Ford’s assembly lines would Gordy’s music have reached the likes of Kraftwerk?

The plant would temporarily produce aircraft for the United States during the Second World War before returning to producing automobiles until the late 1950s. Due to competition with rival automotive empires such as Ford the company saw a drastic decline in business. The discission was made to merge with Studebaker, a fellow struggling company, to try and revive business. Merging resulted in large portions



(fig.32) Packard plant (unknown)



(fig.33) Cooper Corliss tandem compound engine. (1904)



(fig.34) Roland TR-808 Drum Machine. (1980)

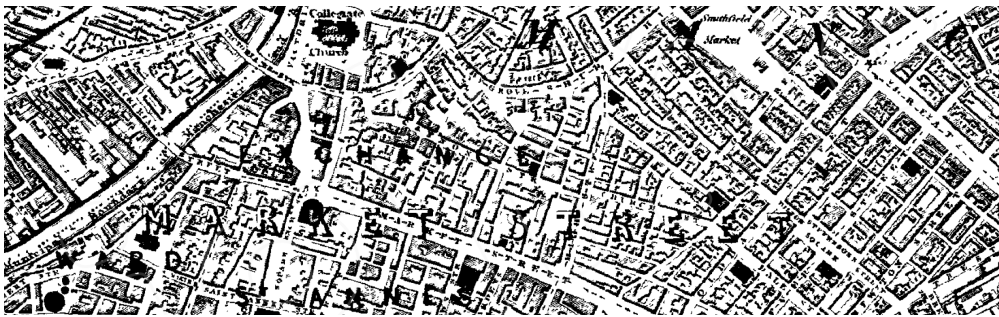


(fig.35) Abandoned Packard Plant. (2022)

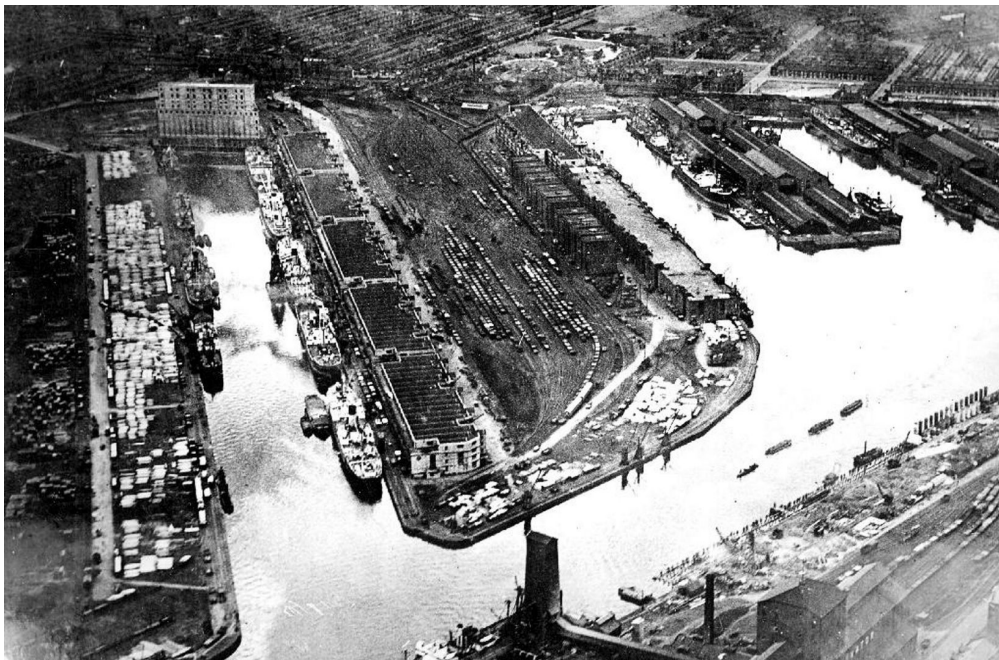
of Packard's manufacturing being relocated out of state. However, the company never managed to bounce back and the Packard plant finally shut its doors in 1956, with the site's last caretaker being let go in 1958. In its prime the plant employed around 40,000 workers therefore the closure of the site had detrimental effects on the local area and was one of the first major blows to Detroit's economy. Since closure in the late 50s the small portions of the plant were let out to small businesses up until the 1980s however, the plant was not maintained therefore fell into disrepair. Since becoming derelict Packard plant has also been ravaged by scrap metal collectors who have caused significant damage to the site. Machinery such as a 3,000 HP Cooper Corliss engine and a KW Western electric dynamo were once the power behind the machinery that filled the plants grid, each machine like a note on a musical score. wiped clean by scavengers, the grid would lay empty ready to be rewritten with the sound of a new kind of machine. Roland TR-808s drum machines and TB-303 synthesizers would be the sounds that would reverberate within the grid during raves at the plant during the late 80s into the 90s. (Abandoned - Detroit's Packard Plant, 2022) (Abandoned, unknown) What was it about The Packard plant that would make it so popular with the Detroit party scene?

