



LOCHGELLY TOWN CENTRE

A Proposal for Regeneration – Lochgelly, Scotland



Judson University Master's of Architecture
2012 Graduate Thesis, John S. Martin

LOCHGELLY CITY CENTRE

A Proposal for Regeneration – Lochgelly, Scotland

Problem Statement:

Town of Lochgelly, located thirty miles north of Edinburgh, Scotland, has been identified as an economically distressed area targeted for regeneration as part of the Scottish Sustainable Committee's Initiative program. The existing forty year old Lochgelly Centre facility has become obsolete in terms of function, aesthetics, and construction durability, and is an impediment to future economic redevelopment of the historic town center.

Design Concept:

The Lochgelly Centre will replace the existing complex to form a new creative learning centre offering cultural, communal, and educational opportunities in visual arts, performing arts, recreation & new technologies. New facilities include a 600 seat traditional theater and 100 seat flexible black box theater appropriate for community-based theater and as venues for the annual Edinburgh Cultural Festival. T.L.C. will incorporate a badly needed new town library which, along with a new art gallery and cafe, will reinforce the civic and retail function of Bank Street as the principle pedestrian and vehicular artery for the town. Continuous activity of the Centre will be enhanced through a magnet school of the arts for the Fife region, and a live/work building offering studios open to the public below and loft living space above. The new center will be anchored by a defined civic plaza and tower at the intersection of Bank Street and Auchterderran Road to serve as the main entrance for the theater lobbies and also as a venue for weekend art fairs.

In order to raise the centre's profile as a regional destination, the new artist studios, gallery, and school of the arts will be administered as a Fife regional extension of the Edinburgh-based Royal Scottish Academy, an independently funded institution led by eminent artists and architects to promote and support the creation, understanding, and enjoyment of visual arts through exhibitions and related educational events. The components of the program are housed in discrete, stylistically distinctive buildings compatible in scale with the surrounding built fabric. This will also allow for phased implementation of the project.

Program:

- . 600 seat performance theater
- . 100 seat experimental theater
- . School of the Arts
- . Student Dormitory
- . Live work studios
- . Regional art and heritage gallery
- . Library and information centre
- . Public hall and conference facility
- . Child care/Senior housing facility
- . Café and gift shop

Royal Scottish
Academy, Edinburgh





Lochgelly, UK

PROJECT Yellow – Main Street – old road to Cowdenbeath
SITE Orange – Auchterderran Road approach from A92 dual carriageway