The wide-open interiors provided by Kahn's revolutionary use of new materials would benefit the large crowds at raves, enhancing the sense of community and social spirit. The design of Packard Plant itself is a pivotal point in the progression of modern architecture, which has been a key influence in Techno's story. If Techno's musical grid or structural make up has been inspired by the principles of modern architecture or is in fact a sonic expression of Bauhaus, then the music fits perfectly within the context of the Plant. The modernist minimal shell of the plants the grid doesn't overpower other human senses, music is allowed to be consumed in its entirety and in its decayed state, tells the story of Detroit in synchronization with the music. Achieving groundbreaking progress in working conditions, Techno's utopian vision intends to build upon Kahn's architectural execution, in its own revolutionary manner.

Techno would soon make its way into the hands of a people in a city in a similar predicament to Detroit. Manchester, once the heart of the industrial revolution, now a postindustrial wasteland, Due to industrial decline and lack of help from the government. The working-class people of these cities shared a similar sense of abandonment by society.



(fig.36) Map of Manchester. (1840s)



(fig.37) Aerial View of Manchester Docks in the 20th century. (unknown)

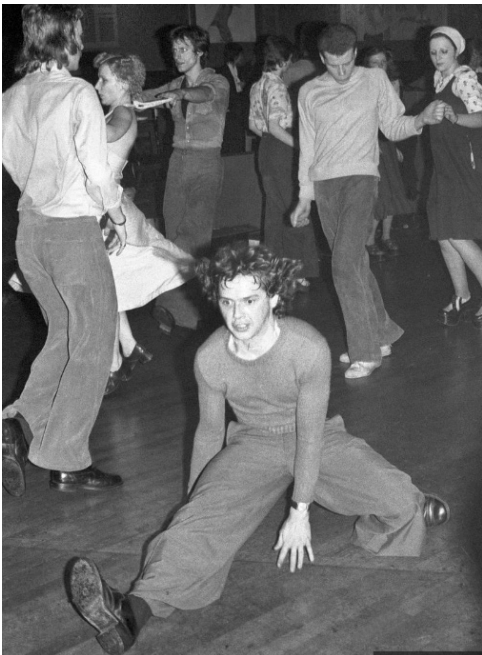


(fig.38) The Northern soul Scene at Wigan Casino (1970s)

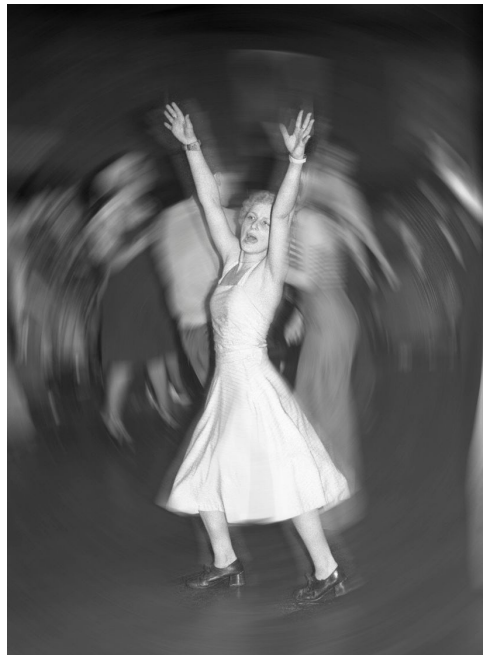
Industrial Manchester and Northern Soul

By the late 1700s Manchester was a prominent town in textile merchantry. However, these merchants relied on spun cotton produced by mills. At that time textile mills relied on hydropower therefore needed to be situated upon a body of moving water, a limitation on where mills could be situated. Showcasing recent advances in steam power, businessman Richard Arkwright would open a mill on Sude hill, a location devoid of any naturally flowing water. This meant Arkwright's would be situated within close proximity to Manchester's cotton merchants massively reducing transportation costs of spun cotton. Others would soon follow suit, opening their own steam powered mills admits the bustling textile town. (Miller, Ian & Glithero, John, 2017) Gradually as the number of mills multiplied, they would require the manufacturing of parts and machinery by engineering firms. The dying of cotton would produce a chemical industry and banks and Insurance companies were needed to support the financial growth of the city. Manchester became a society that revolved around cotton, thus "Cottonopolis" was born. Drawing in an ever-expanding workforce, between 1801 and 1901 Manchester's population would grow from 330,000 to 2.4 million and become the world's first industrial city. (Chains of Influence in Manchester's Industrial Revolution, 2018) Trade would rely on the first inter-city railway between Manchester and the Docks in Liverpool, built in 1830. However, industry had grown so great by the end of the 19th century that trade by rail was no longer substantial. (Johnson, unknown) In 1894 The Manchester Ship canal opened making Manchester the biggest port in Britain, despite being 40 miles inland. (Ice, 2023) Manchester's trade and industry would continue to run into the second half of the 20th Century. Working within Manchester's industrial spaces was a hard life. During the 1960s and 70s the city, like other industrial settlements in the region, would grow and attachment to the musical exploits provided by Berry Gordy and his musical production line. The Northern Soul movement would provide workers with a sense of escapism and relief from industrial life.

The origins of Northern Soul can be traced back to London's mod scene in the early 1960s. Not wanting to listen to the music of their parents, young people started listening to new genres from the states. Modern Jazz, R&B, Soul and eventually Motown for a brief period. During this time Northern football fans visiting London would bring these records back up north where Motown would connect with people in industrial regions in ways they had not in London. By the mid-60s, Clubs like The Twisted Wheel in Manchester and Mojo's in Sheffield would sow the seeds for the movement when they started hosting Soul Nights. Over the weekend, Miners, Factory and mill workers would dance all night long to Soul records. The upbeat rhythms freed them from the confines of the industrial lives that they lead. London would soon move on to the Psychedelic Rock of the late 60s, never allowing Motown to



(fig.39) *On the Dance Floor at Cleo's in Derby. (1974)*



(fig.40) *Who's the Woman in White. (1974)*



(fig.41) *TUC Campaign for Economic and Social Advance (1980)*



(fig.42) *Hartford Mill, Oldham. (2015)*



(fig.43) *Derelict building, Ancoats. (unknown)*

become a part of the culture as it did in the Midlands and the North. These regions were too hard, too gritty, to relate to flower power and Psychedelic Rock. As the 1960s ended, Detroit and Motown moved on and genres like Funk emerged. Confronting racial tensions in America, the music no longer contained the uplifting feeling that these industrial regions relied on to transport them from their reality, forcing them to delve deeper and deeper into the past, forever searching for the 4 by 4 upbeat grooves that provided them safe passage out of the industrial age that started collapse around them by the end of the 1970s. By that point Soul music and the Motown sound had become deeply embedded in the culture of cities like Manchester. (Northern Soul: Living for the Weekend, 2014) Like Detroit, Britain's industry had been in decline since the mid 1950s and Manufacturing since the mid 1960s, Industrial cities were hit the worst. (Tomlinson, 2021)

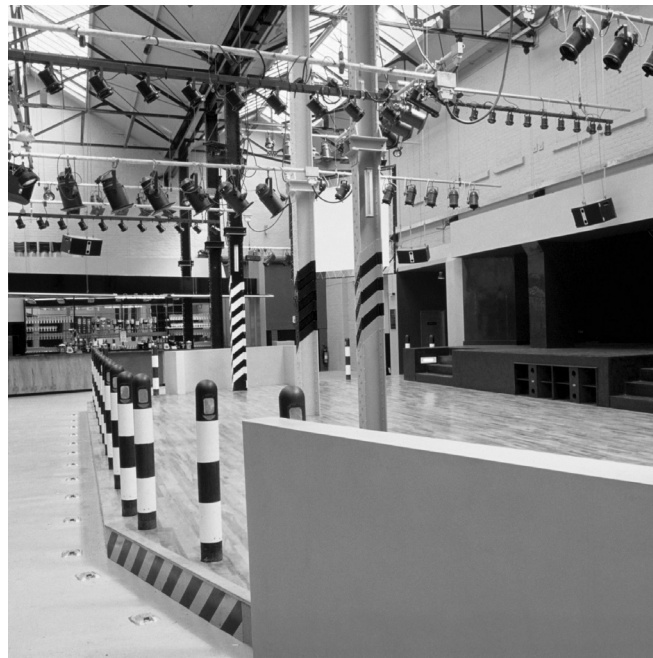
"Between 1961 and 1983 Manchester lost 150,000 jobs in manufacturing" (Vintage Everyday, 2021), having a knock-on effect. In 1982 Salford Docks would close, due to a lack of industrial trade, resulting in the loss of a further 5,000 Jobs. (BBC, 2011) Due to the industrialization of the third world and their take over of the textile and manufacturing industries, charging lower rates for production, in addition to a recession caused by fossil fuel companies, Manchester's unemployment rates would skyrocket. The Conservative British governments lack of care towards industrial regions became apparent, as they made little attempt to offset the consequences of industrial collapse. During Margerete Thatcher's first term, between 1979 and 1983 Over 2 million jobs in industry and 1.7 in manufacturing would be lost. Postindustrial Britain would grow to resent Thatcher and the Conservative government, feeling abandoned. A similar sense of Abandonment experienced by Detroit's inner-city population. The landscapes left behind by these events would also share a resemblance as Cummins explains "There was a real sense of kinship between the doomed industrial metropolis of Henry Ford's Detroit and Chicago, tough and passionate, which used to thrum to the sound of engine looms and Lathes, and Manchester formerly the aforesaid of cottonopolis, cradle of the industrial revolution, now a collection of smokestacks and empty factories on the Irwell." (Cummins, 2009) The shared existence experienced by Detroit and Manchester would be a vital cog in Techno's adoption.