PROJECT SITE



Existing Center From Bank Street



Town Hall From Bank Street



LOCHGELLY CENTRAL DISTRICT BUILDING USE AND TYPE STUDY



Edinburgh Castle



St. Leonard's School, St. Andrews

Scottish and County Fife Architecture



Miners Hall



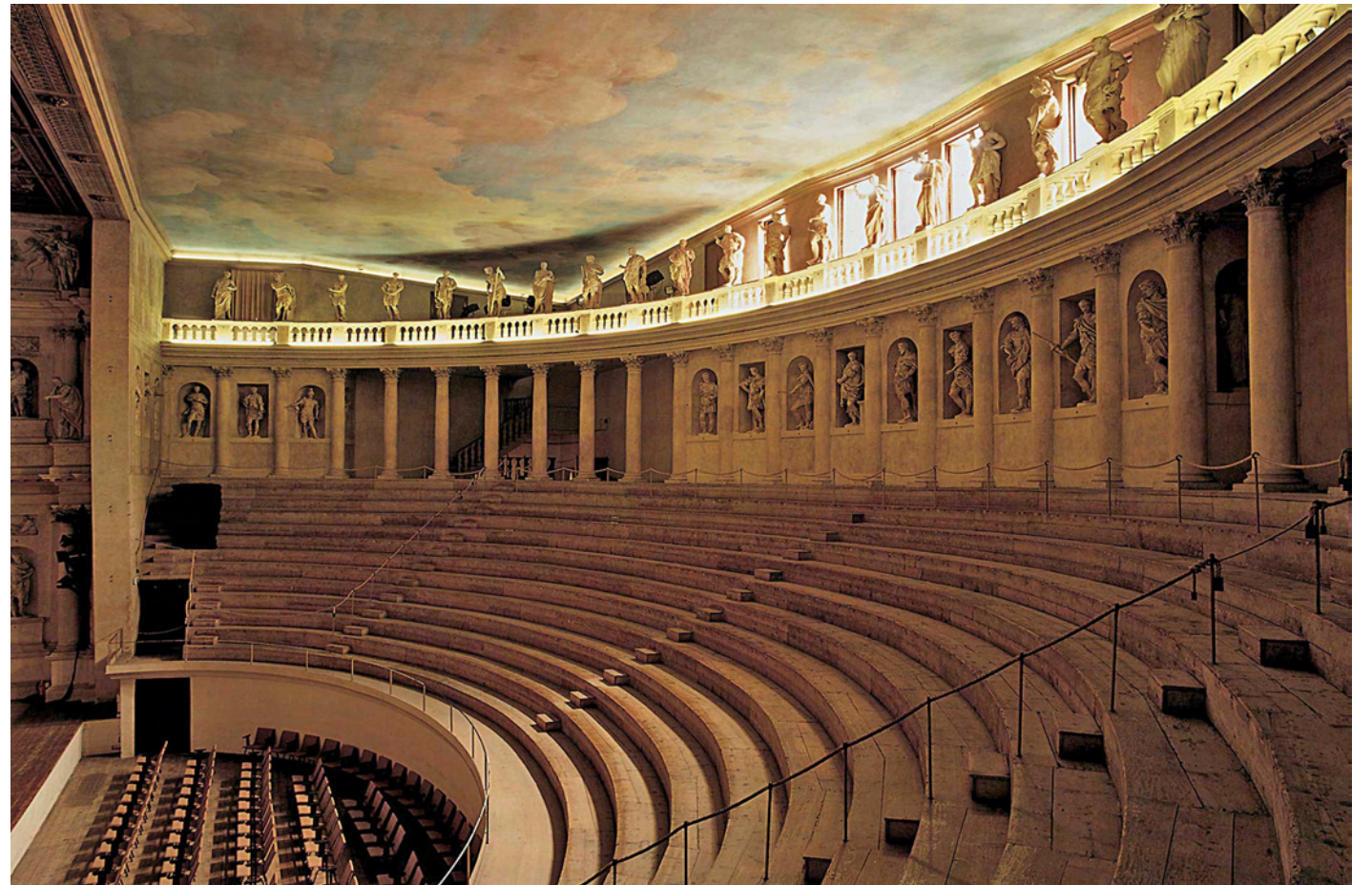
South School



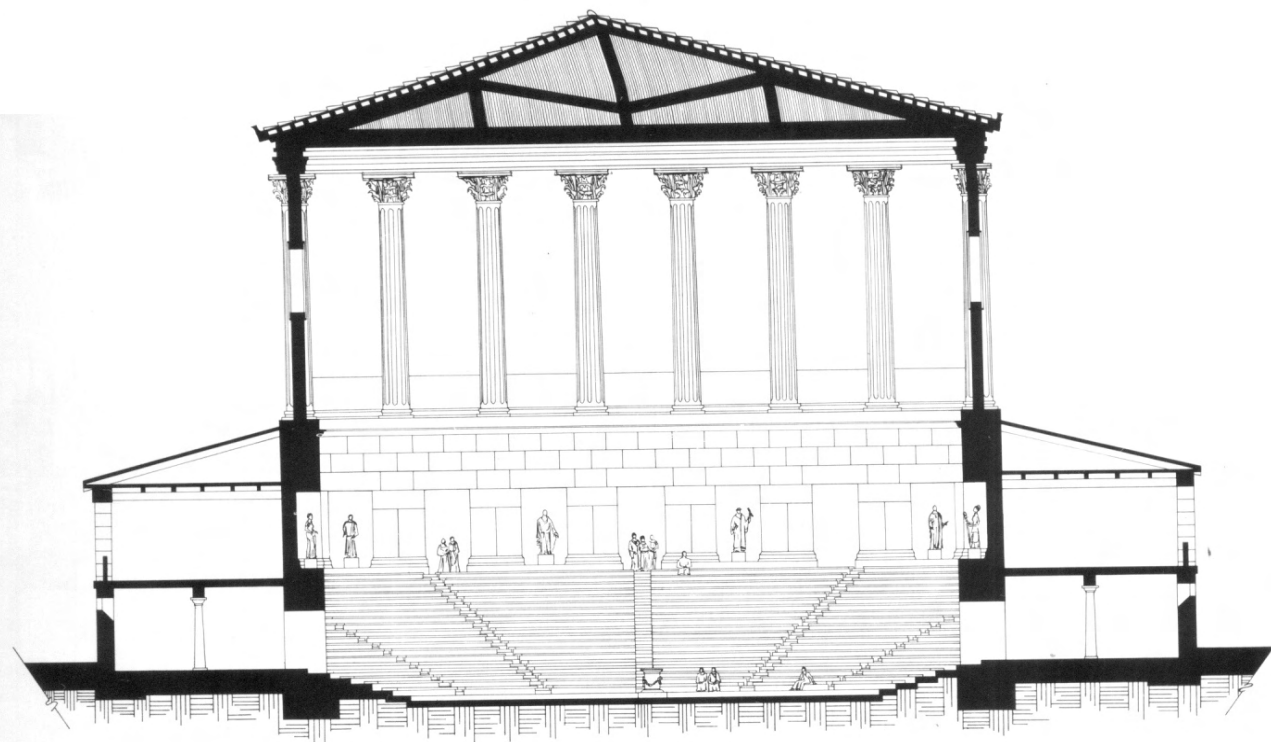
Old Town Hall
And Library

Lochgelly Civic Buildings

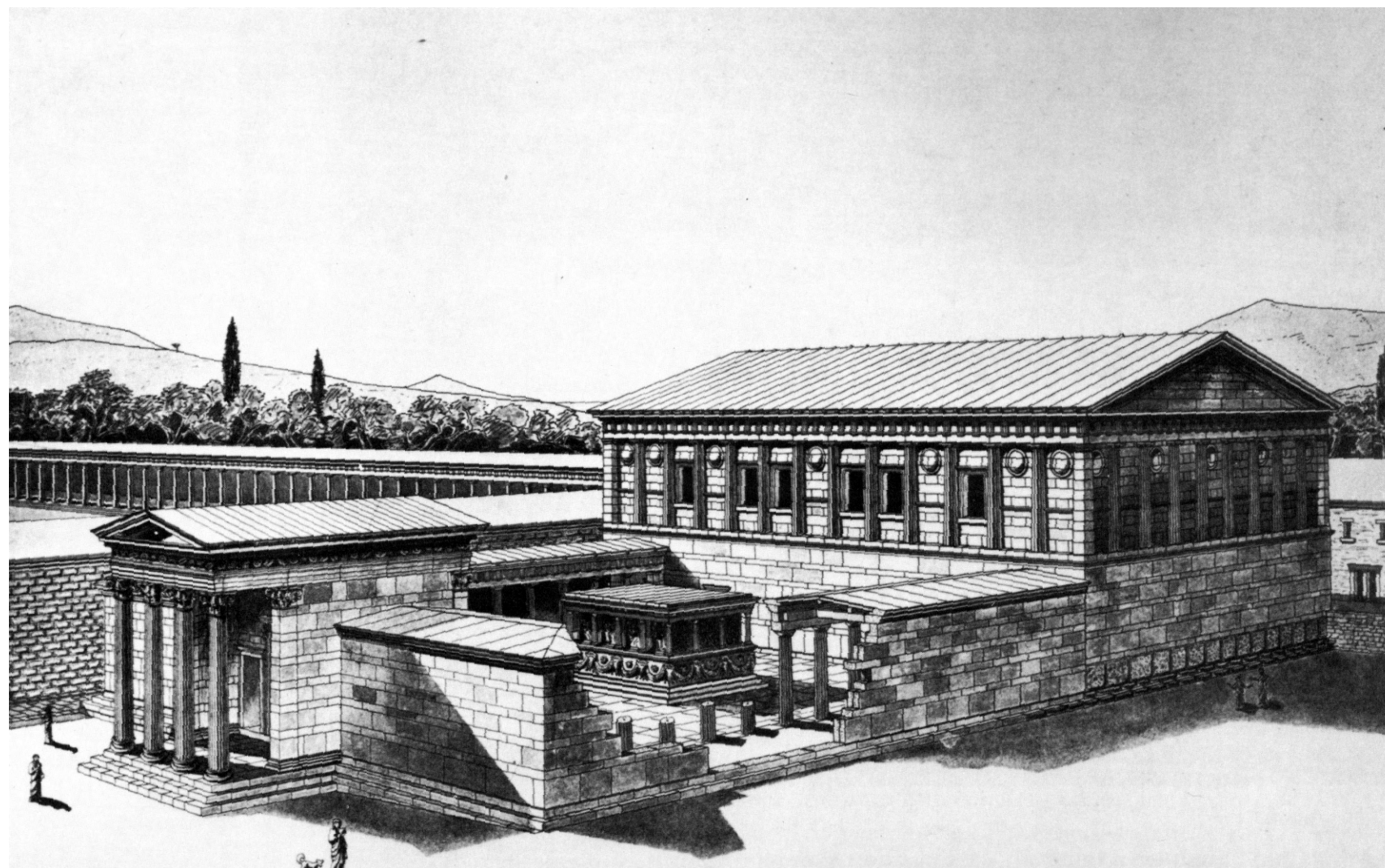
SCOTTISH ARCHITECTURE PRECEDENTS



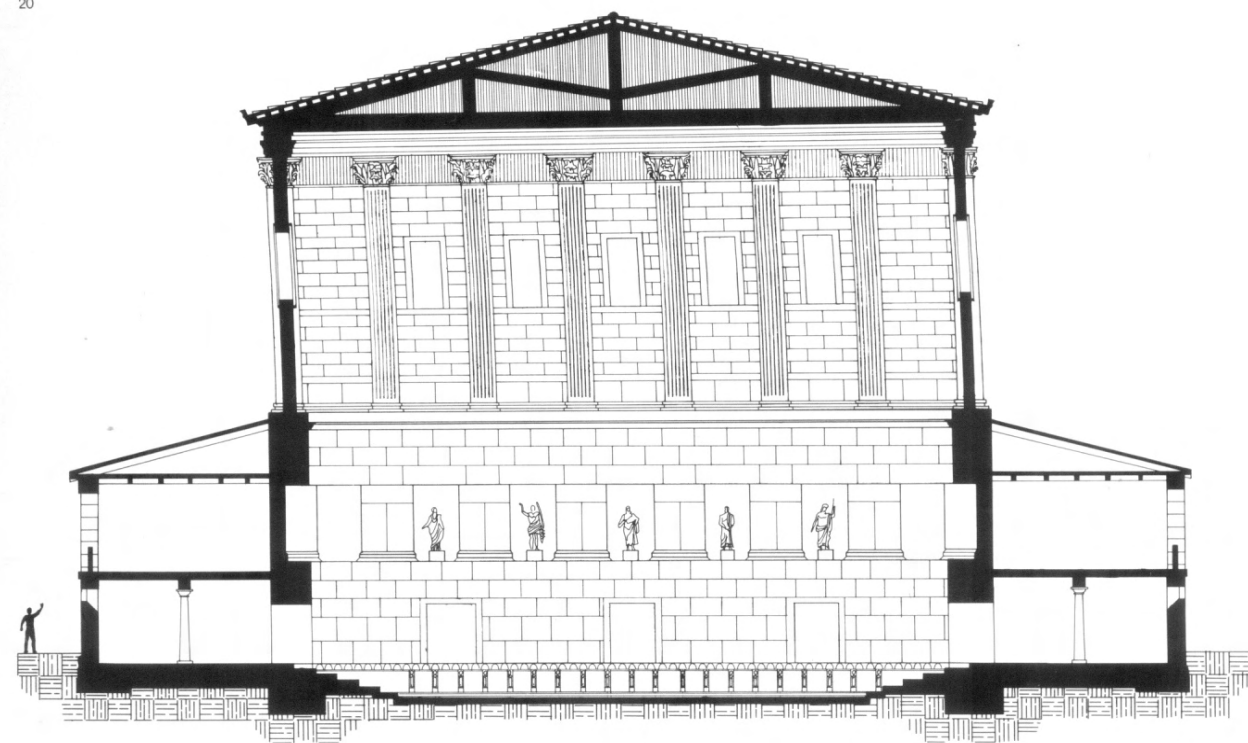
TYPOLOGICAL PRECEDENTS - THEATERS



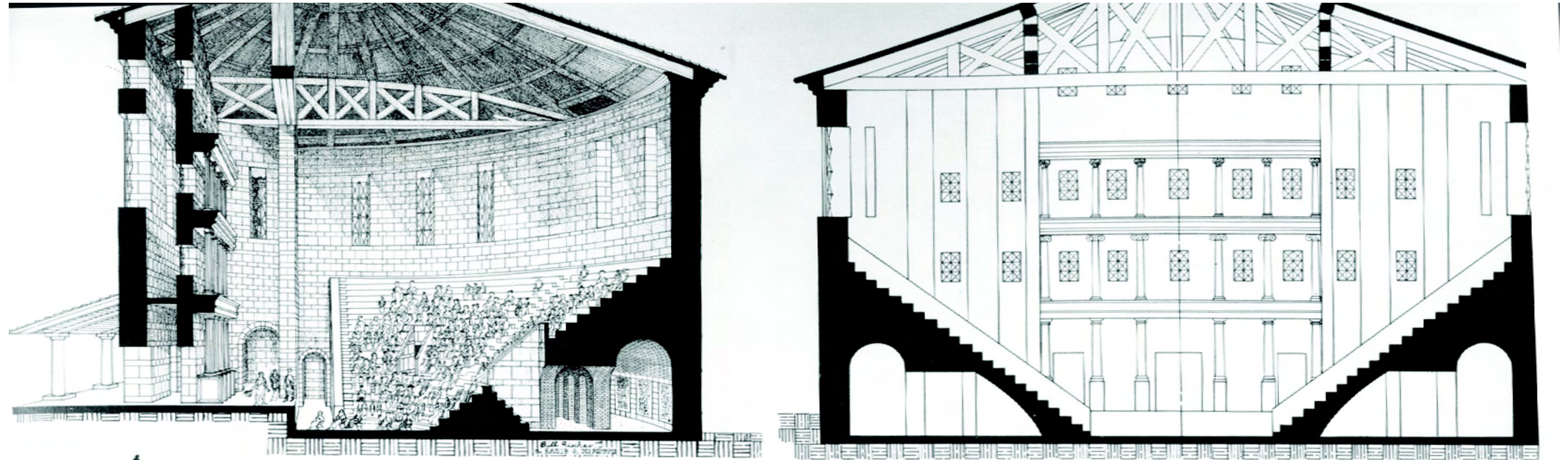
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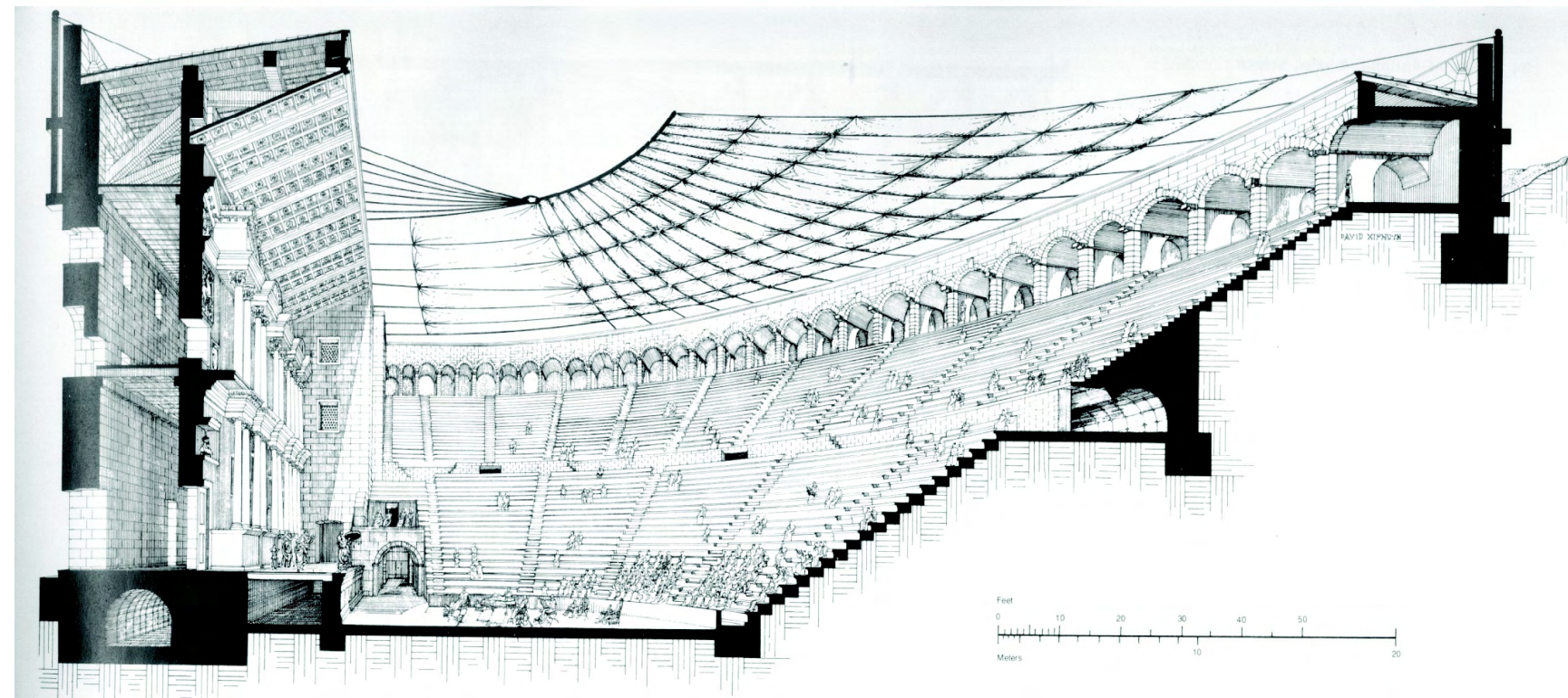
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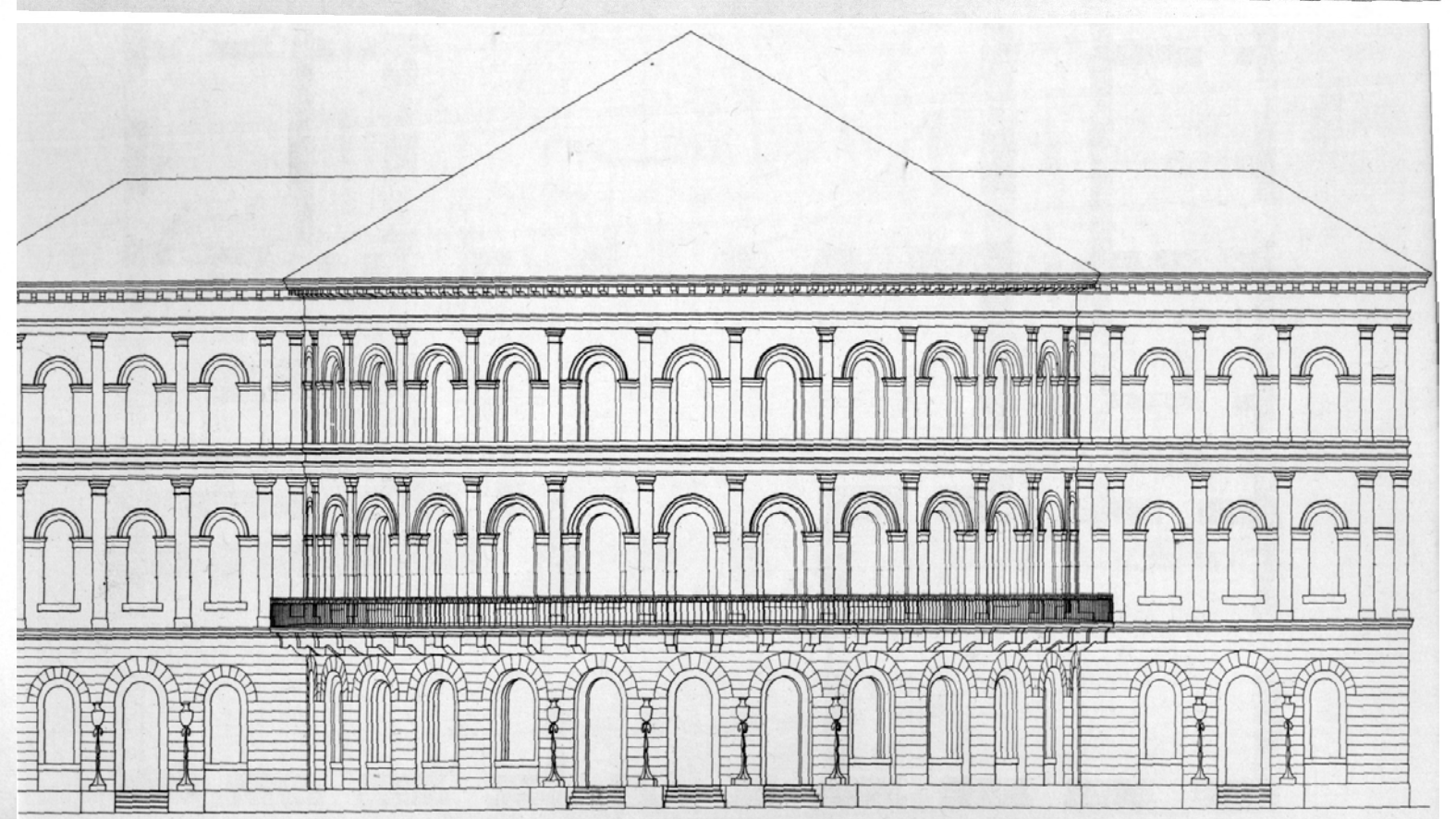
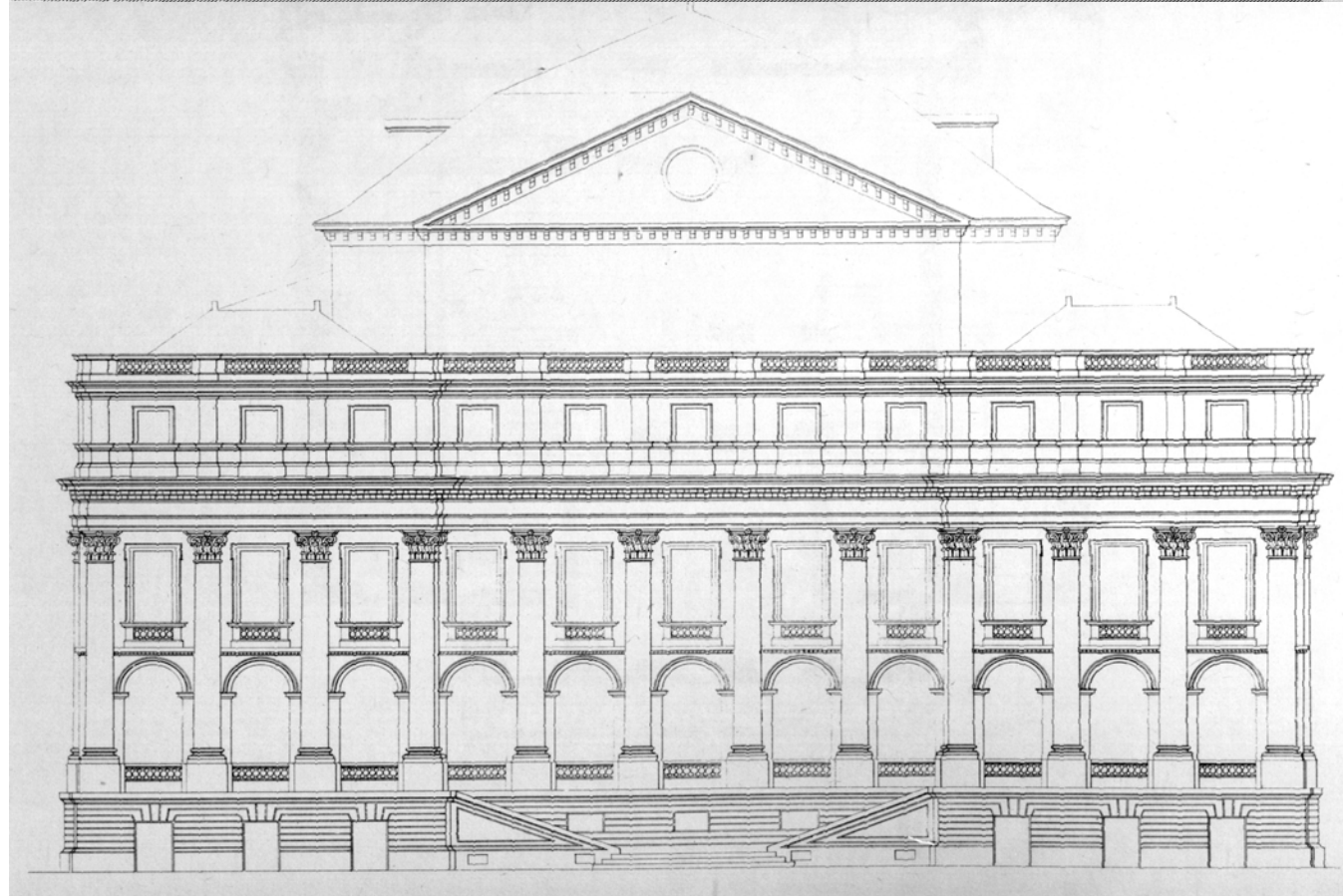
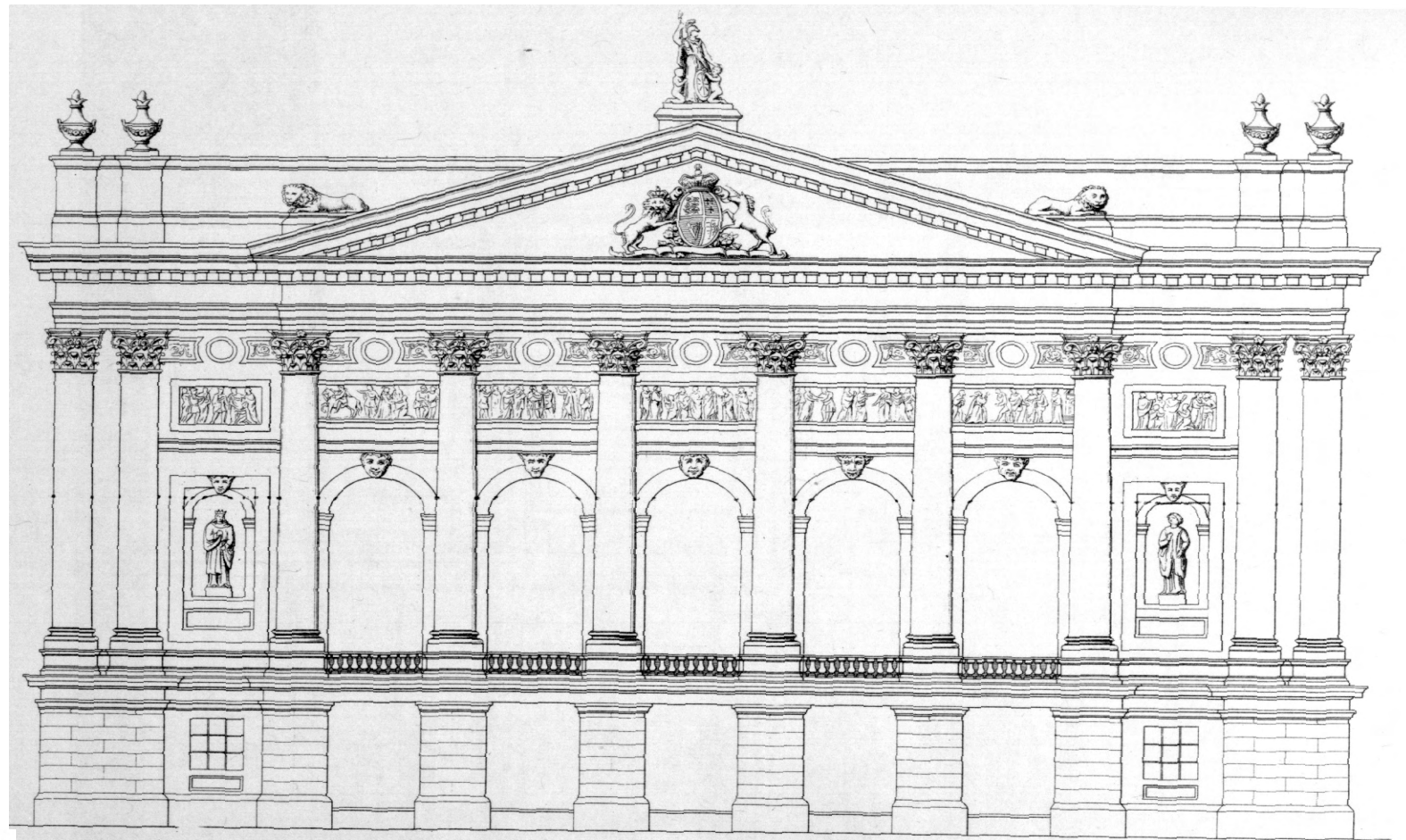
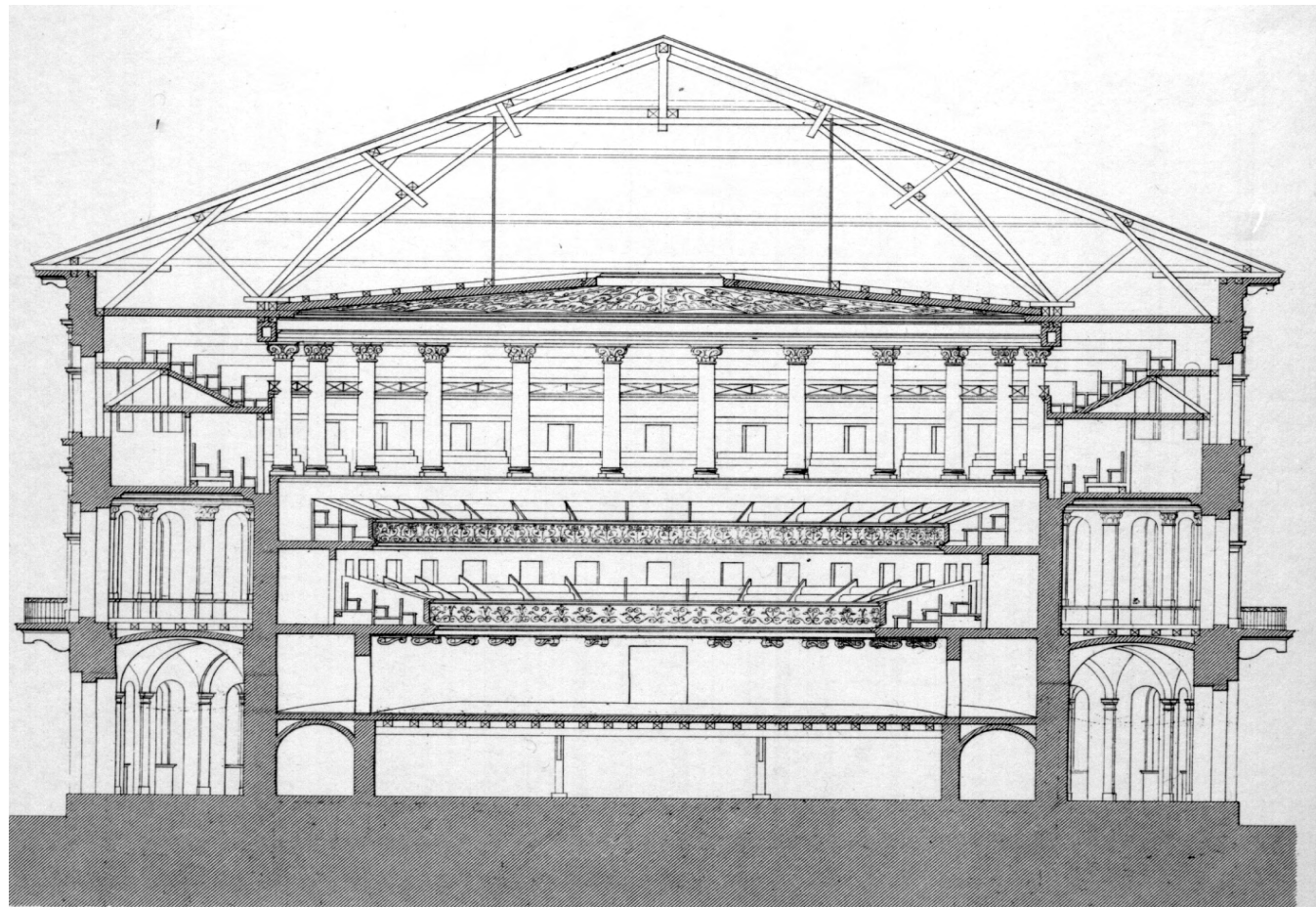
TYOLOGICAL PRECEDENTS