(fig.44) *The Hacienda, Manchester. (Unknown)*



(fig.45) *Inside the Hacienda nightclub, (unknown)*



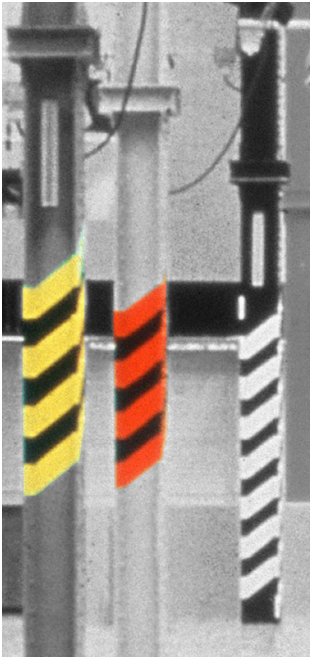
(fig.46) *The Hacienda, Bollards and cats' eyes. (1982)*

The Hacienda and Acid House

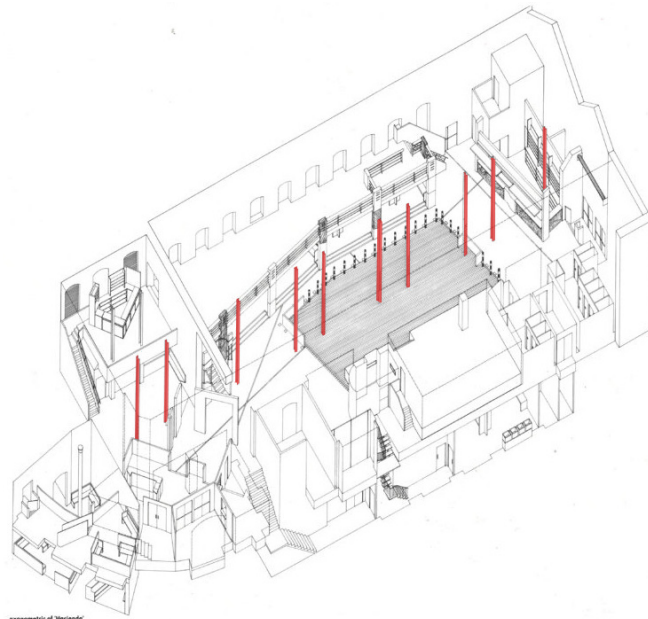
“While Techno struggled for acceptance in London in the late 1980”, “other English cities began relating to Techno and Acid House on a more basic level. In particular, the Northern Soul fans in cities like Birmingham, Sheffield and Manchester.” (Sicko, 2010) Being brought up on Northern Soul, the same upbeat rhythms that Kraftwerk would utilize within their music and then later by Jaun Atkins, would be a crucial component in Manchester’s open armed acceptance of Techno. The shared experience of growing up in a postindustrial environment gave Mancunians the ability to decipher the musical language of Techno’s machines. With an abundance of postindustrial structures and now equipped with this new sound, where would Techno be utilized within Manchester’s industrial grid as a vessel to utopia from harsh realities of the postindustrial age and how would the design of these spaces facilitate that Manchester revolution?

Techno records would start being played by DJ Mike Pickering, in The Hacienda, in the mid 1980s (Sicko, 2005). The Hacienda was founded in 1982 by Factory Records owner and members of Manchester band New Order. A reformed Joy Division minus lead singer Ian Curtis due to his tragic suicide. Joy Division would help pave the way for electronic music in Manchester, being another group heavily influenced by Kraftwerk’s sound, as bassist Peter Hook States. “Kraftwerk were such a huge influence on us, both musically and stylistically” (Hook, 2020). During the nightclub’s early years, The Hacienda had struggled to pick up momentum. However, through Techno from Detroit and House music from Chicago the club came into its own around 1986. (Kemp, 2022) Tony Wilson, through Graphic Designer Peter Saville, a key part of Factory records aesthetic, would assign the Design of the Hacienda to Ben Kelly. An industrial Grid of cathedral like proportions, housing a multitude of functions over the last 80 years. From an Iron works to a closed yacht showroom, where the Hacienda would take over from, the building is symbolic of Manchester’s economic roller-coaster. Talking about their plans for the space Ben Kelly states. “Tony Wilson loved the idea that the space was for the city” (Hacienda Landscapes: In Conversation with Ben Kelly, & V&A Dundee, 2021). The taking over of a space previously used for housing toys for the elite and transforming it into something for the people captures the revolutionary spirit of Toffler’s Techno Rebels, the philosophy behind Atkins’ music.