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TYOLOGICAL PRECEDENTS



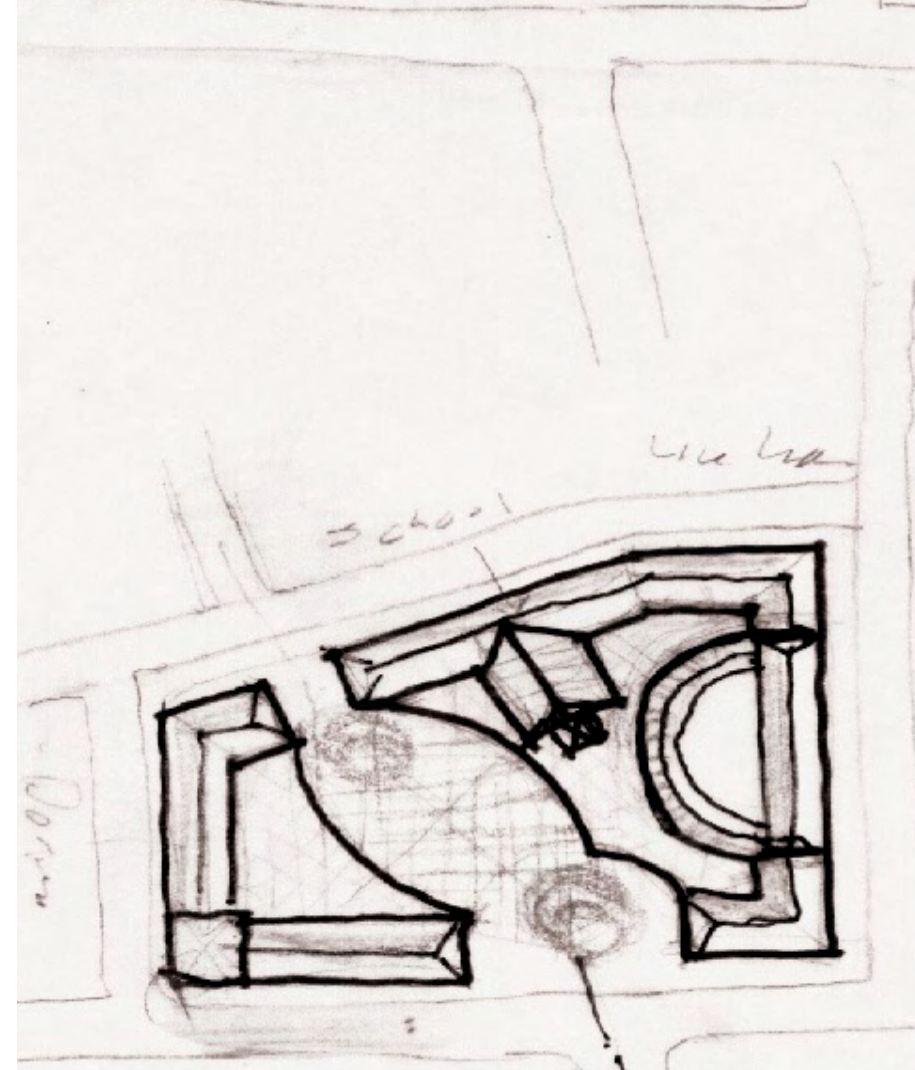
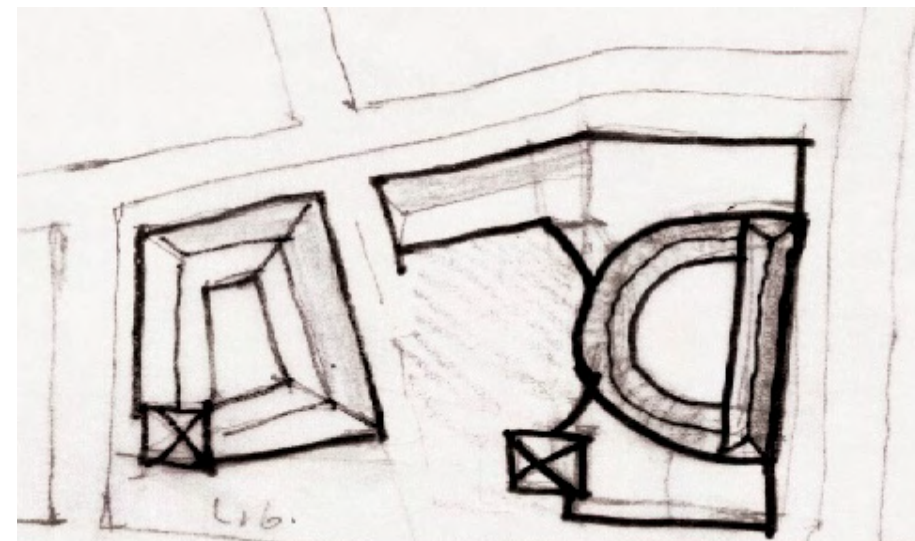
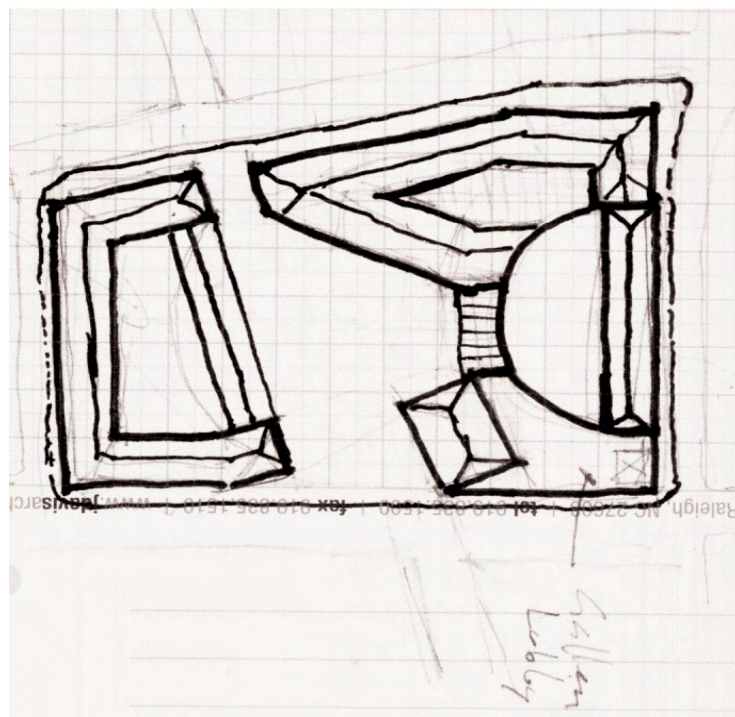
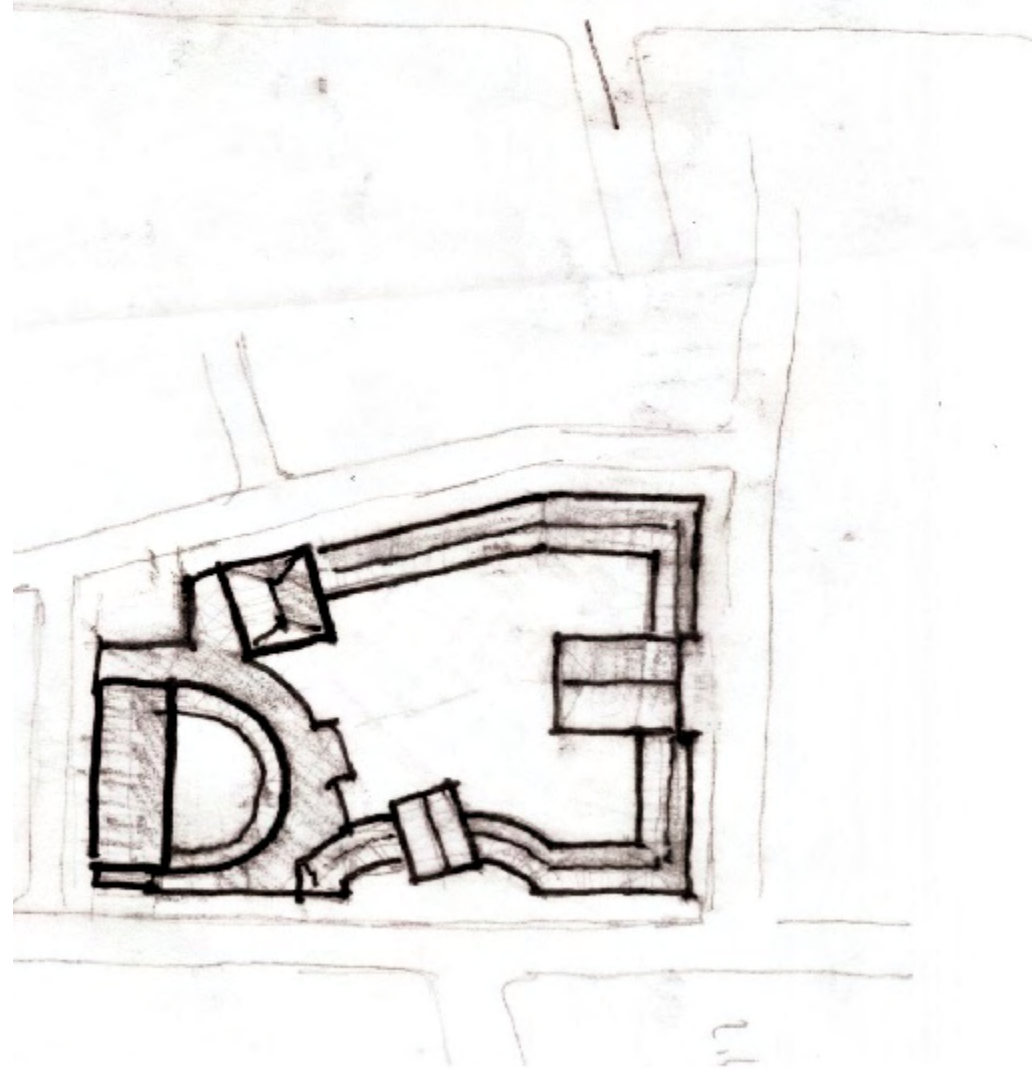
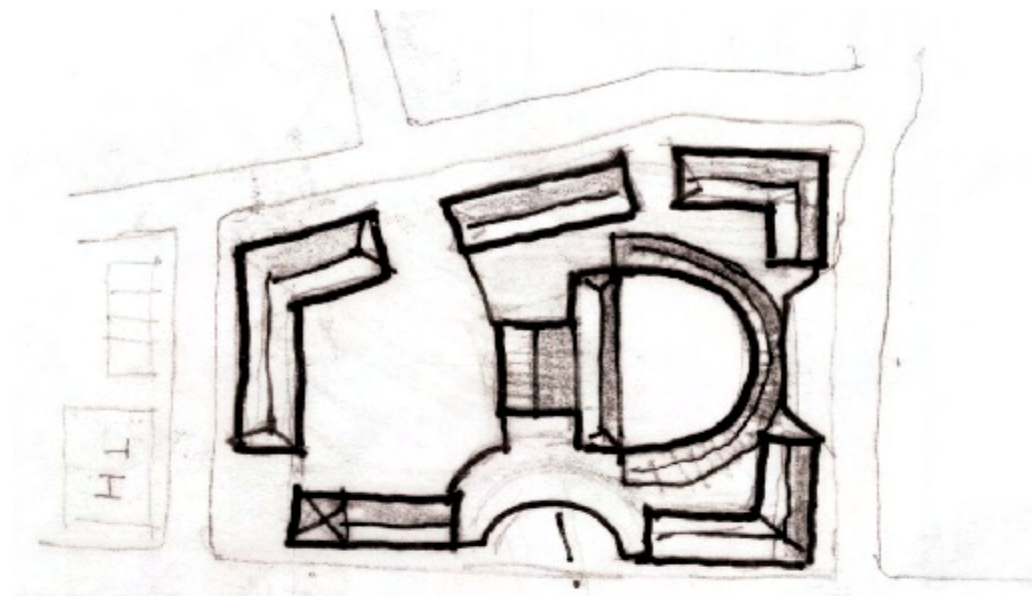
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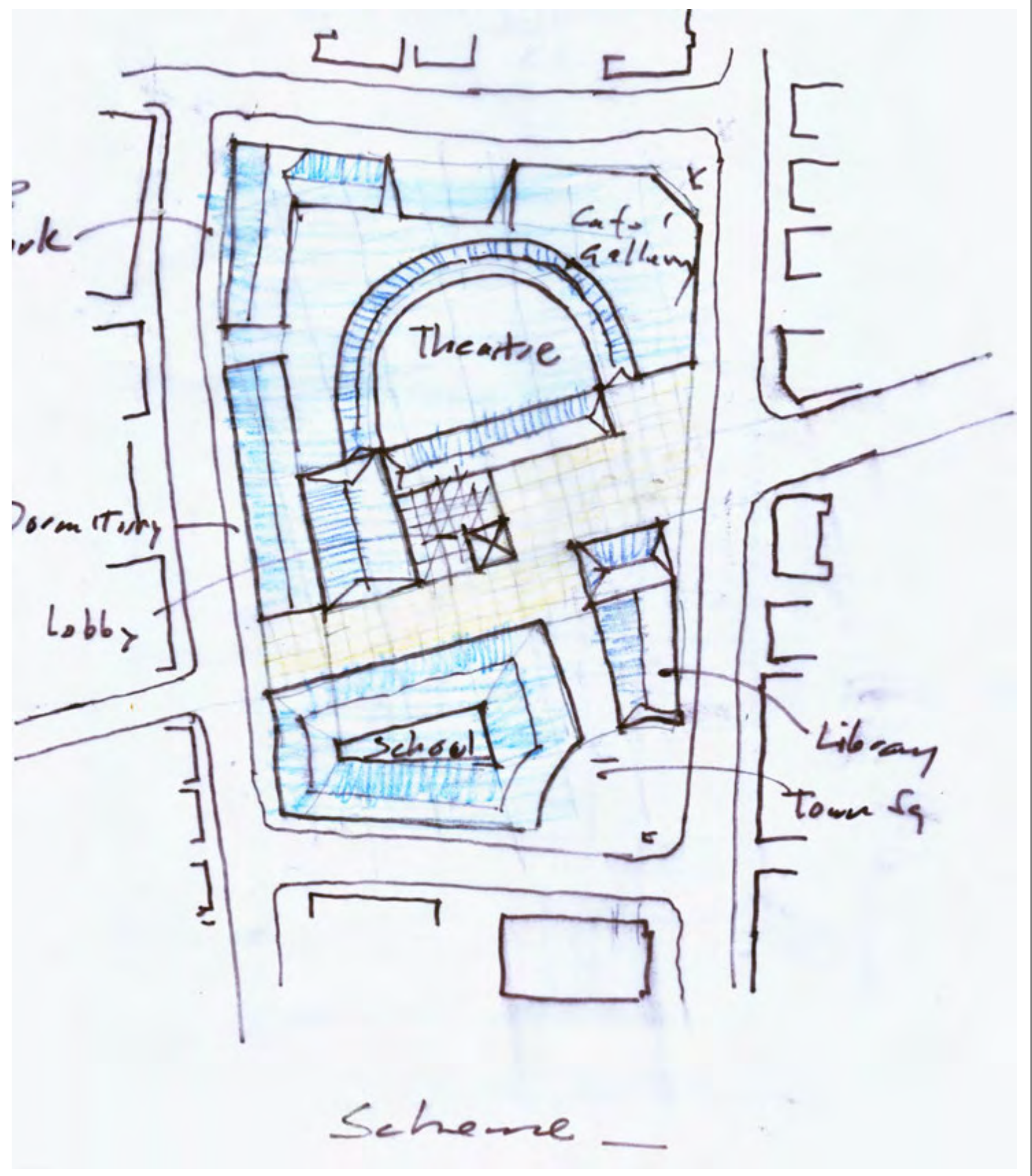
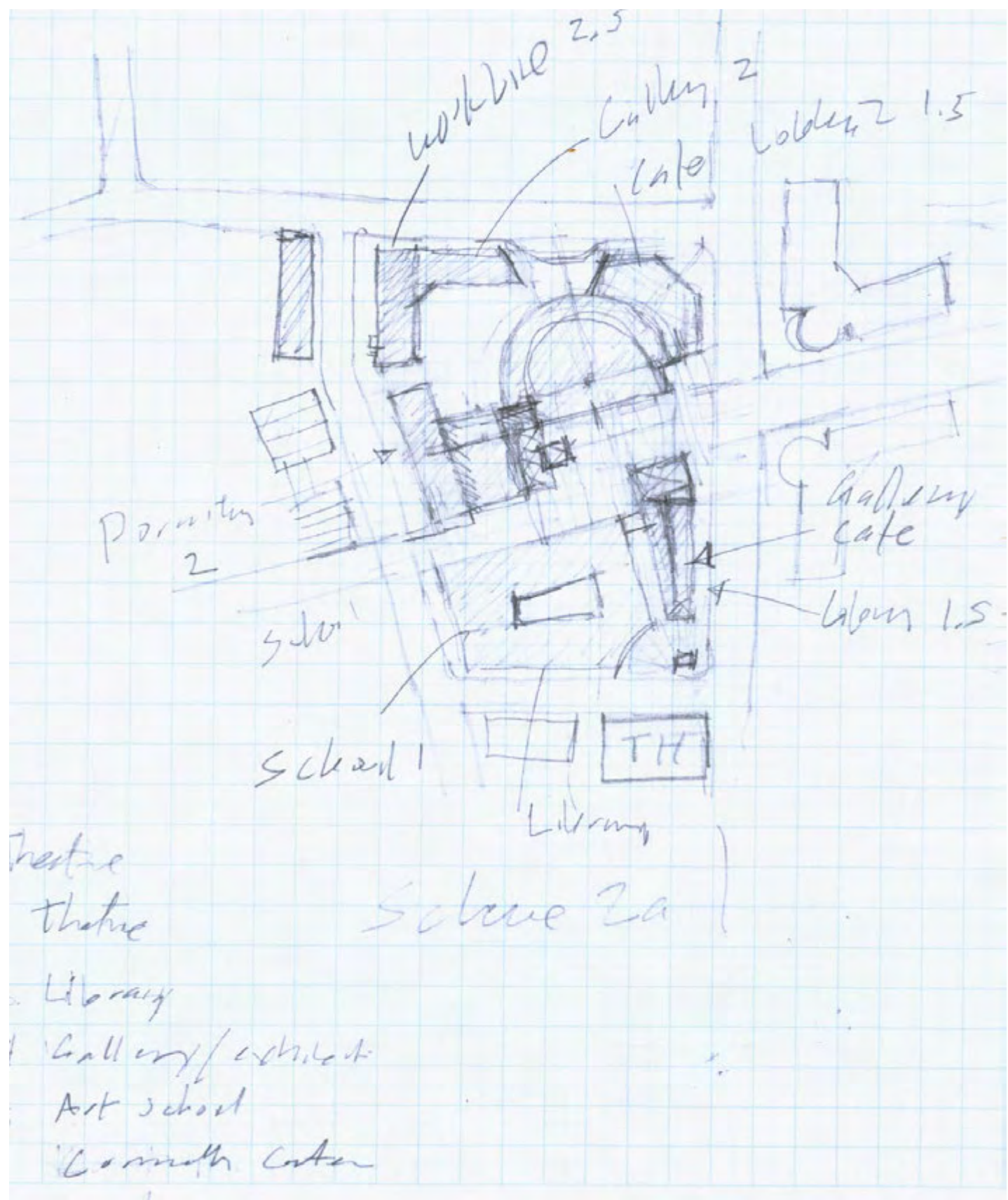
City of
Lochgelly
County Fife
ScotlandUK

DESIGN PROCESS

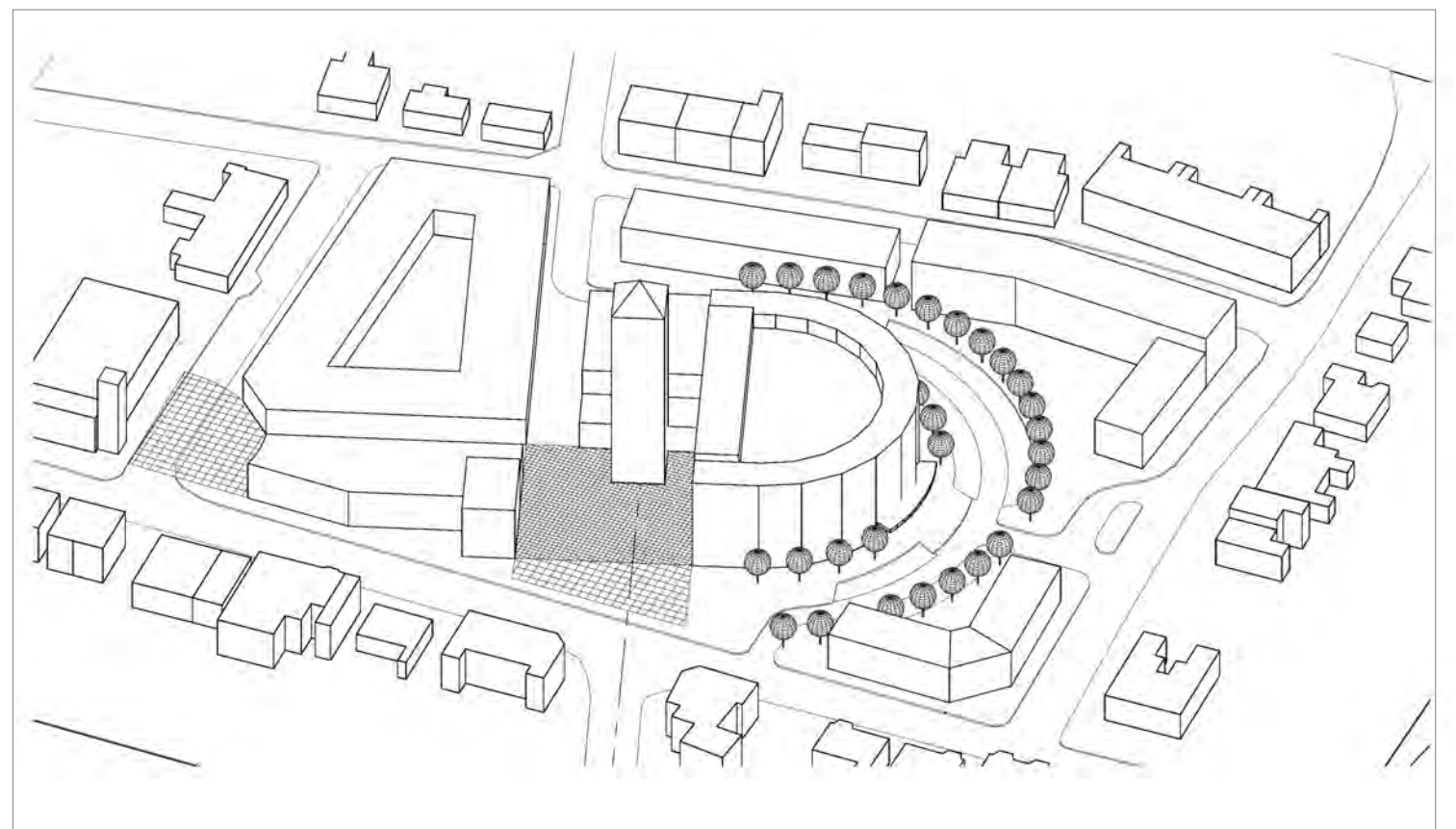
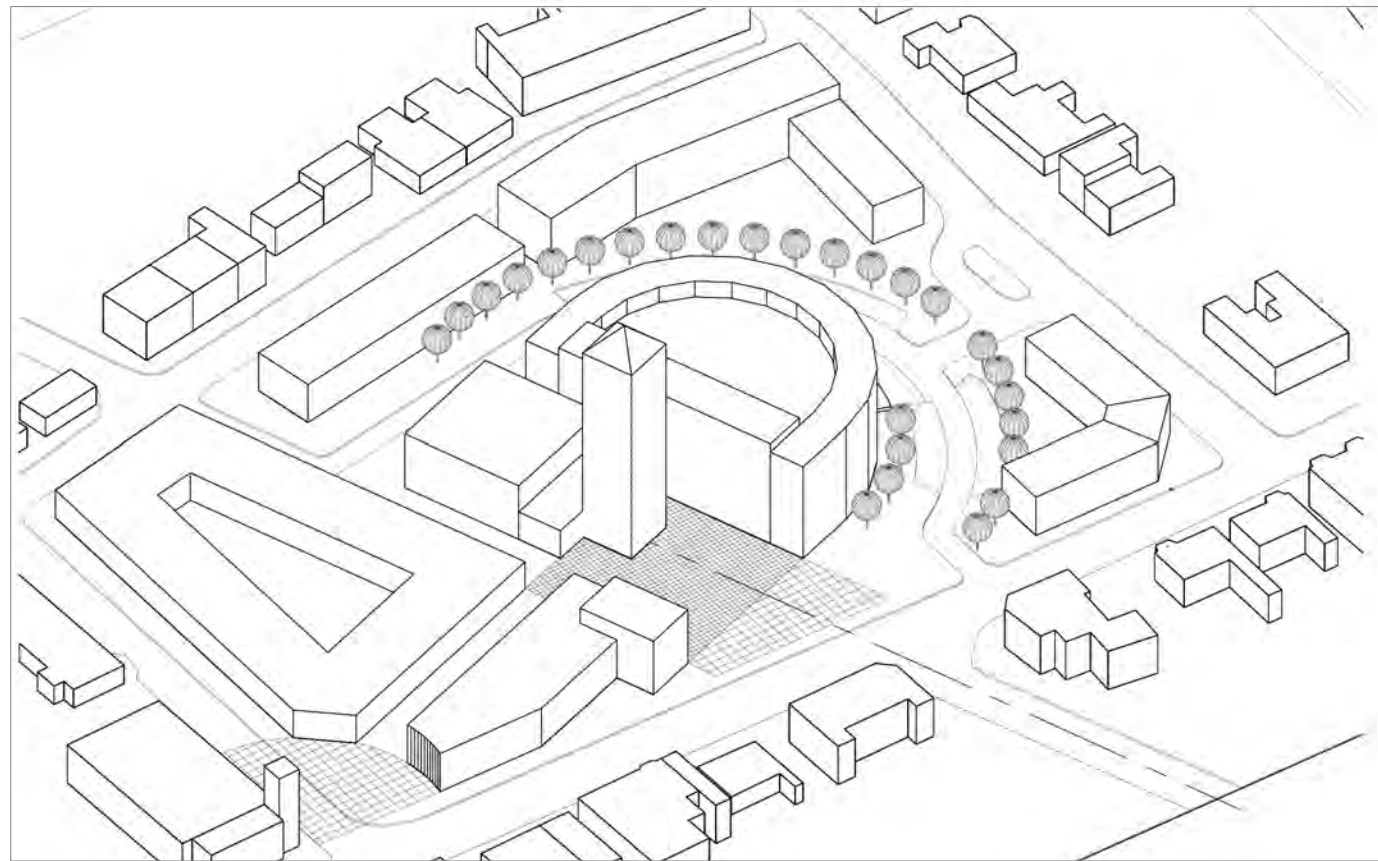
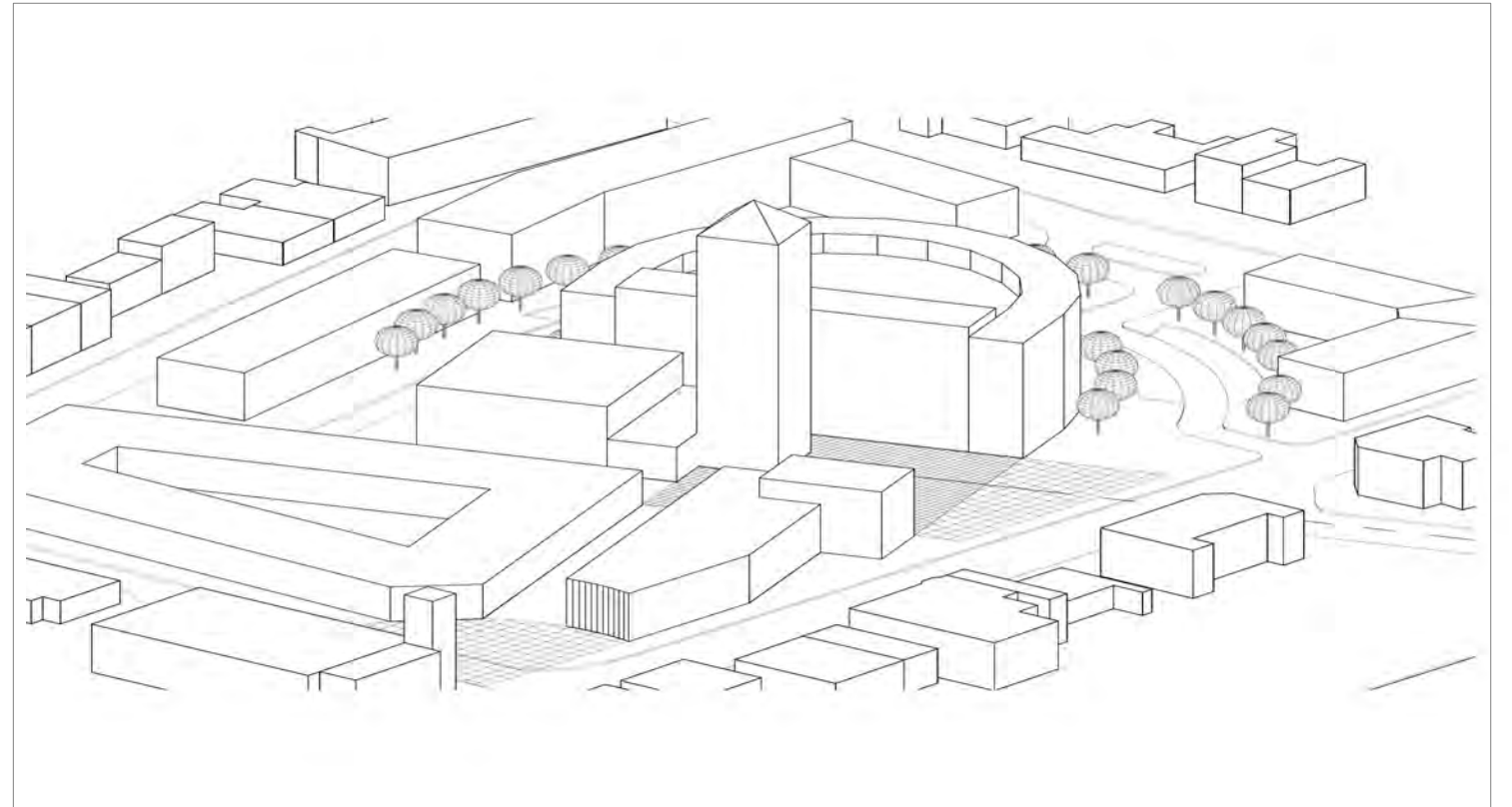
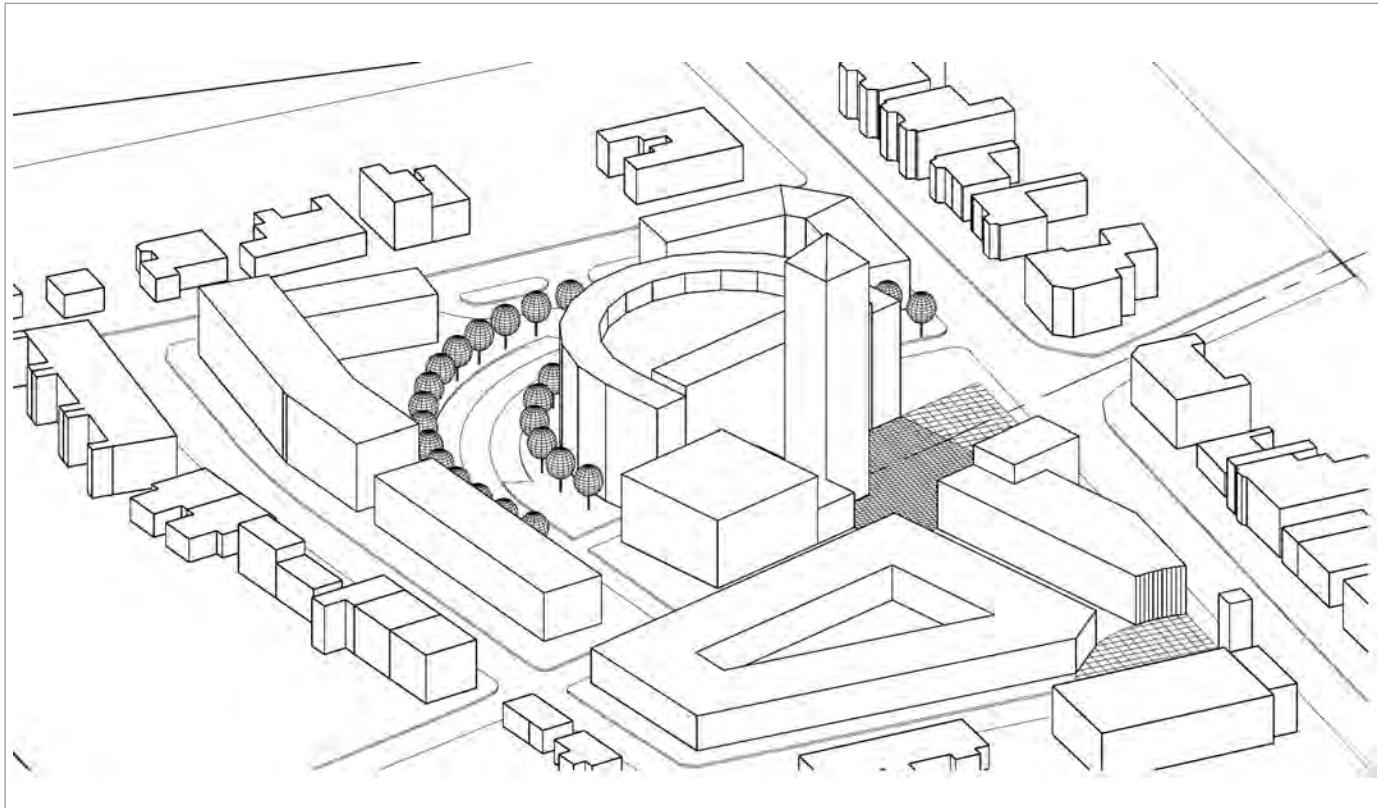
Lochgelly Centre