The Hacienda’s design would reflect aspects of Bauhaus and the ideology of Toffler’s Techno Rebels, as Ben Kelly’s website states “it was a real-life stage set, built with everyday materials which were used to maximum effect”. A physical embodiment of the idea that “technology does not need to be big, costly or complex in order to be sophisticated” (Toffler, 1981) are the Cat’s eyes and traffic bollards used to map out the hazardous edge to a raised dance floor. Kelly recalls the bollard’s



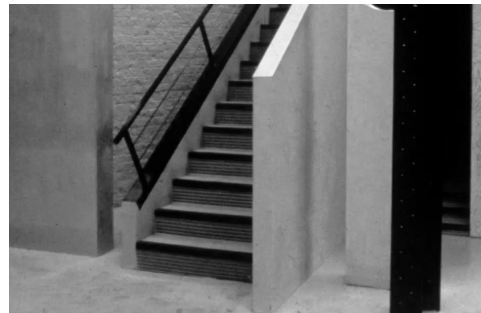
(fig.47) The Hacienda Columns. (1982)



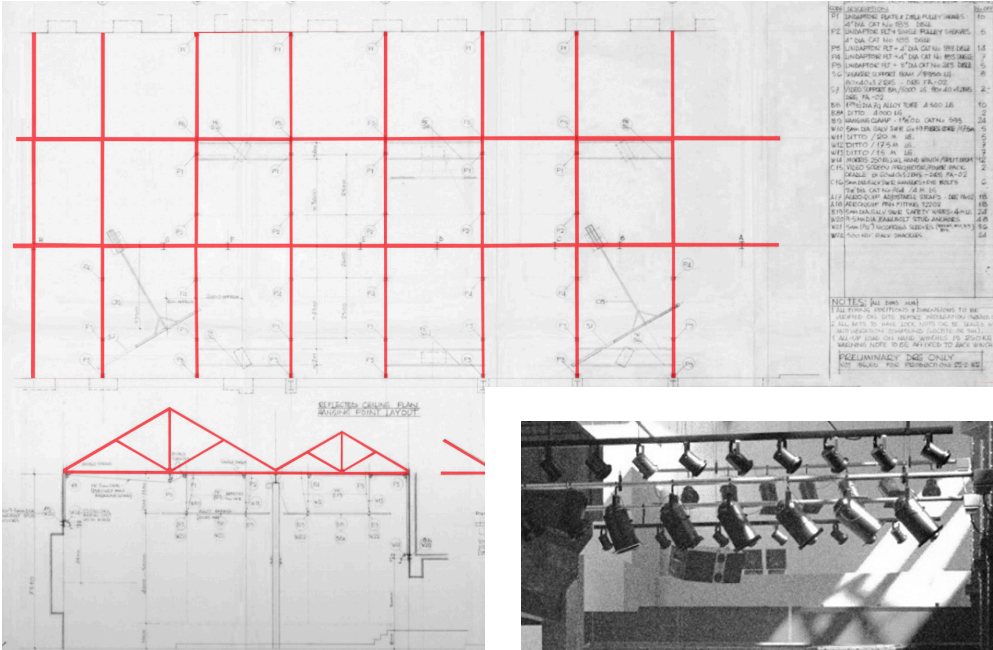
(fig.48) Axonometric of The Hacienda. (1982)



(fig.49) Painted ceiling in stairwell of the Prellerhaus (2019)



(fig.50) Hacienda Staircase. (1982)



(fig.51) Drawing of Truss Hung Lighting arrangement. (1982)



(fig.52) Hacienda Lighting. (2020)

costing £6.50 each in his own words, “the biggest bargain you can imagine” (Hacienda Landscapes: In Conversation with Ben Kelly, & V&A Dundee, 2021). Black and yellow hazard stripes on the step also mark out the dance floor’s perimeter, a theme that is apparent throughout the design of the club. An industrial language that would become a symbol of the Hacienda. The structural spine of the main space’s grid consisted of 10 large steel columns, marked in red on the axonometric drawing to the left. These columns would end up traveling through the middle of the dance floor becoming a potential hazard to club goers. (Designer Ben Kelly’s Orla History of The Hacienda Nightclub, 2021) Through the application of eye-level, brightly coloured diagonal hazard stripes the location of these columns is made clear against the soft grey and blue tones of the surrounding walls and seating. Each column has its own personality, a distinctive cladding. The use of 2 Bright primary colours is deliberate. Red, a psychological indication of danger associated with the colour of blood and yellow, a stimulating colour that grabs human attention when covering 50% of an object’s surface area (Seton, 2021), which the hazard stripe patten provides by design. This is something Kelly took from the colour coding of industrial piping. The use of colours to evoke human emotion was a principle taught at the Bauhaus. “In his preliminary course, Johannes Itten brought together various colour theories and taught his students about the subjective experience of colour combined with the objective fundamental laws of colour perception.” (IMM Cologne, unknown) Highlighting the importance of building’s structure, through colour was another practice of Bauhaus’ architecture. An example of this would be in the stairwell of the student accommodation block at the Bauhaus, the Prellerhaus. “Upon entry into the Prellerhaus, we were taken with the use of color to highlight the architectural structure of the space. This was the work of Bauhaus Junior Master Hinnerk Scheper who believed in emphasizing form with color. Each floor of the Studio Building was differentiated by ceiling color.” (Hofmeister, unknown). The central line of the Hacienda’s structural grid is highlighted with great importance as these columns allow for the facilitation of the activity that takes place within. The individualization of each column through colour allows for them to be used as waypoints, useful within the setting of a busy nightclub. Above, the trusses of the grids ceiling have been utilized by Kelly to hand retractable lighting on a pully system. A flexible arrangement that can be changed to suit the needs of the city. (Hacienda Landscapes: In Conversation with Ben Kelly, & V&A Dundee, 2021)

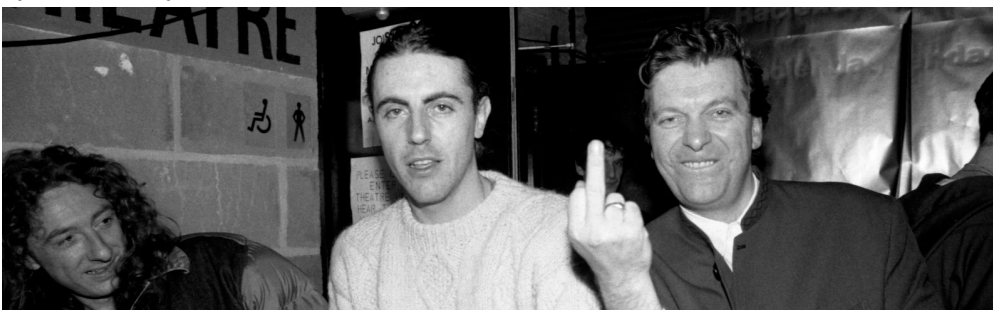
Like The Packard Plant, The Hacienda’s structural grid reflects Techno’s strict regimentation and consistent rhythm. The large open space made possible by a strong structural grid added to the experience of the club. “The Hacienda, where the big old building’s acoustics were perfect for this new music’s trippy minimalism” (Robb, 2009) While the Hacienda may be better known for playing House music from Chicago, DJ mike Pickering remembers “The real kind of minimalist stuff was Detroit,



(fig.53) The Hacienda, Manchester. (1982)



(fig.54) Blackburn Haslingden Unit 7 Warehouse Rave. (1989)



(fig.55) Nathan, Manager of The Happy Mondays and Tony Wilson, Head of Factory Records.. (unknown)

I'd put them on and some things grab you and some things don't, and when things grab you and their really simple I think there's something very special about them." (An interview with Mike Pickering, 2004) This Minimalism is reflected in the Design of the club and within the architecture involved in Techno's backstory. The use of timeless cubic forms and modern materials took Manchester's nightlife into the next age, as Savage explains. "When it launched in May 1982, the Hacienda was an entertainment space that was radically out of sync with Manchester's existing venues: high spec, futuristic, willfully utopian." (Savage, 2022) The Hacienda's futuristic vision of a space for the people would make it "the beating heart of the Acid House Movement" (Kemp, 2022), which arose in 1988.

Acid House's sound encompassed the more minimal House music from Chicago as well as Techno from Detroit. The distinctive psychedelic sounds produced by the Roland TB-303 synthesizer would be integral to the music's sound and the inspiration behind the term Acid. Whilst in the more wealthy south of England the music had less political ties, the postindustrial north was quite the opposite, as Smith explains. "In the northern Acid House scene, it was not just hedonism, fueled by large disposable income, but a chance to escape from dreary post-industrial world that had been delivered by nearly a decade of Thatcherism. (Smith, 2019) The grids of Manchester's postindustrial architecture would provide a fitting setting for the movement, as Robb explains. "Acid House was the perfect soundtrack to the end of the postindustrial era — Those battered dingy warehouses suddenly went into full colour and sound systems boomed around the city centre." In the North there was a real sense of reclaiming spaces lost to the postindustrial era and bringing them back to life. Whereas their predecessors in the Northern Soul movement had Used Detroit's music as a means of escaping from their industrial prisons and escaping into clubs to dance away their troubles, the Acid House movement would invade these spaces and reenvision them into spaces for the people. The Hacienda and the music played there would inspire many of the bands that came out of Manchester in the late 1980s and early 1990s. The Stone Roses, The Happy Mondays, Inspiral Carpets among others would help to transform Manchester from a postindustrial city to a thriving city of culture, attracting tourists from all 4 corners of the world. (Lindores, 2022) As Ben Kelly explains, for Tony Wilson the Hacienda was never about money. It was about creating a democratic space for the use of the city. The Hacienda never charged an entrance fee and anybody was welcome. (Hacienda Landscapes: In Conversation with Ben Kelly, & V&A Dundee, 2021) A complete contrast to the capitalist views of the Conservative government that postindustrial Britain was abandoned by. The Hacienda was more in line with the principles of Bauhaus and Toffler's Techno Rebels. The influence of the Hacienda would provide Manchester with a sense of independence from the capital and hope for what the future could provide. Manchester would become a testament to Juan Atkin's vision for the ability of music to take a city out of the postindustrial decay and into the future.