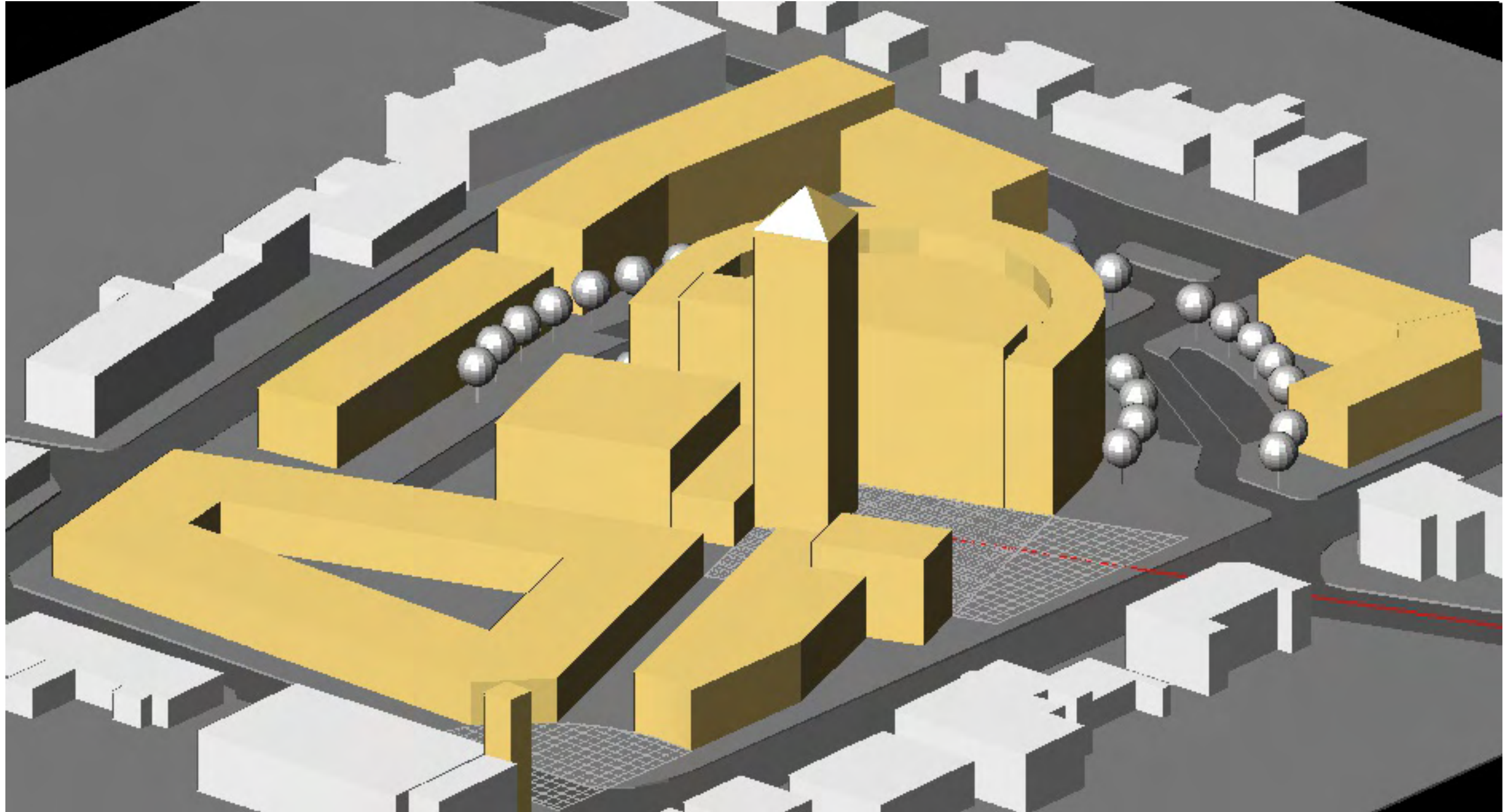
MASSING CONCEPTS 1-5



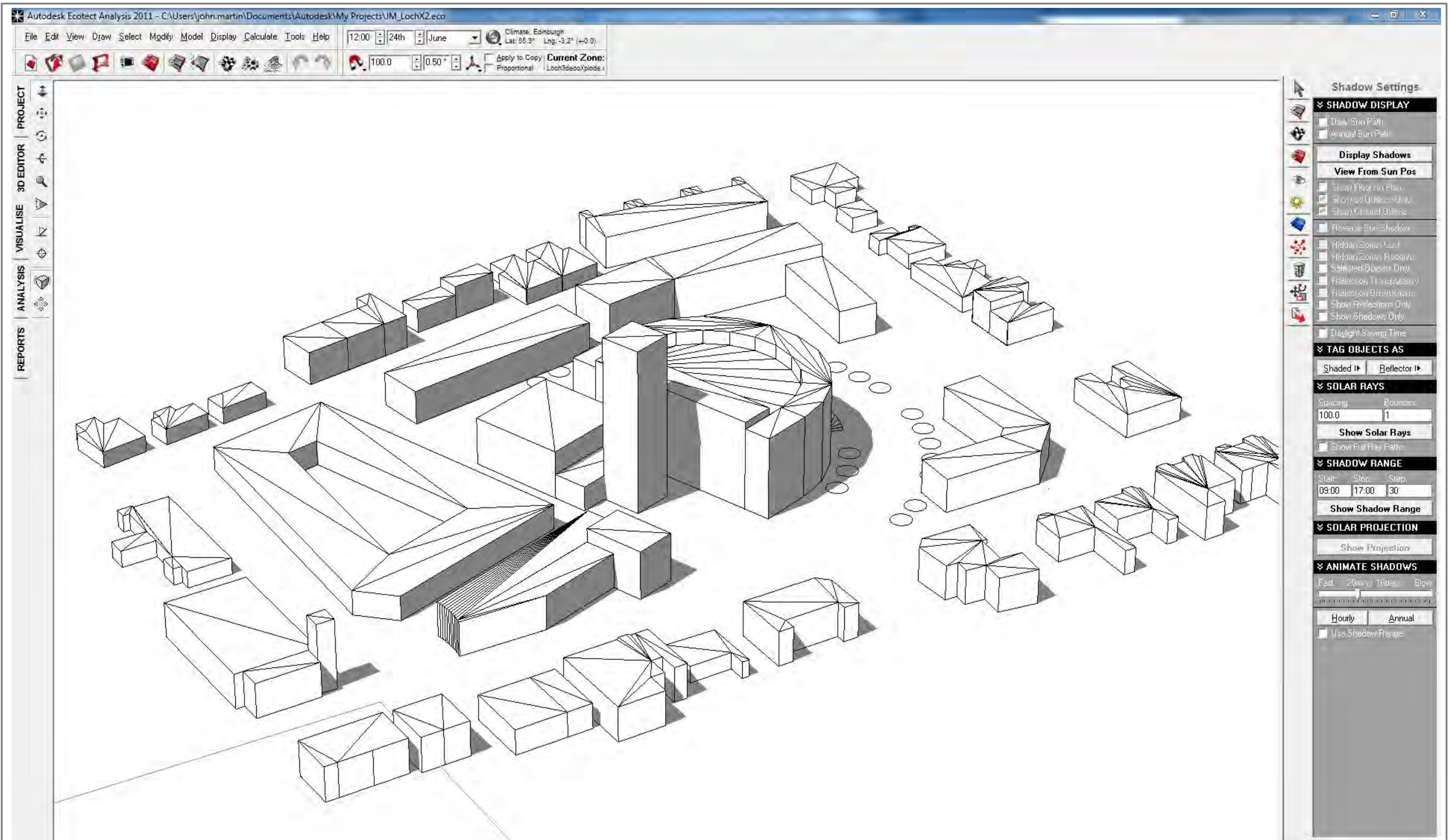
Final Massing Concept



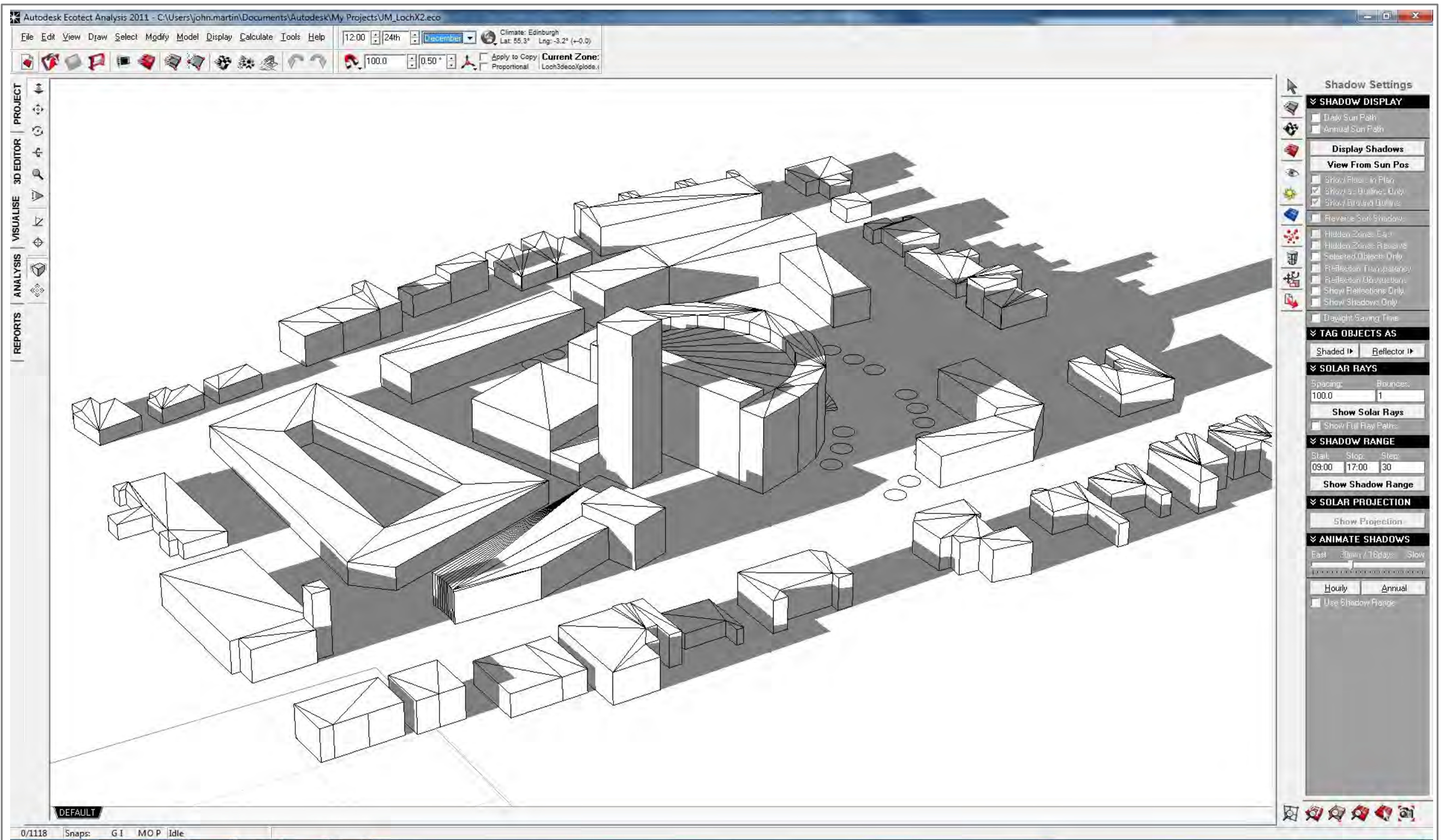
MASSING MODEL



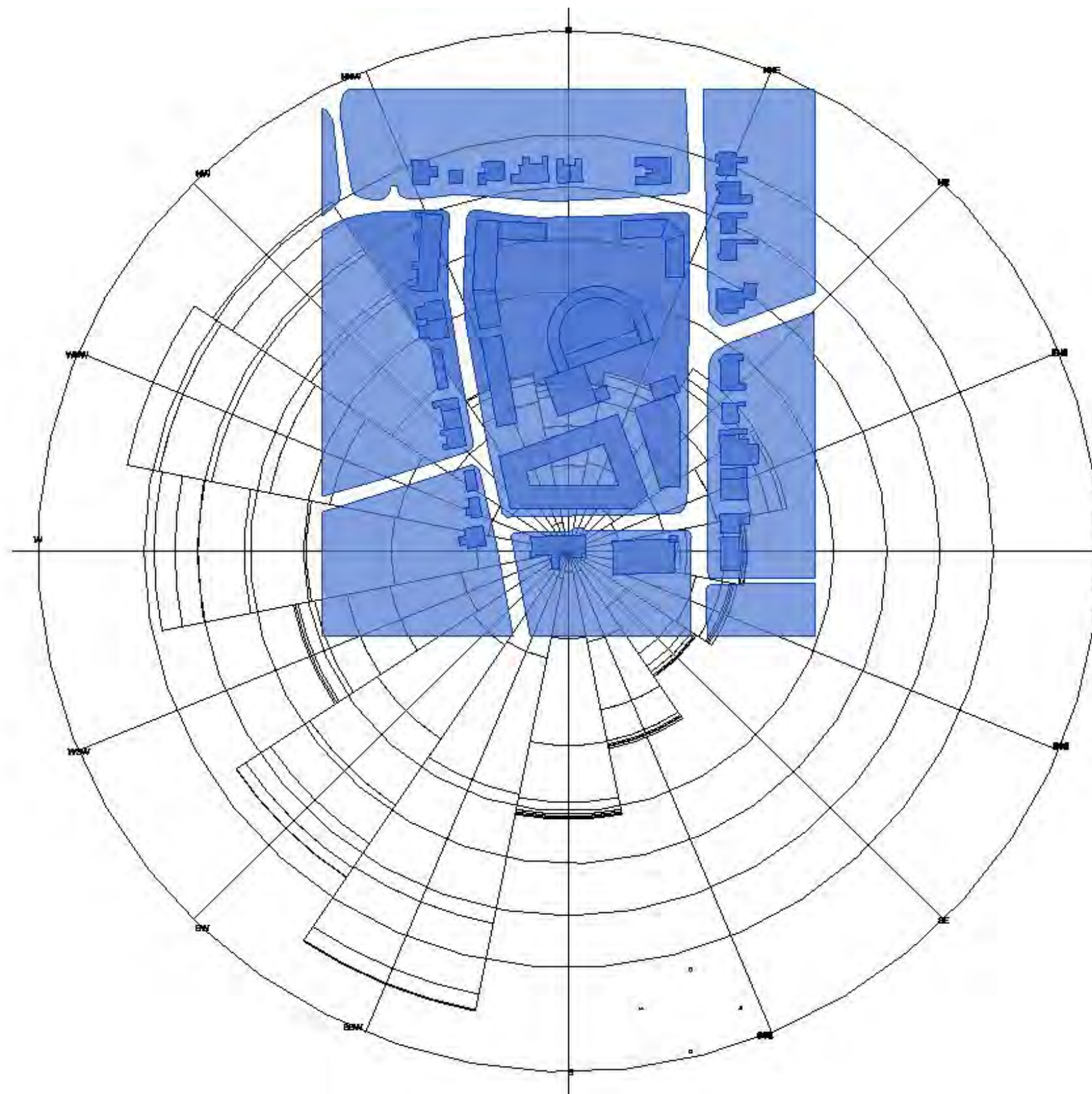
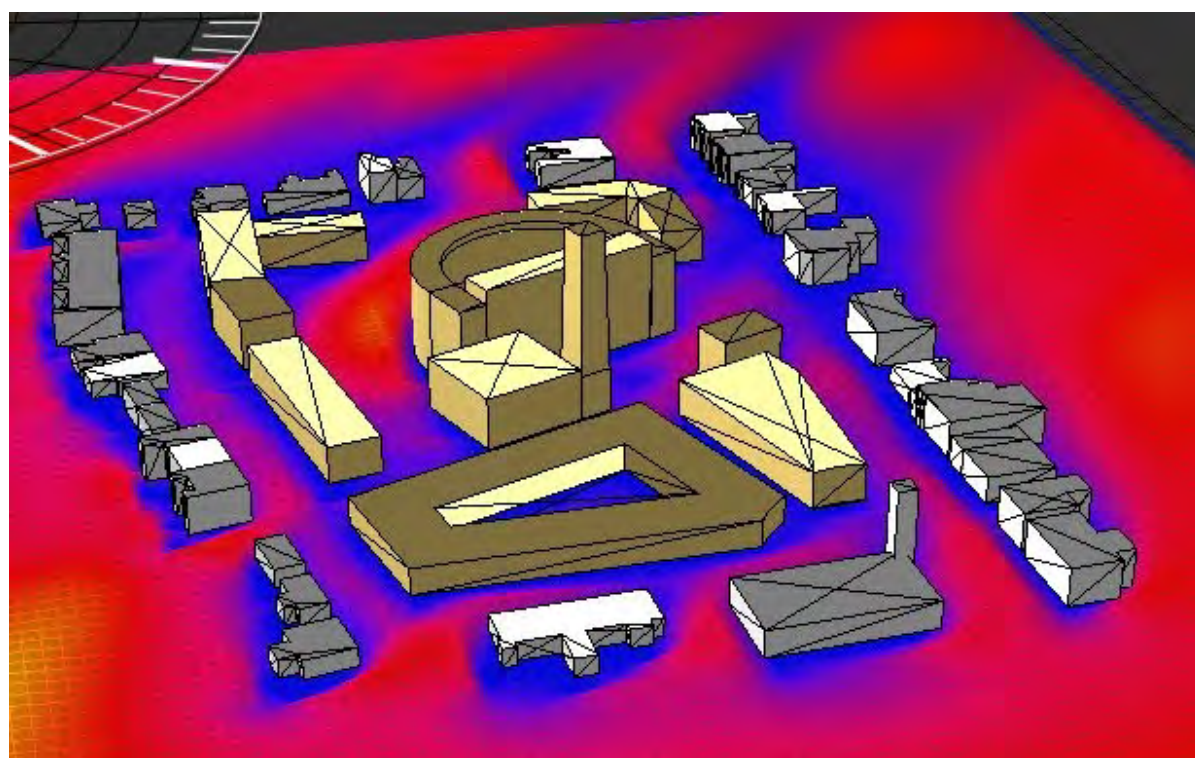
MASSING MODEL



Solar Study - Summer Solstice



Solar Study - Winter Solstice



Wind Direction and Thermal Analysis



View from
Auchterderran

FINAL CONCEPTUAL DESIGN



WEST ◊ ELEVATION

FINAL CONCEPTUAL DESIGN



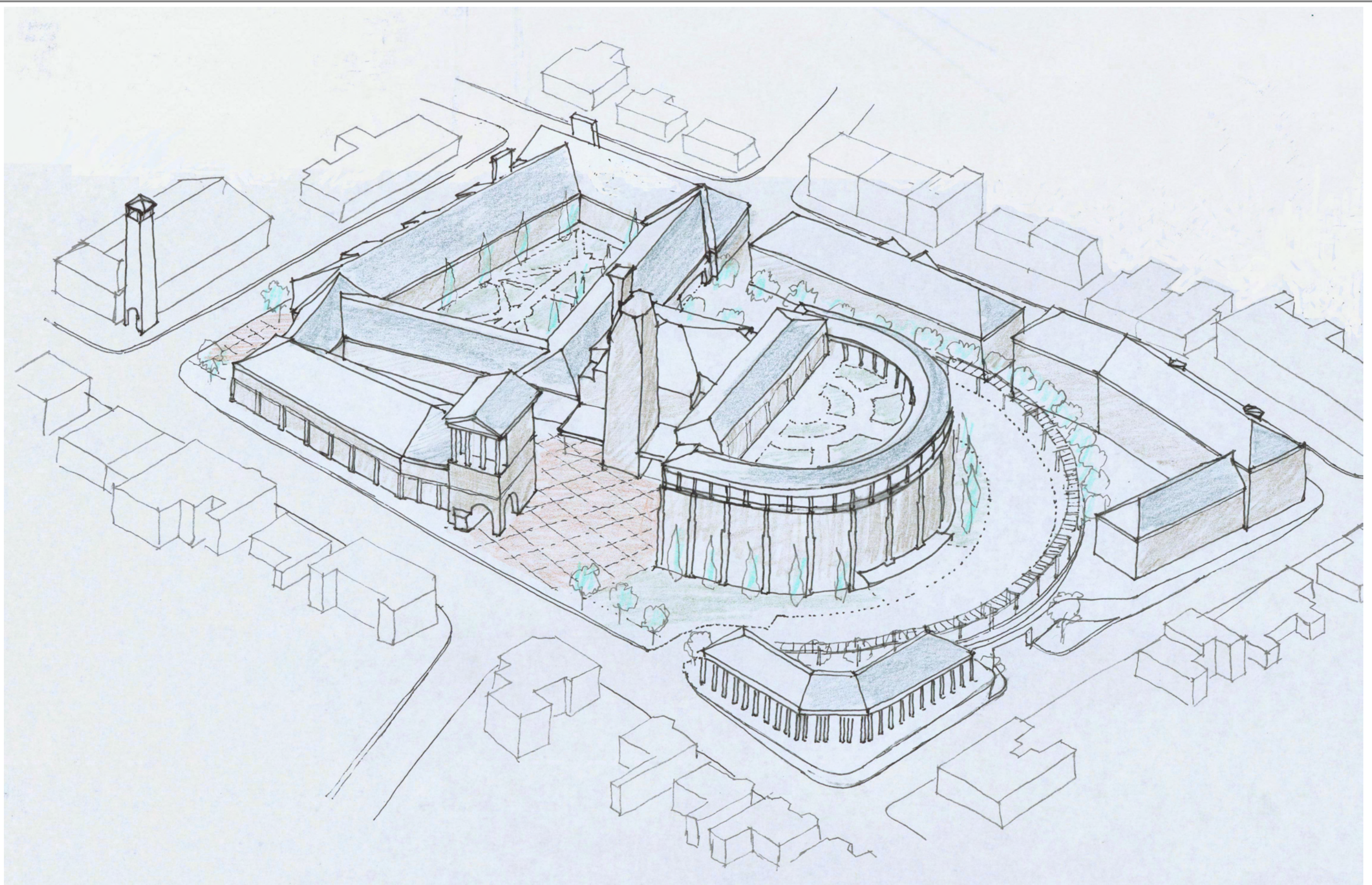
EAST ◊ ELEVATION

FINAL CONCEPTUAL DESIGN

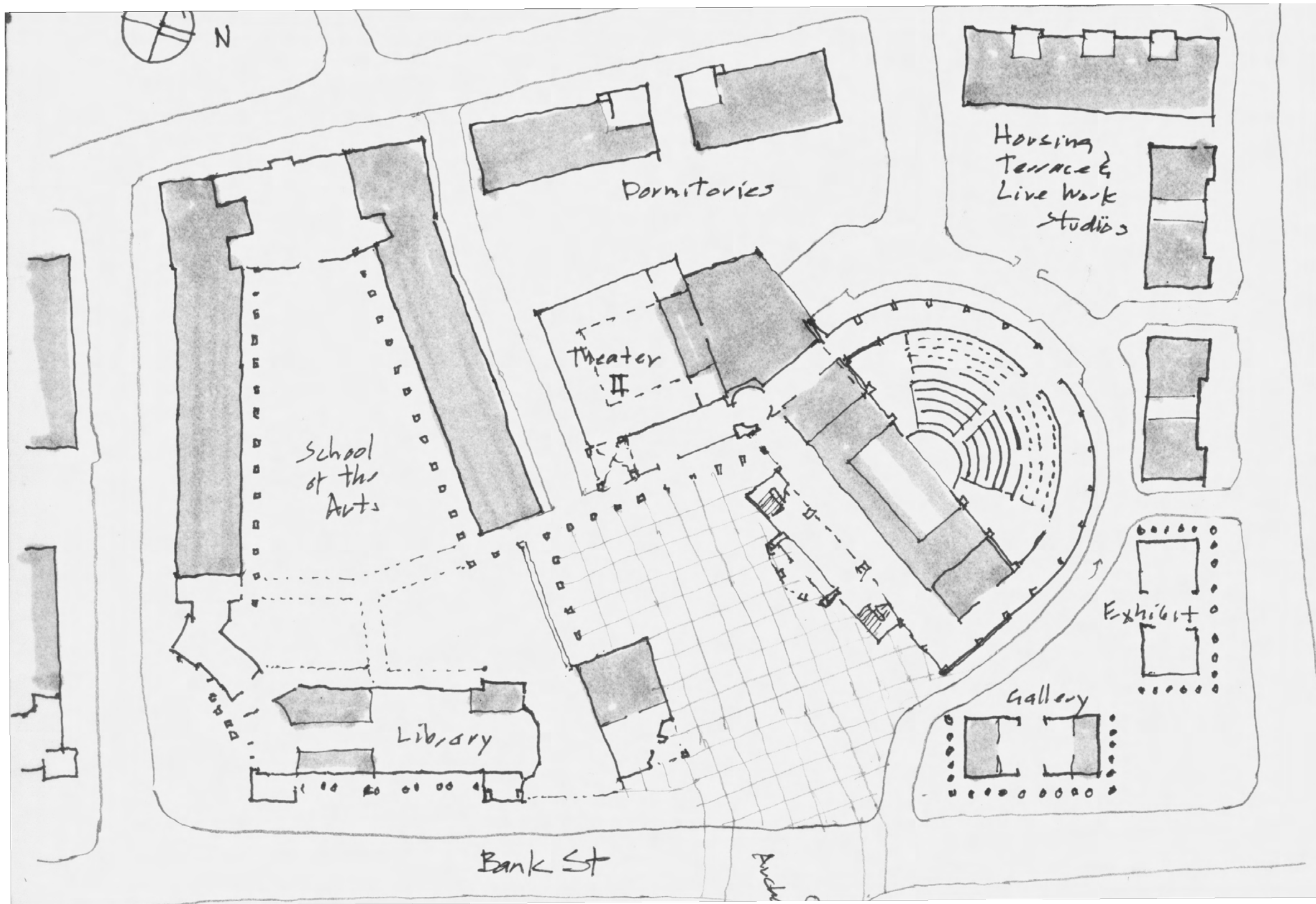


SOUTH ◊ ELEVATION

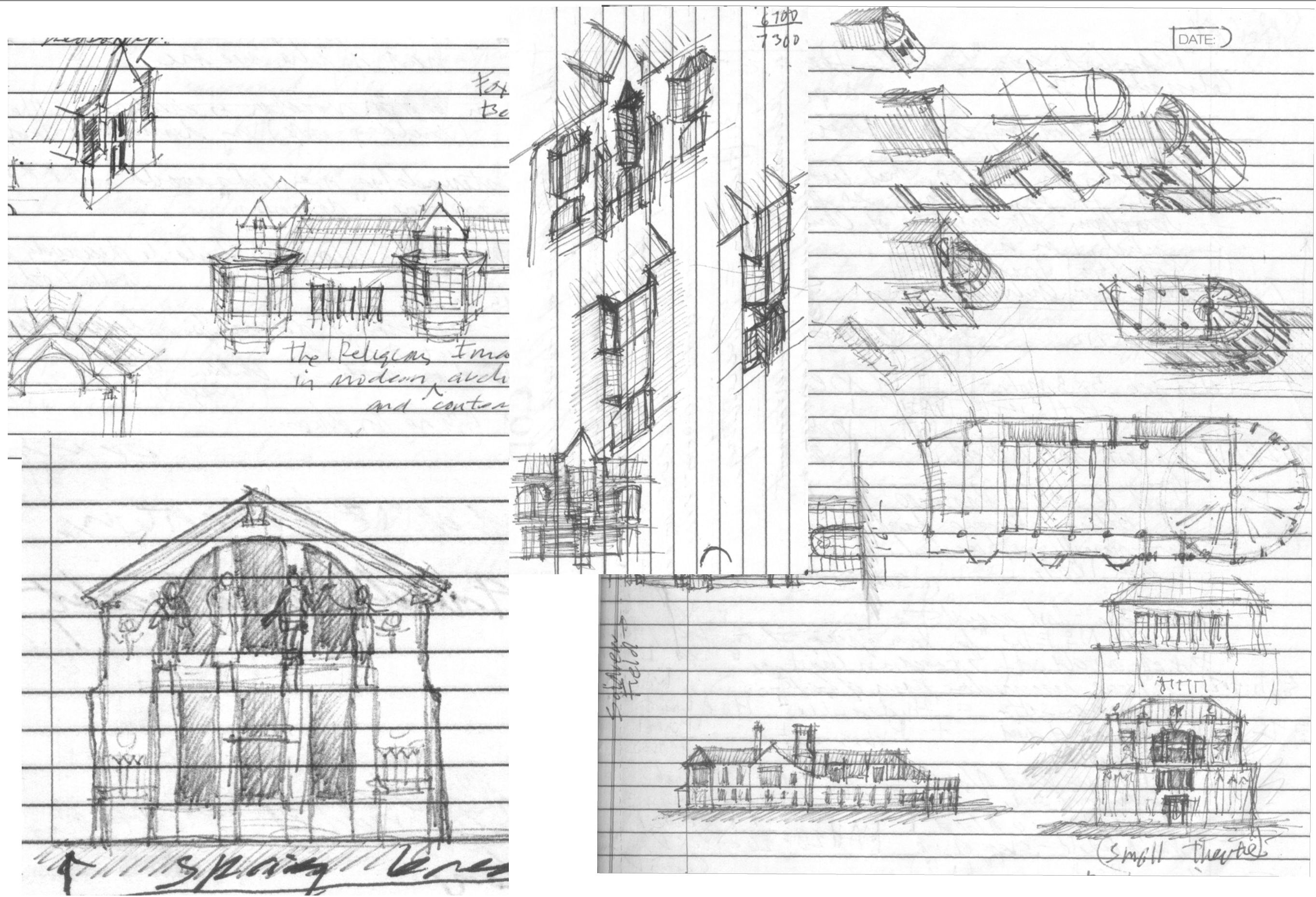
FINAL CONCEPTUAL DESIGN



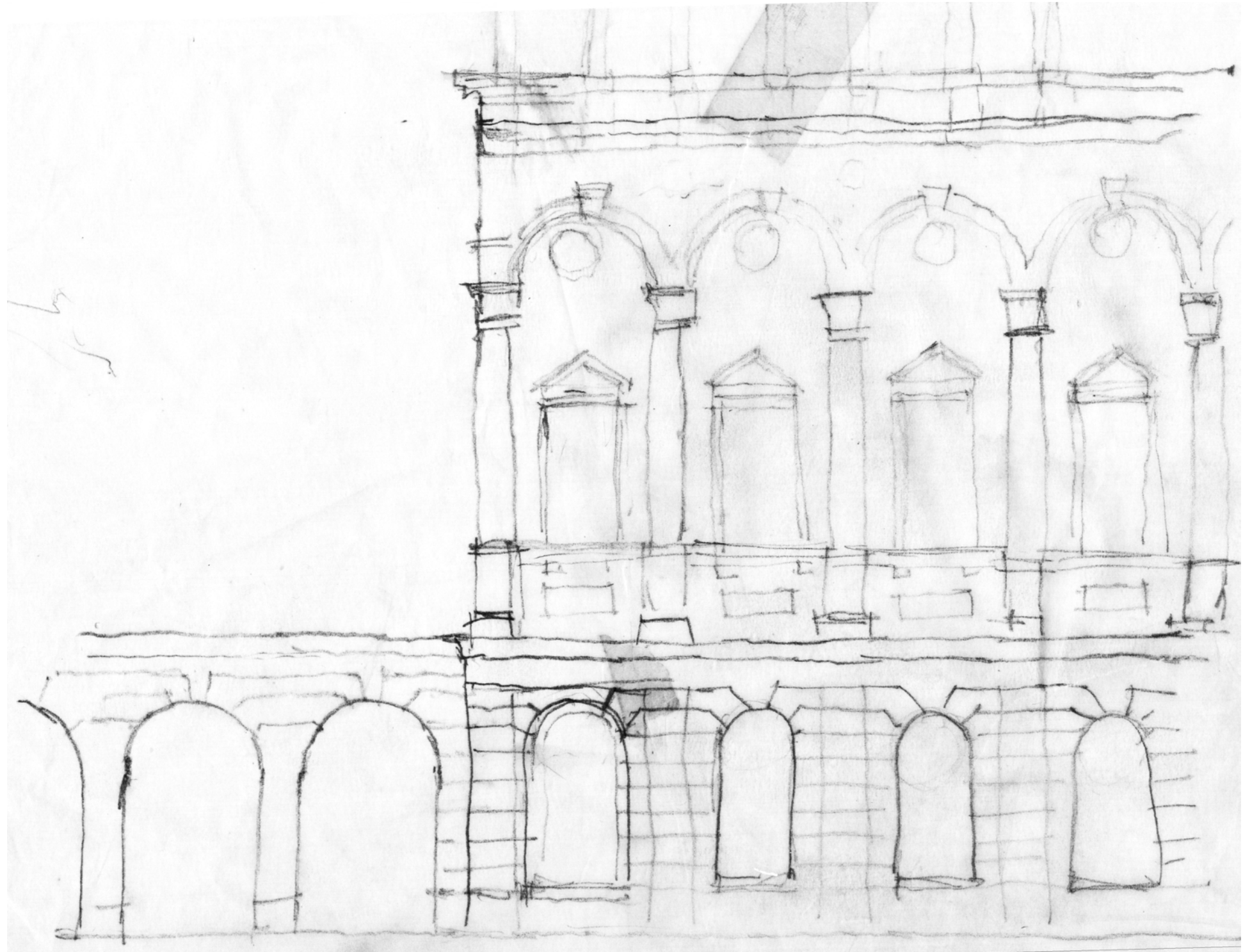
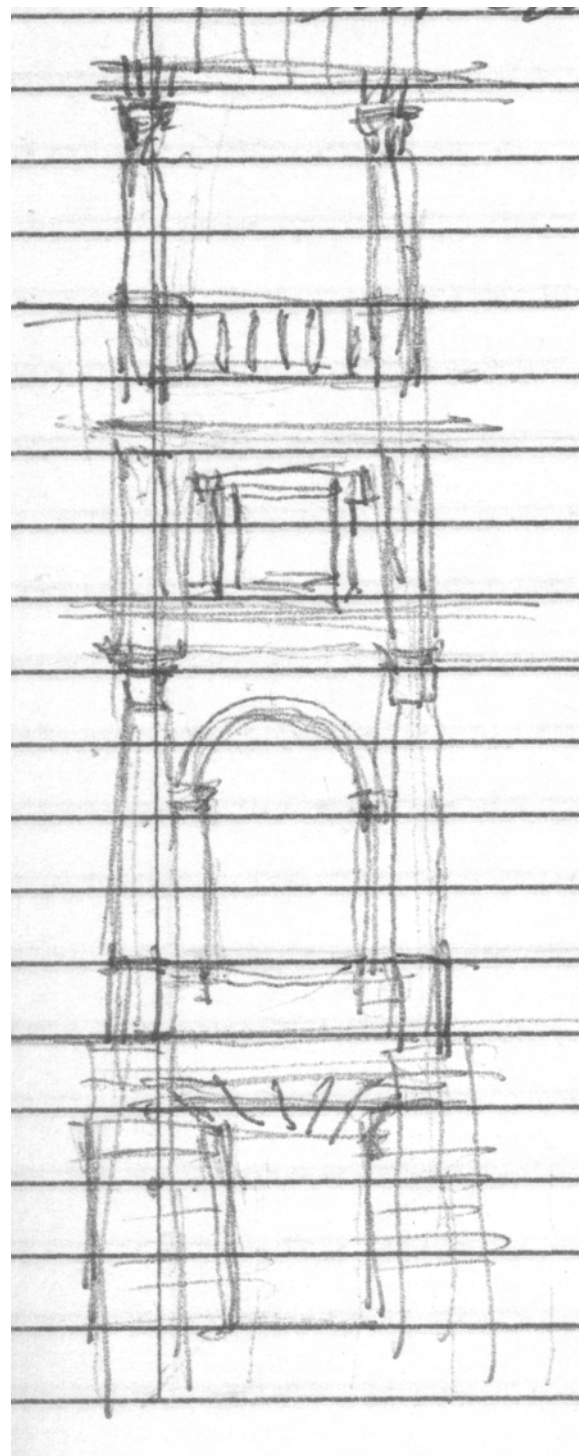
Final Conceptual Design