(fig.56) *he Warehouse Project, Depot Mayfield. (2019)*



(fig.57) *Depot Mayfield. (unknown)*

Depot Mayfield

It's been more than 30 years since the start of the Acid house movement and over 20 years since the closure of the Hacienda in 1997. Manchester, however, continues to bring its industrial structures back to life. The Warehouse Project, founded in 2006 by Sacha Lord-Marchionne and Sam Kendal, intends to continue Manchester's cultural legacy from The Hacienda. Kendal details how growing up in Manchester during The Hacienda's heyday, it was all around you. It made up a huge part of the urban fabric of the city. "The objective of WHP [Warehouse Project] was to establish an exciting and anticipated event, something different to a "normal club night" incorporating sci-fi and futuristic elements, with a look to the past by conveying an "acid house spirit" (VIC, 2018) Kendal explains. From Boddington's brewery, to Store Street under Manchester Picadilly station, to Victoria warehouse in Trafford Park, then returning to Store Street in 2014, The Warehouse Project has utilized a number of Manchester's industrial structures. In 2019 WHP would undertake their most ambitious project to date. Taking over Depot Mayfield as its new base of operations would make The Warehouse Project the biggest organizer of indoor House and Techno events in the UK with a capacity of 10,000. (How The Warehouse Project Changed Clubbing Forever, 2022)

Depot Mayfield is an expansive structural grid of steel beams and columns constructed to support Mayfield train station above. A testament to Manchester's industrial prowess, the station was completed in 1910 to tackle the problem of an overspill of travelers from adjacent London Road station, now Manchester Piccadilly. Due to London Road's elevated position on a viaduct, Mayfield station would need to be elevated to the same level if train lines were to connect, creating a vast network of steel columns and brick arches beneath. After 50 years of operation as a passenger station Mayfield would close its doors to the public in 1960, perhaps a sign of the city's industrial decline. In 1970 the vast space underneath the station would be turned into a parcel depot and operate as such until 1986. (Disused Stations, 2018) Derelict for over 30 years, the Depot's colossal grid would provide The Warehouse Project with an unparalleled capacity of 10,000 party goers. These numbers are a testament to the cultural impact of The Hacienda and the Acid House movement, providing Manchester with a cross generational adoption of Techno and House music. Like The Hacienda, Depot Mayfield's grid could be easily utilized for the rigging of lighting and speaker systems. Previously filled with the rhythm of passing trains overhead, the depot's grid would once again be filled with mechanical sound. This time in the form of Techno telling the story of industrial decline in the western world, of which the derelict goods depot is a product of. Left largely untouched by The Warehouse project, the regimented steel grid of columns and beams reflect the metallic rhythm of Techno's percussion. Where Techno tells the story