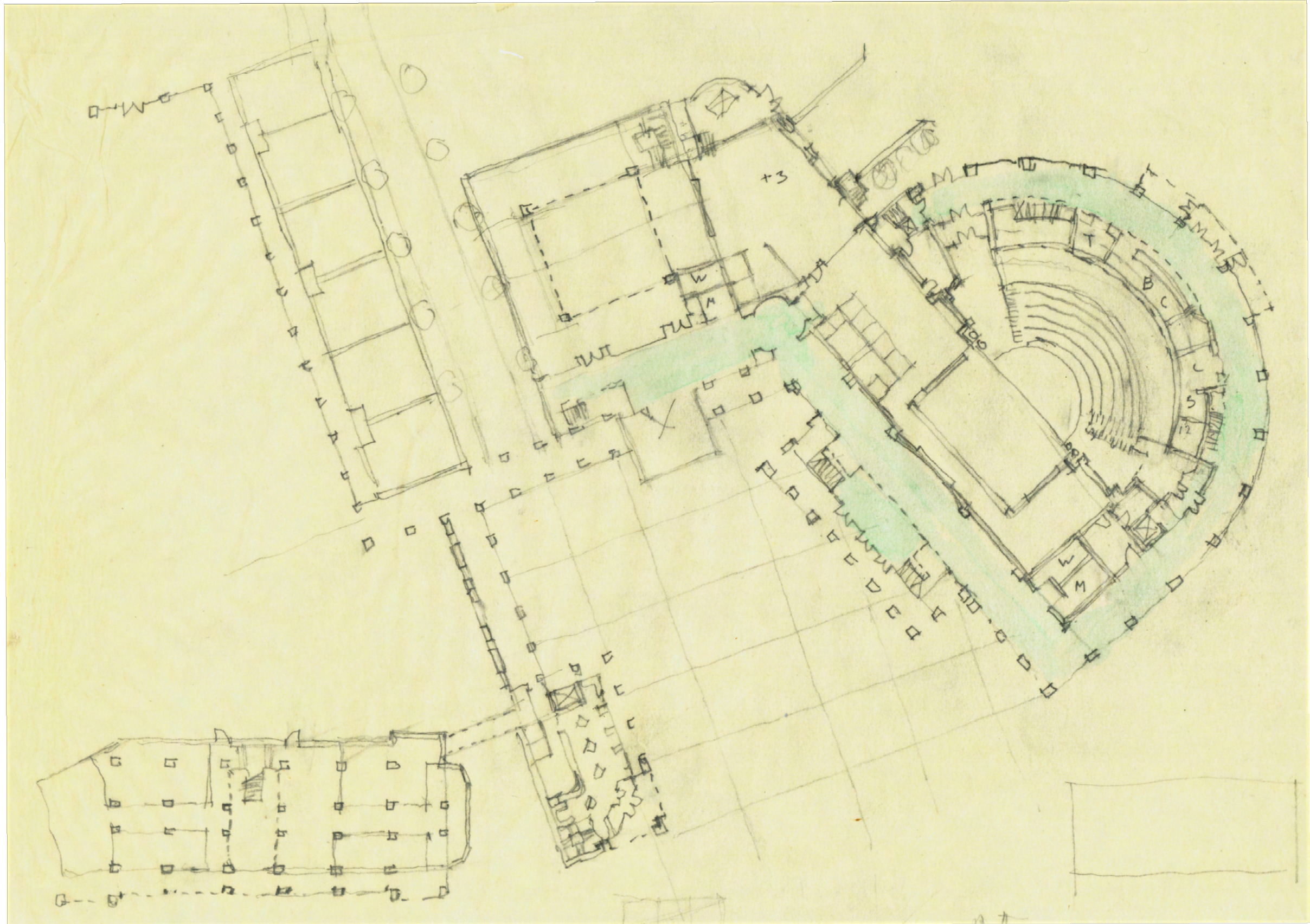
REVISED SITE PLAN – SCHEMATIC PHASE



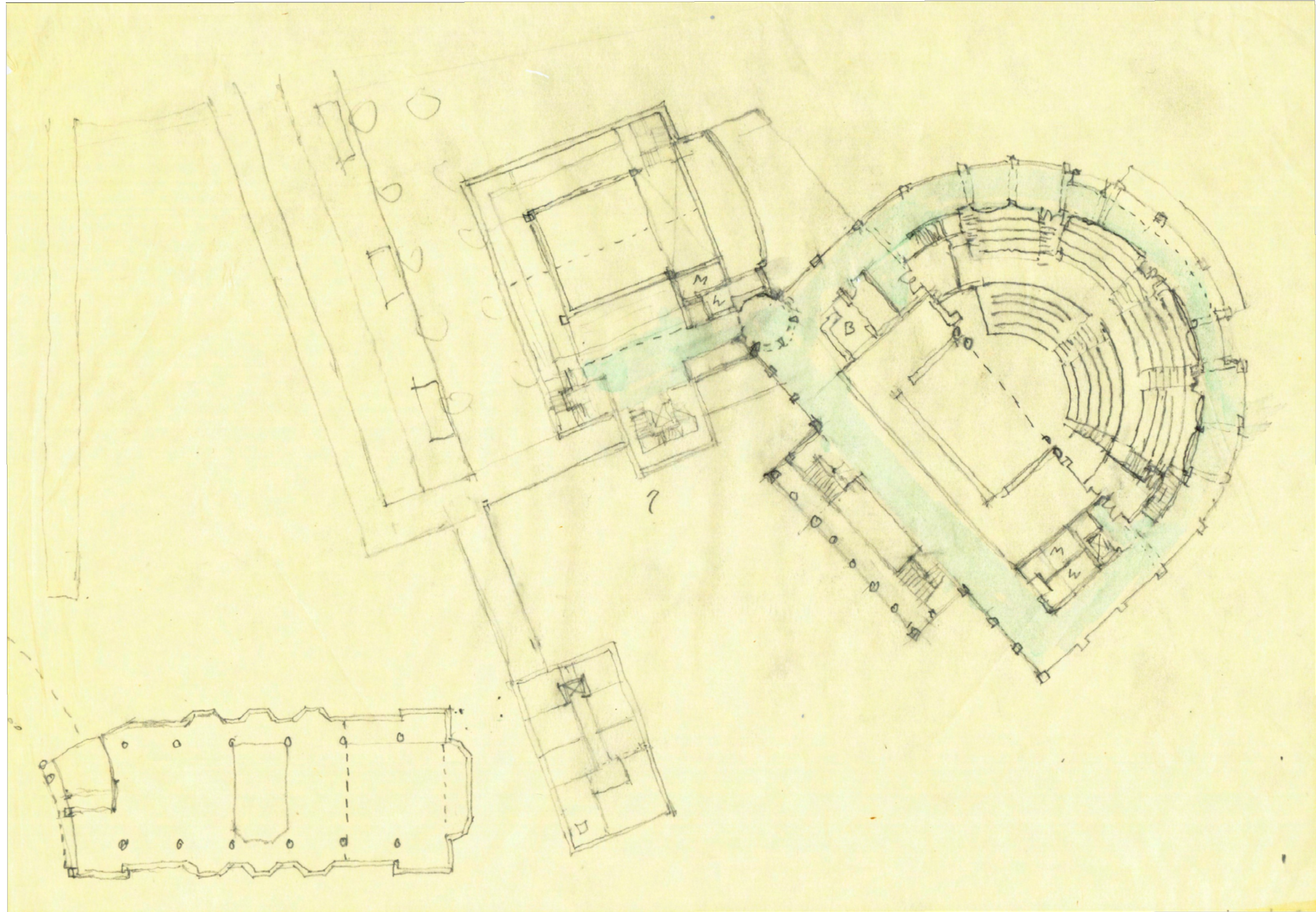
NOTEBOOK SKETCHES – SCHEMATIC PHASE



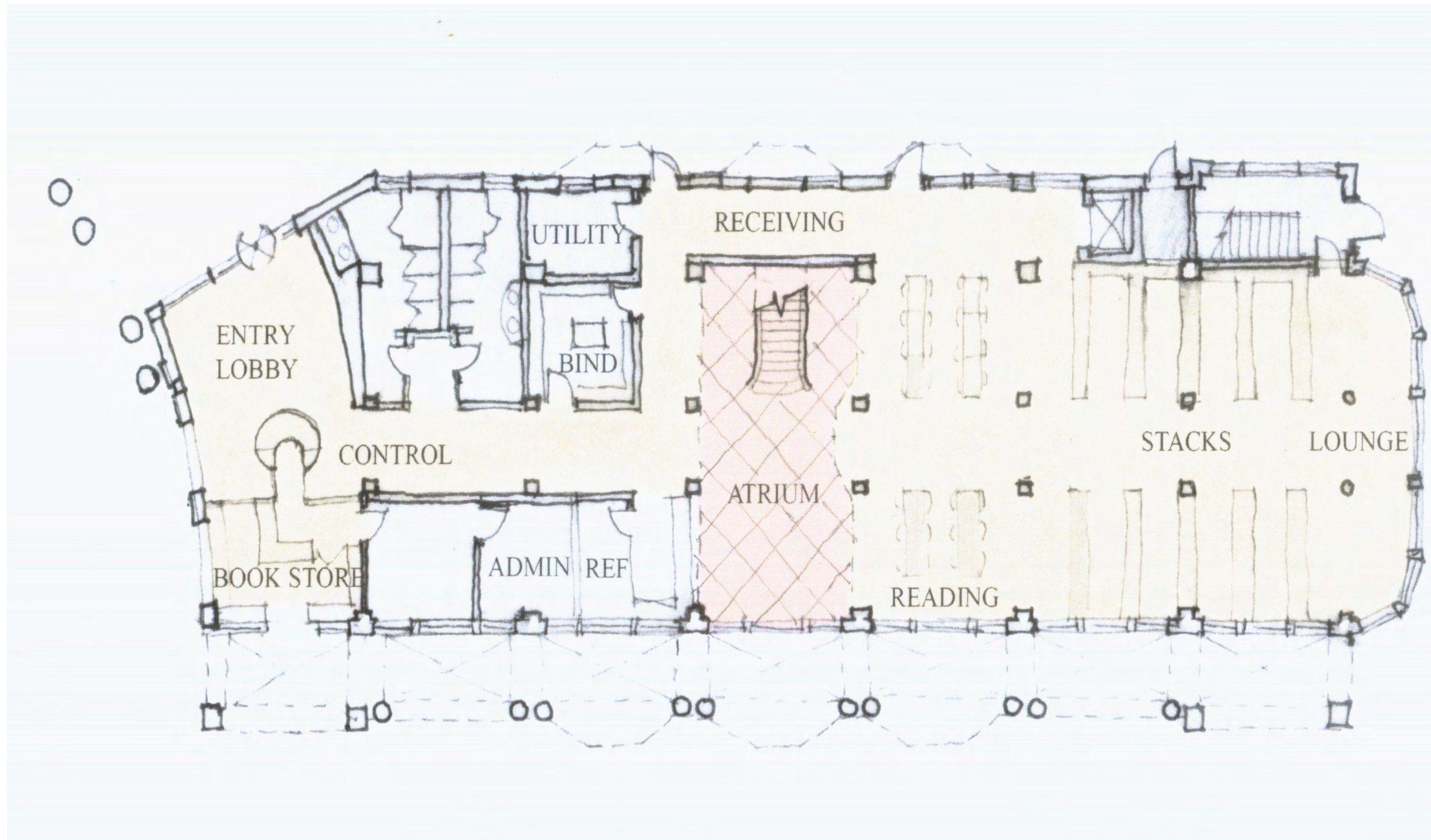
THEATER FACADE STUDY – SCHEMATIC PHASE



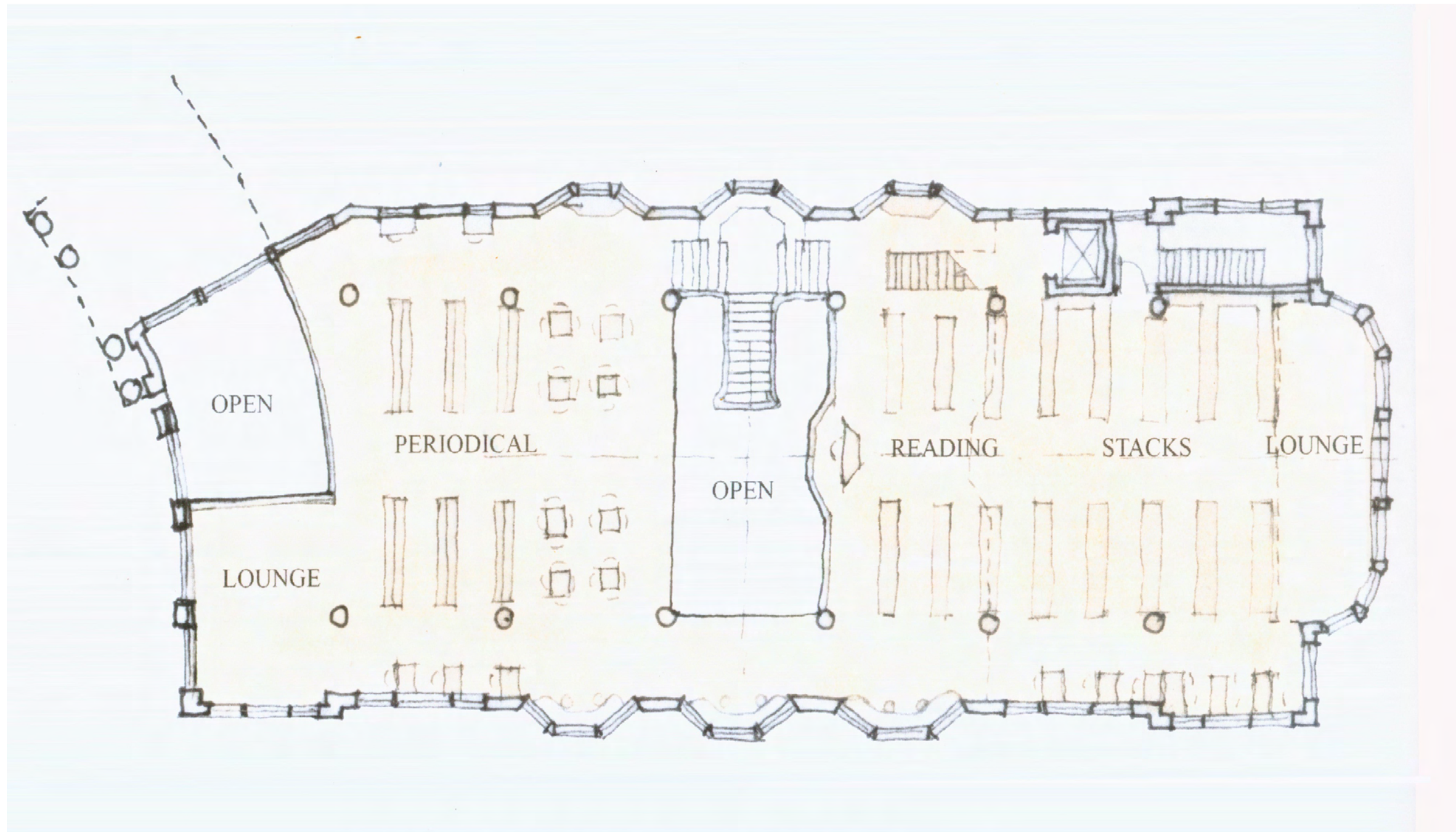
GROUND FLOOR PLAN – SCHEMATIC PHASE



FIRST FLOOR PLAN – SCHEMATIC PLAN



GROUND FLOOR LIBRARY – SCHEMATIC PHASE



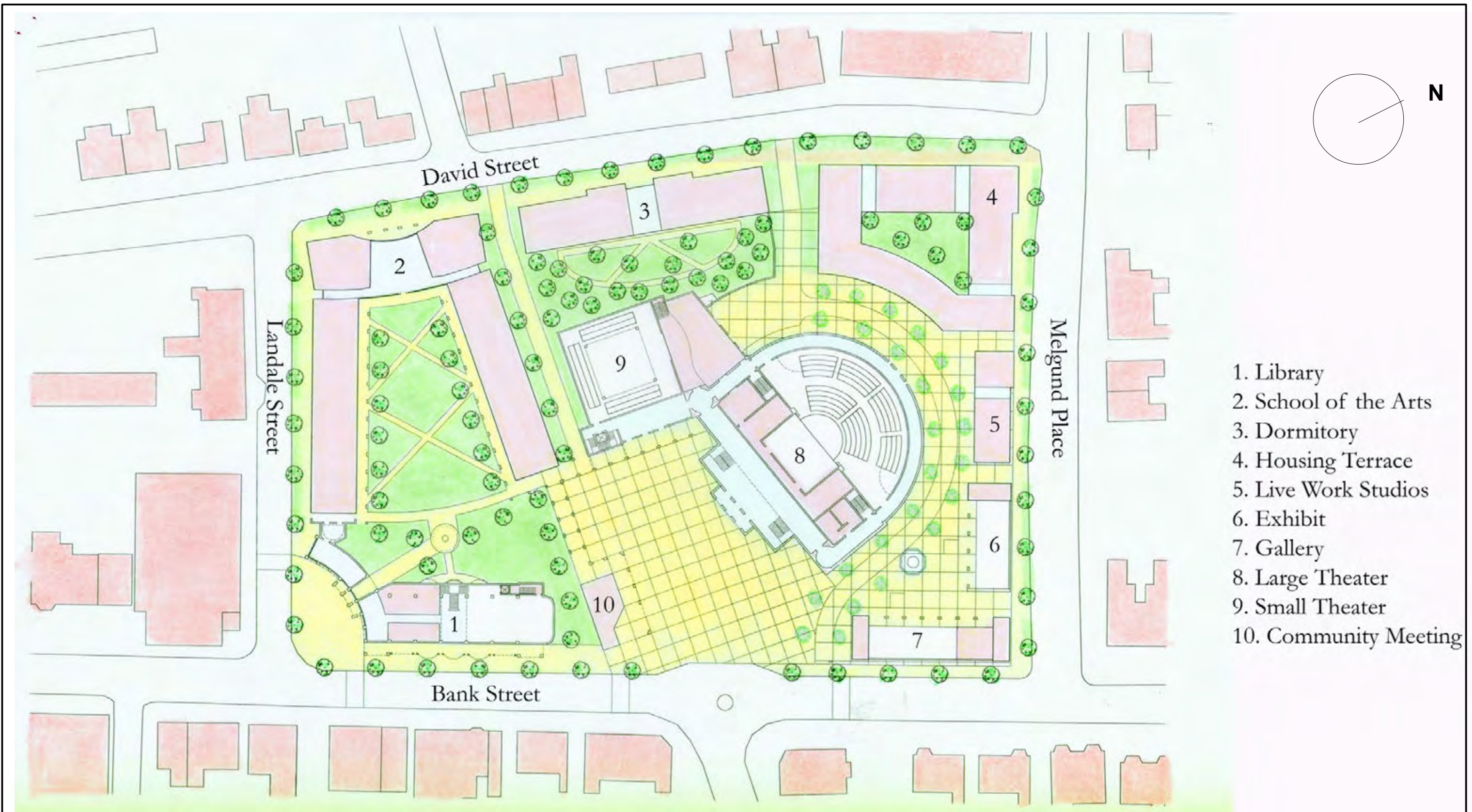
FIRST FLOOR LIBRARY – SCHEMATIC PHASE



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County Fife
ScotlandUK

FINAL DESIGN

Lochgelly Centre



1. Library
2. School of the Arts
3. Dormitory
4. Housing Terrace
5. Live Work Studios
6. Exhibit
7. Gallery
8. Large Theater
9. Small Theater
10. Community Meeting