(fig.58) *The Warehouse Project. Launch Film. (2019)*

(fig.60) *Fac 1. Use Hearing Protection. (1978)*



(fig.59) *The Warehouse Project Logo. (2019)*



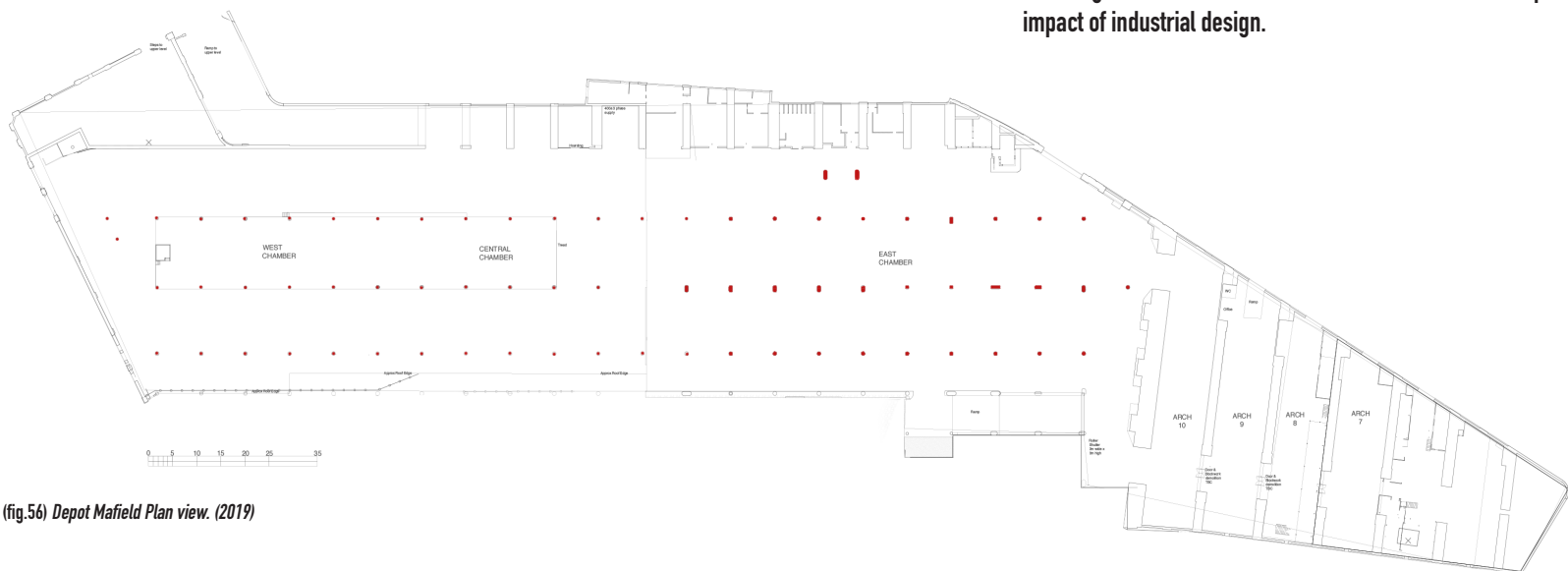
(fig.61) *Wear a safety helmet sign vector image. (unknown)*



WEAR SAFETY HELMET



(fig.56) *Studio Mobros. Text & Backdrop. (2019)*



(fig.56) *Depot Mayfield Plan view. (2019)*

of Detroit's postindustrial state in sonic form, Mayfield Depot visualizes Manchester's shared experience.

Previously used as a location for the post-apocalyptic sci-fi drama *The Last Train* (1999), Depot Mayfield's aesthetic would perfectly fit The Warehouse Projects brand. The building would play a key role in the marketing campaign in 2019. "We wanted to capture the vast scale of the new venue by commissioning a creative film. This was the headline in the brief from the team at WHP – the venue as the hero." (Studio Moross, 2019) This highlights the importance of the depot's structure and what it can provide for The Warehouse Project. The film opens with Mayfield's lifeless interior then suddenly a wavelike form is conjured up from the ground and proceeds to travel through the space, breathing life into it. The remainder of the film features what appears to be forms of energy soaring through the postindustrial landscape or exploding from vats or silos. Does Nic Hamilton's launch film depict the Sci-fi soundscapes described by Rubin? A visual representation of Techno's power and Atkin's vision to change the postindustrial landscape that surrounded him. Studio Mobros, inspired Mayfield's architectural plans, would also create a backdrop for text and announcements featuring the layout of the building's grid of columns. The sans serif font placed upon this grid still breathes the design language of Bauhaus. The combination of the two conveys an organized, futuristic aesthetic that complements Techno's sound and ideals. The redesigned WHP logo is heavily inspired by Peter Saville and the industrial aesthetic of *The Hacienda*. Although more futuristic, the logo still features the parallelogram forms that are produced by the diagonal hazard stripes within *The Hacienda's* design language. The lower half of the heads in the logo are reminiscent of workmen's safety signs, something that Peter Saville incorporated into the *Factory Records* logo. This is a continuation of the industrial branding associated with Manchester's music scene and proof of the impact of industrial design.



(fig.57) *The Warehouse Project Manchester (2019)*

Conclusion

Due to the Global success of Berry Gordy's business model inspired by the efficiency of Henry Ford's production lines, a testament to the design of Albert Kahn's industrial grids in which they operated within. Soul music would reach Kraftwerk in Dusseldorf as well as industrial Britain providing them with The Northern Soul Movement. Kahn's design of the Lincoln plant would not only play a role in techno's conception but also its reception. Kraftwerk's intent on the continuation of Bauhaus' legacy would not only form the group's aesthetic but regimented sound. A key influence in Juan Atkins' music and the development of Techno. Bauhaus also shares a similar socialist philosophy to that of Toffler's Techno Rebels, something that Atkins feels his music is a sonic representation of. The reason that these industrial grids align with the music is because they are designed with the same philosophy as Techno. The metallic regimented rhythms of percussion within Techno's beats are visually reflected in the consistent rhythm of steel grids in modern industrial architecture. The grids perform as highly adaptable spaces to be experimented within whenever that be musically or physically, both forms of grid are a testament to the capabilities of technology at the time they were constructed. When these two creative mediums meet in spaces like the Hacienda it can create something revolutionary. The Acid House movement is evidence of this.

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