Final Site Plan



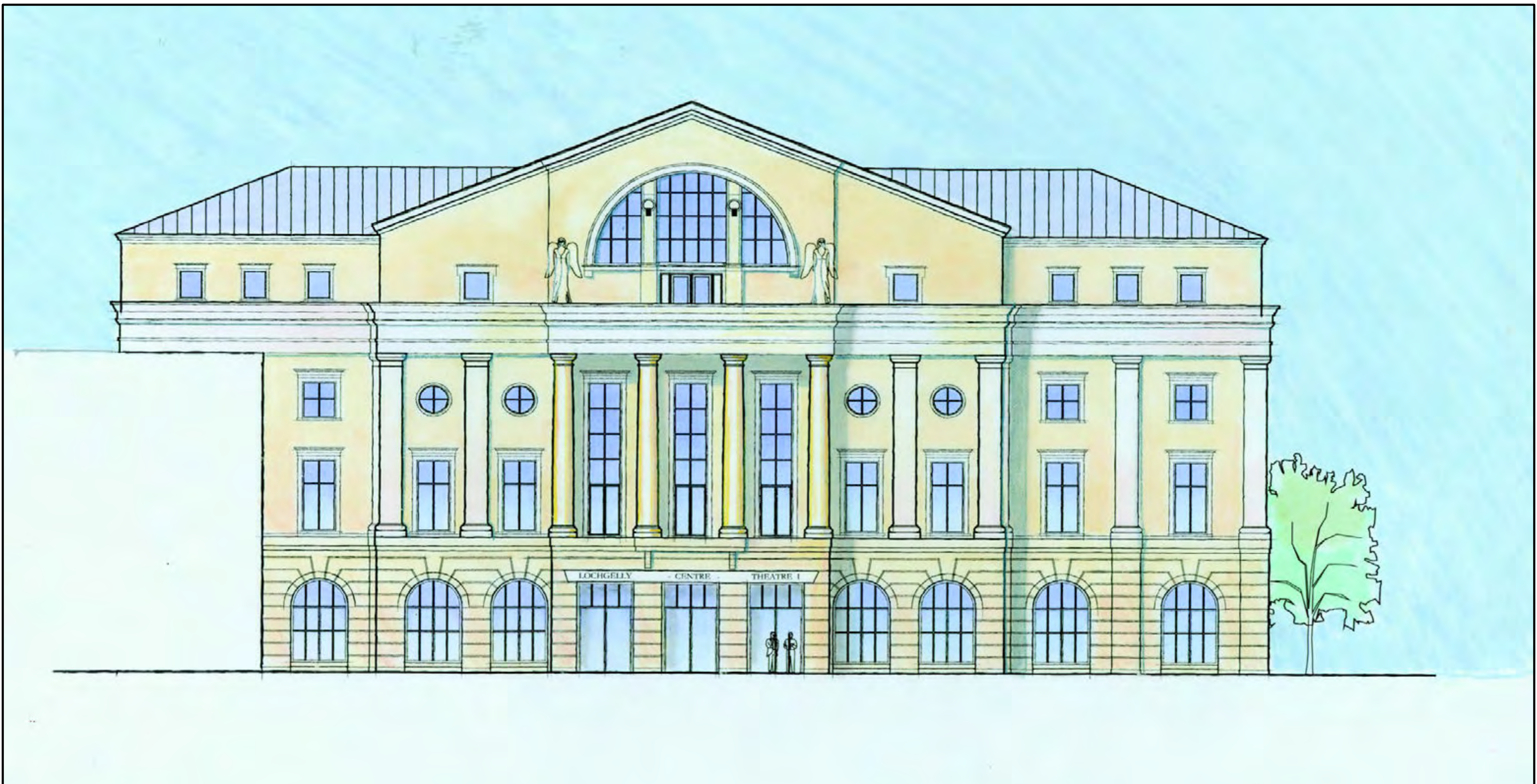
AERIAL PERSPECTIVE VIEW



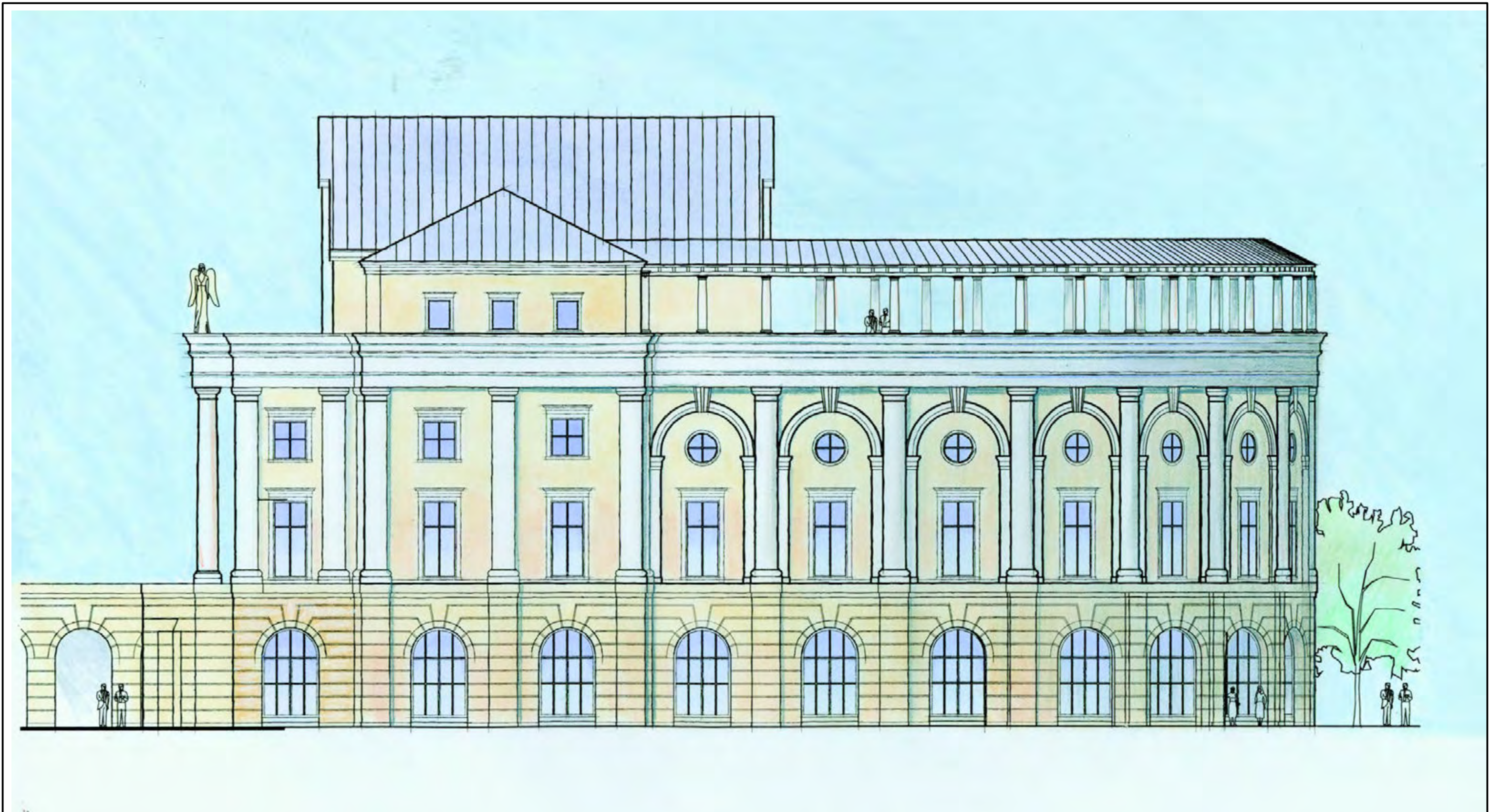
Perspective View from Bank and Auchterderran



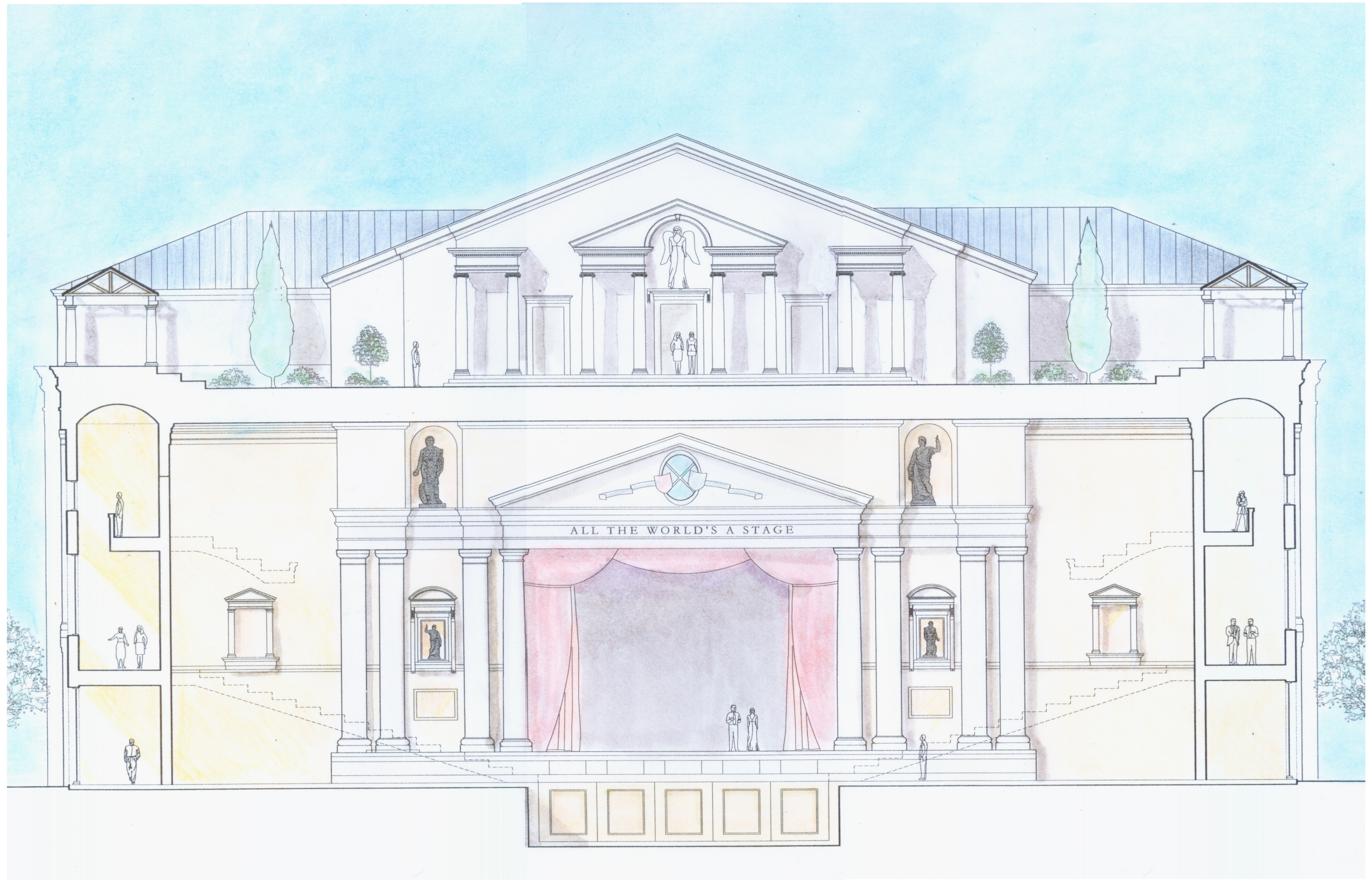
Perspective View from South Bank and Landale



Theater Art Square Elevation



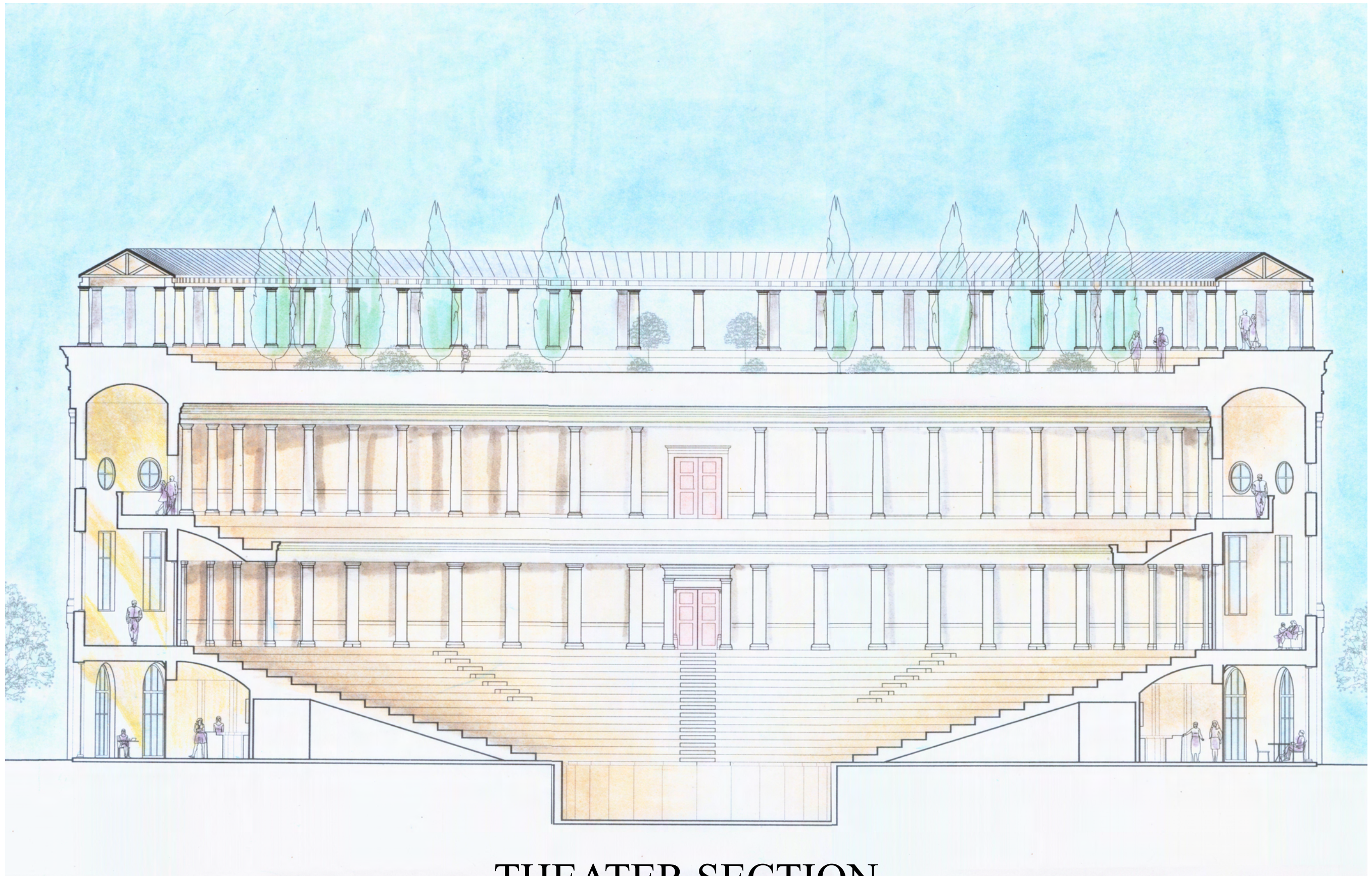
Theater Bank Street Elevation



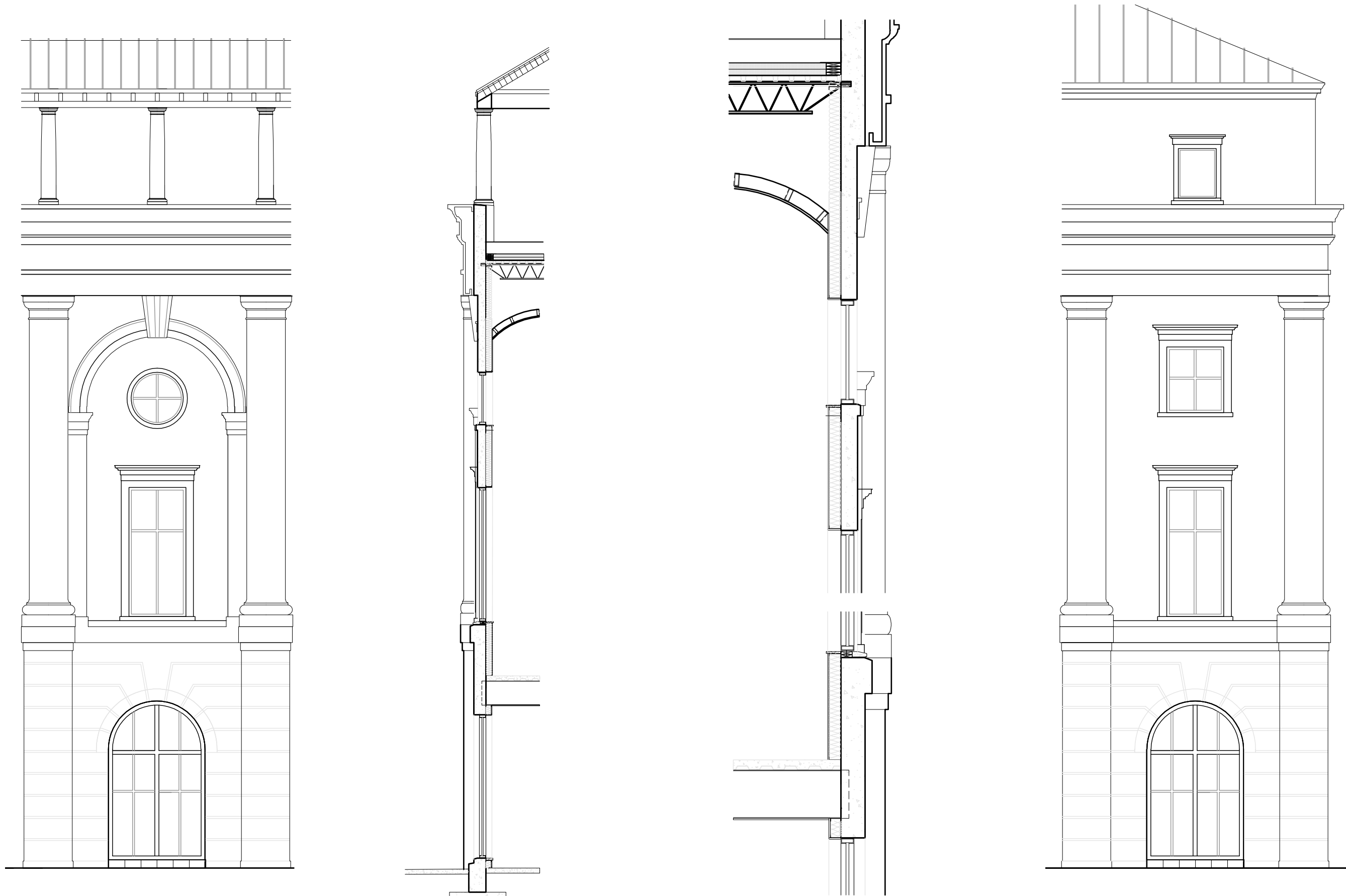
THEATER SECTION



THEATER SECTION



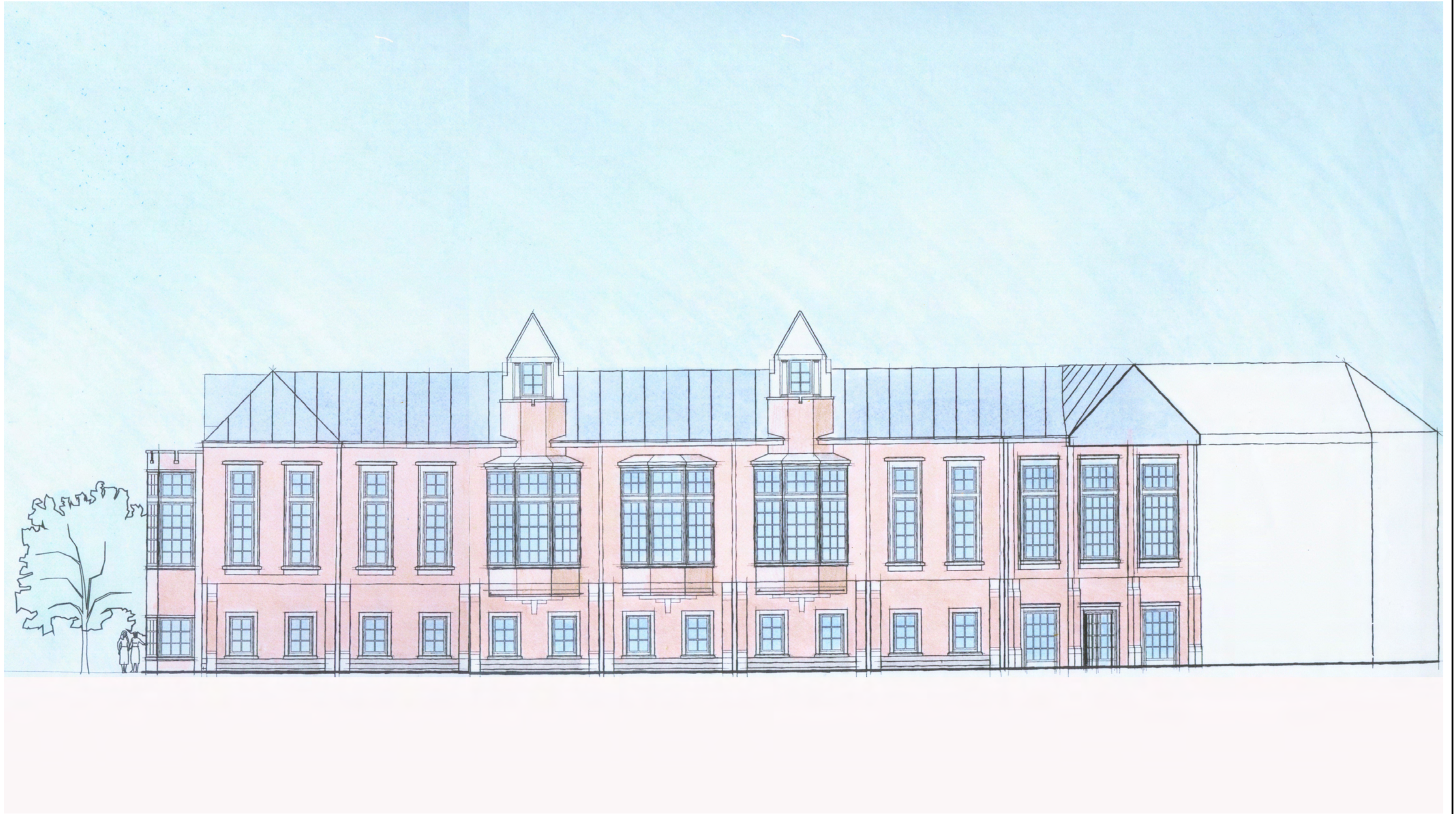
THEATER SECTION



Theater – Site Cast Bearing Wall Panels



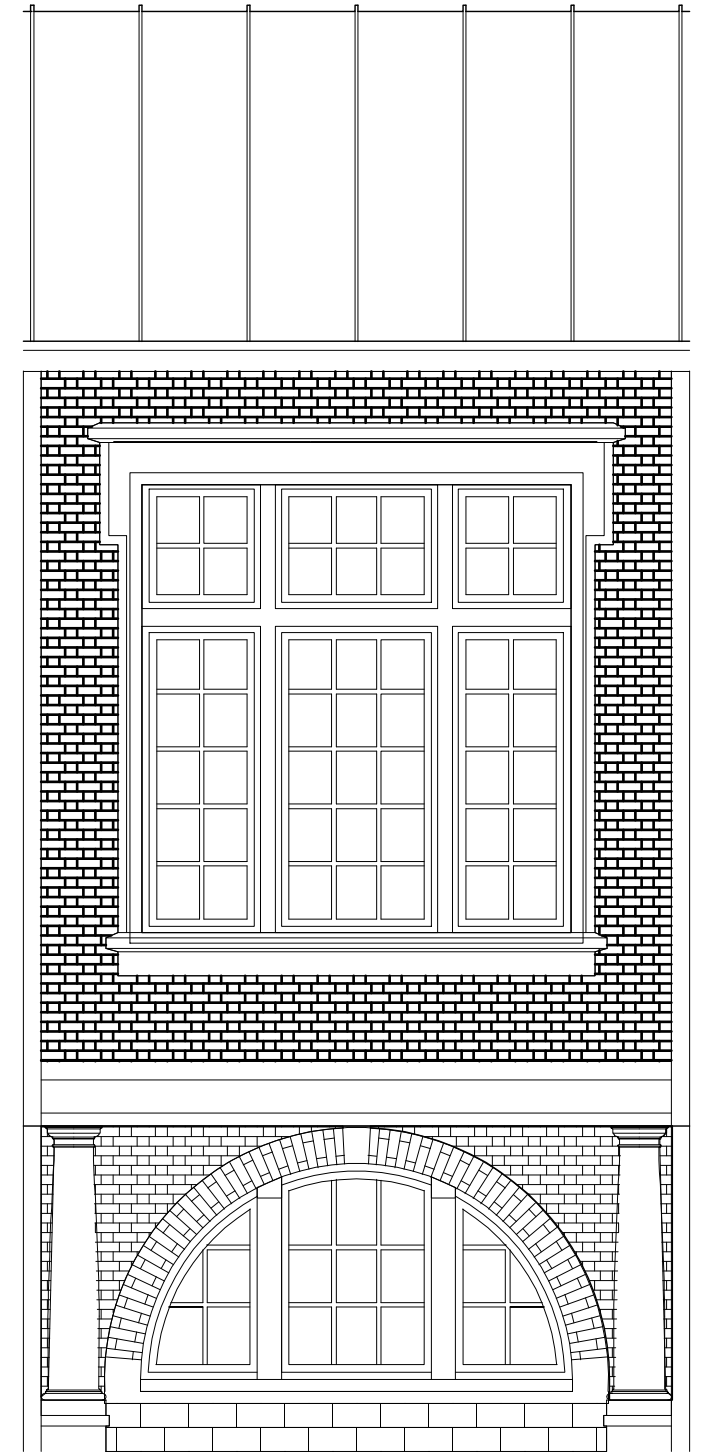
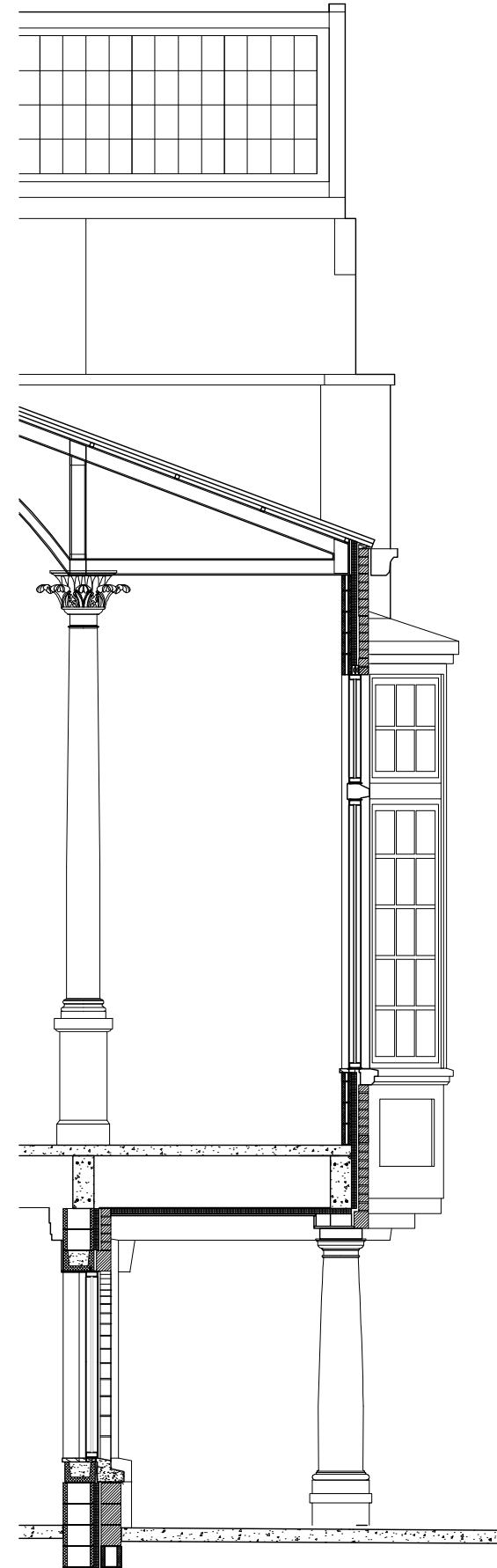
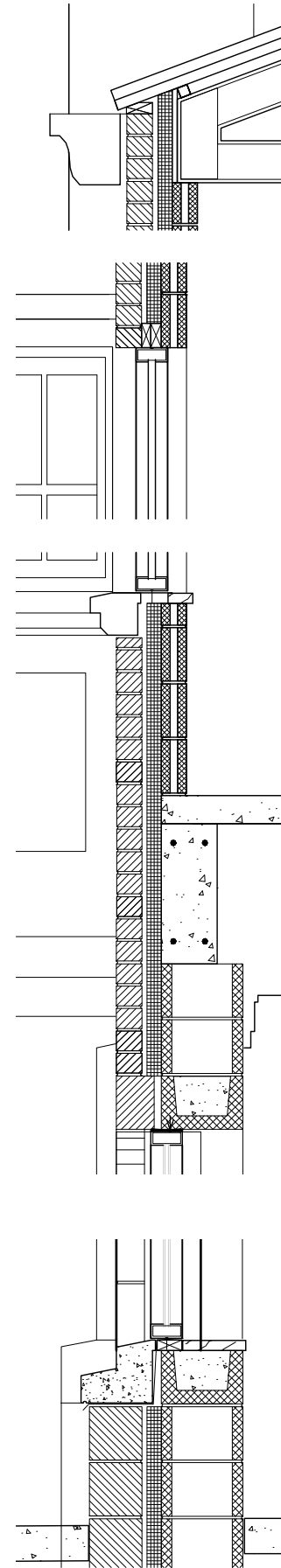
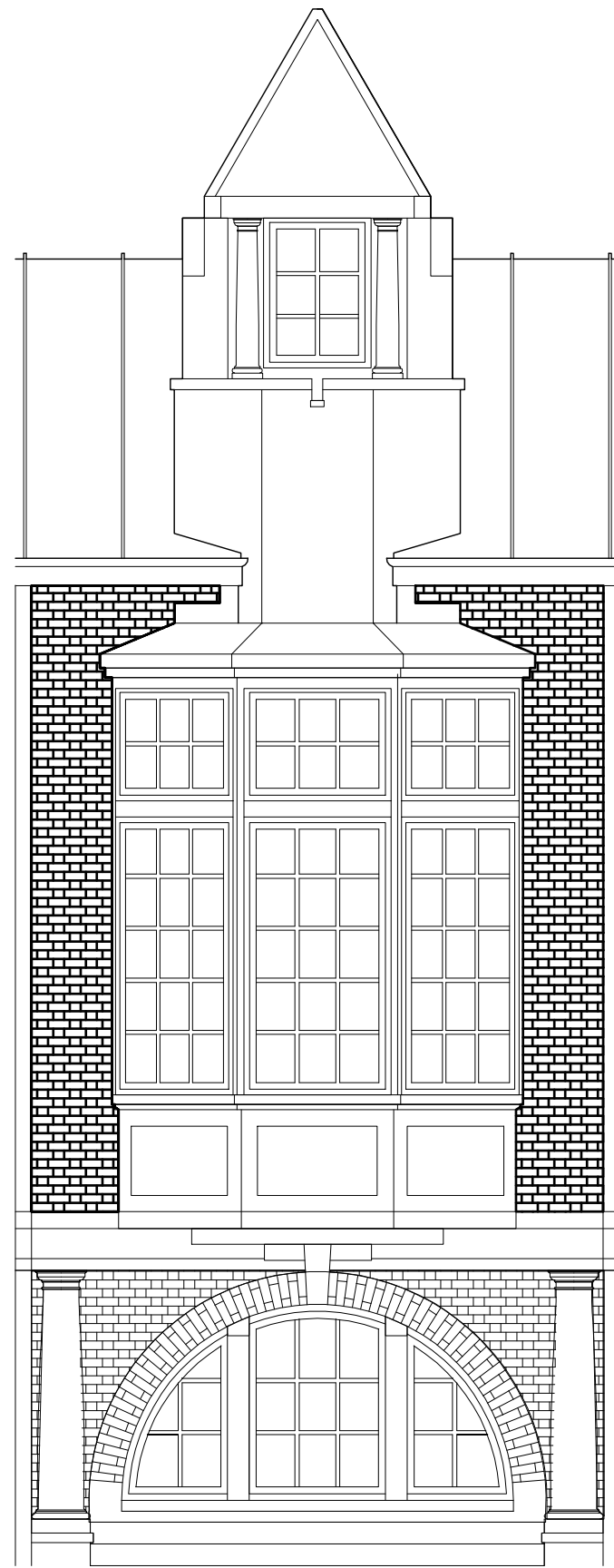
Library Bank Street Elevation



LIBRARY COURT ELEVATION



LIBRARY SECTION



Library - Masonry Wall Bearing Construction



**Lochgelly Centre
Historic Core
Mobility Oriented District**

Employing Mobility-Oriented District Strategies to Transform Lochgelly Into a More Sustainable and Healthy Community

Judson University Graduate Thesis
John Martin, MArch candidate 2012

In the spring of 2010 the town of Lochgelly, as one of the dozen areas identified under the Scottish government SSCI (Scottish Sustainable Cities Initiative) program, undertook a planning charrette in conjunction with the distinguished firm of Duany Plater-Zyberk (DPZ). The result of that effort is a master plan envisioning a fifty year build out. After a period of comment and minor modification the draft plan has now been adapted as a blueprint for future growth and regeneration of the town. This master plan emphasizes new development of 1500 new homes in mixed use neighborhoods on the exterior edges of Lochgelly. These new neighborhoods will be linked through an interconnected series of new streets and a circular bus loop connecting the local neighborhood town centres. This augmented movement system is designed to serve a relocated and enhanced rail station on the Fire Circle Line which is being electrified and upgraded to decrease commuting times to Edinburgh. This new station will form the core of new mixed use transit oriented district to serve as a secondary town centre anchoring the north end of Bank Street. In addition strategies to address problems in the historic core of Lochgelly were also outlined as a vital parallel effort to be undertaken along with the development of the new outlying neighborhoods.

This is a proposal to expand my spring thesis project in Lochgelly, Scotland through the exploration of strategic urban design strategies which have the potential to transform Lochgelly into a more sustainable and healthy community. This project ties into and builds upon the 2010 DPZ Lochgelly draft master plan. While the master plan concentrates principally on peripheral planning of new neighborhoods for 1500 new homes, this studio project focuses on a complimentary redevelopment of the city center. It is also intended to reinforce the five town centre infill proposals and suggested retail management plan outlined in the draft master plan.

Quoting from the plan “Unlike other nearby towns, Lochgelly has not experienced sprawl-like peripheral development of big box chain stores and retains an intact, though deteriorated, historic retail core. This decline can be reversed through a refocusing of attention and development centered on a retail operations management strategy, supplementing the town center with new retail shops including a supermarket and a farmers market selling local and regional produce. This can be further reinforced by reconstructing the transportation system from unconnected streets dominated by cars to a connected coordinated system of pedestrian and protected bicycle paths feeding into a local transit routes centered on the town core, resulting in shorter trips -fewer by car and more by alternative means: walking, biking, and transit. This network would also feed into the regional rail system.” (1)

As a potential approach to augment a redesigned Lochgelly Town Centre and the draft master plan, I would like to suggest a strategy to transform Lochgelly into a Mobility Oriented District. a Mobility-Oriented District, (M.O.D). MOD's have been demonstrated to work through creating a long term plan of centralizing “trip generators” as a hub for paths, including bus routes and protected bike-ways, can result in a 60% reduction in annual driven car miles even before the introduction of fixed rail transit (2). This would be done through the revitalization of the retail and civic core as trip generators in conjunction with implementation of the connected thoroughfare plan resulting from the charrette draft plan. This would promote several goals of the Mid Fife Local Plan (as adopted October 2010): increased central area economic activity, reduced carbon footprint, decreased car use and pollution, and generate additional physical activity.

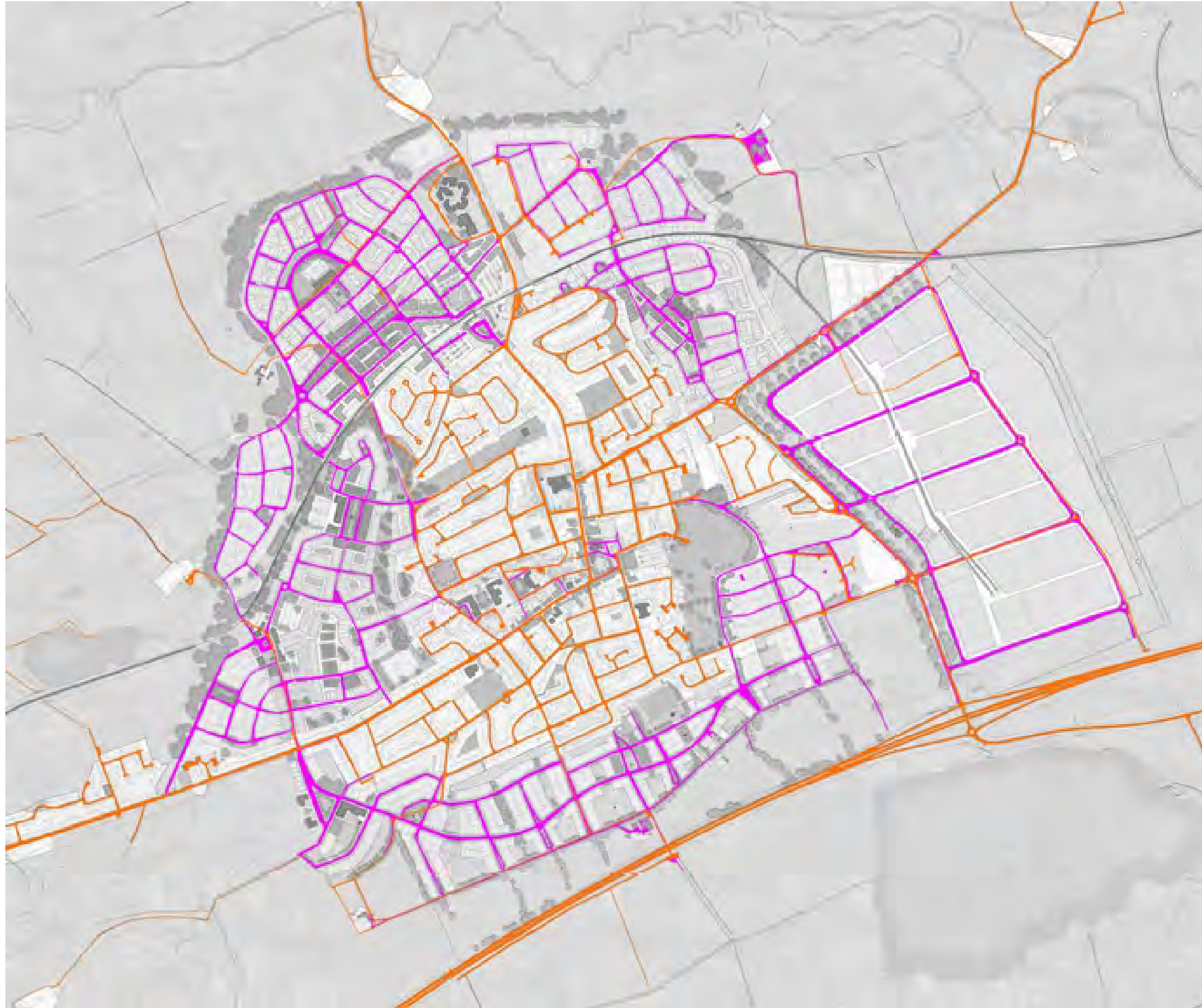
(1) Charrette Report, SSCI Charrette series, Draft edition: 02 August 2010.

(2) Arambula, Don, “Mobility-Oriented Districts-the Next Generation of TOD”, 49th IMCL Conference – Portland, Oregon 22 May 2012.

**LOCHGELLY MASTER PLAN
2060 BUILD OUT**



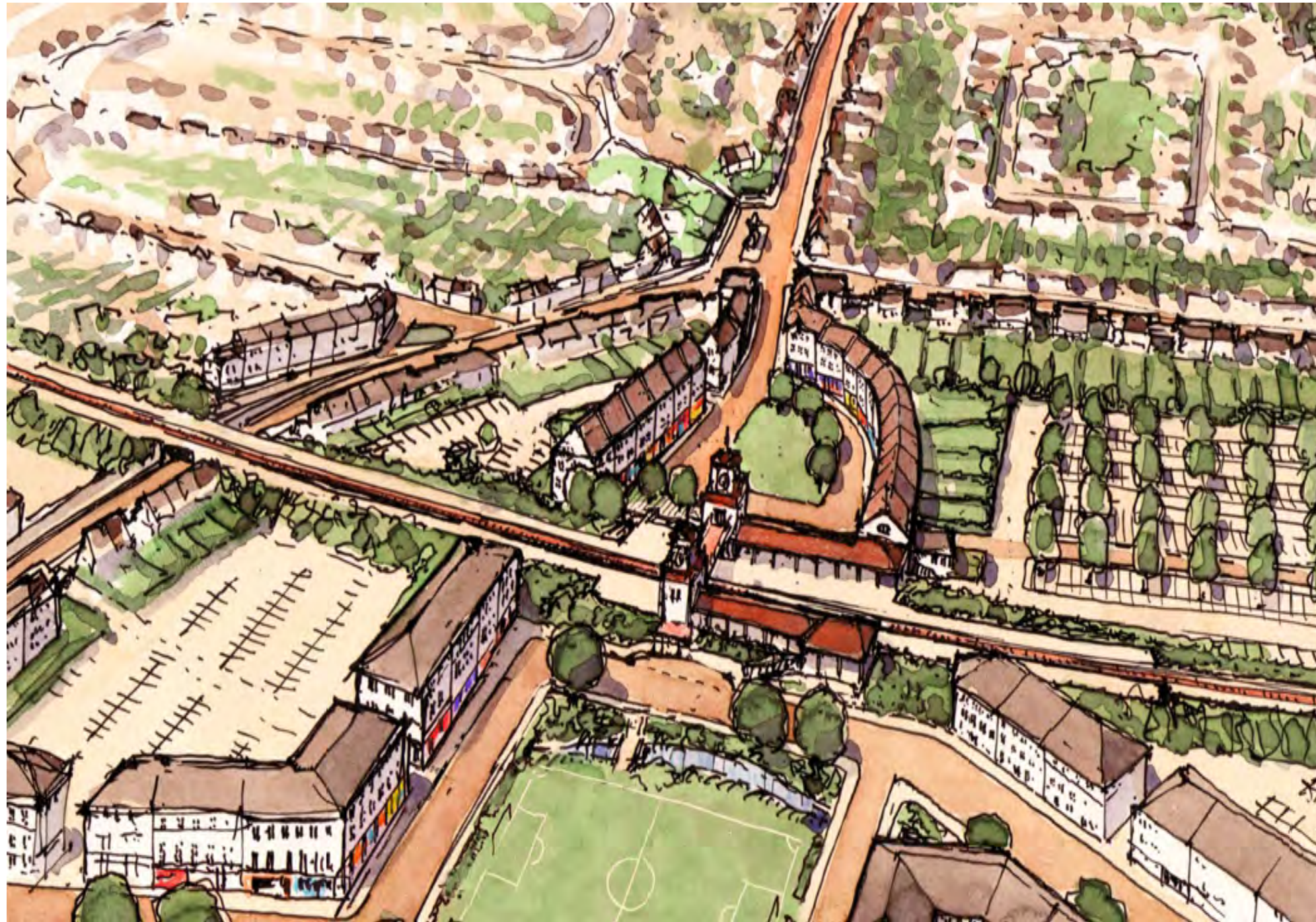
Illustrative master plan by Duany
Plater-Zyberk and Company 2010
For the SSCI Charrette Series



Proposed Thoroughfare Network

The full extension to 2060 allows a thoroughfare system that connects into a greater network, with all neighbourhoods linked for easy transportation by bus or car. This improved street network will support a town-wide bus system. The network is also envisaged to improve connectivity to the centre dissuading residents from out-commuting for work and shopping.

- Existing Thoroughfares
- Proposed Thoroughfares



**PROPOSED LOCHGELLY
REGIONAL RAIL STATION AND
TRANSIT ORIENTED DISTRICT**



Illustrative concept by Duany Plate-
Zyberk and Company 2010
For the SSCI Charrette Series

Recreating Lochgelly as a Mobility Oriented District and Healthier Community

This project is a proposal to broaden the scope of the 2010 Scottish Sustainable Cities Initiative (SSCI) Lochgelly Master Plan. The plan also offers solutions for increasing the viability of the town through a Strategic Land Allocation (SLA) from County Fife, the regional governing and planning body. The adopted plan outlines construction of compact “long life neighborhoods” containing 1750 new homes and supporting uses including schools, mixed use buildings, and requisite physical infrastructure, and proposes concepts for revitalization of the center of Lochgelly.

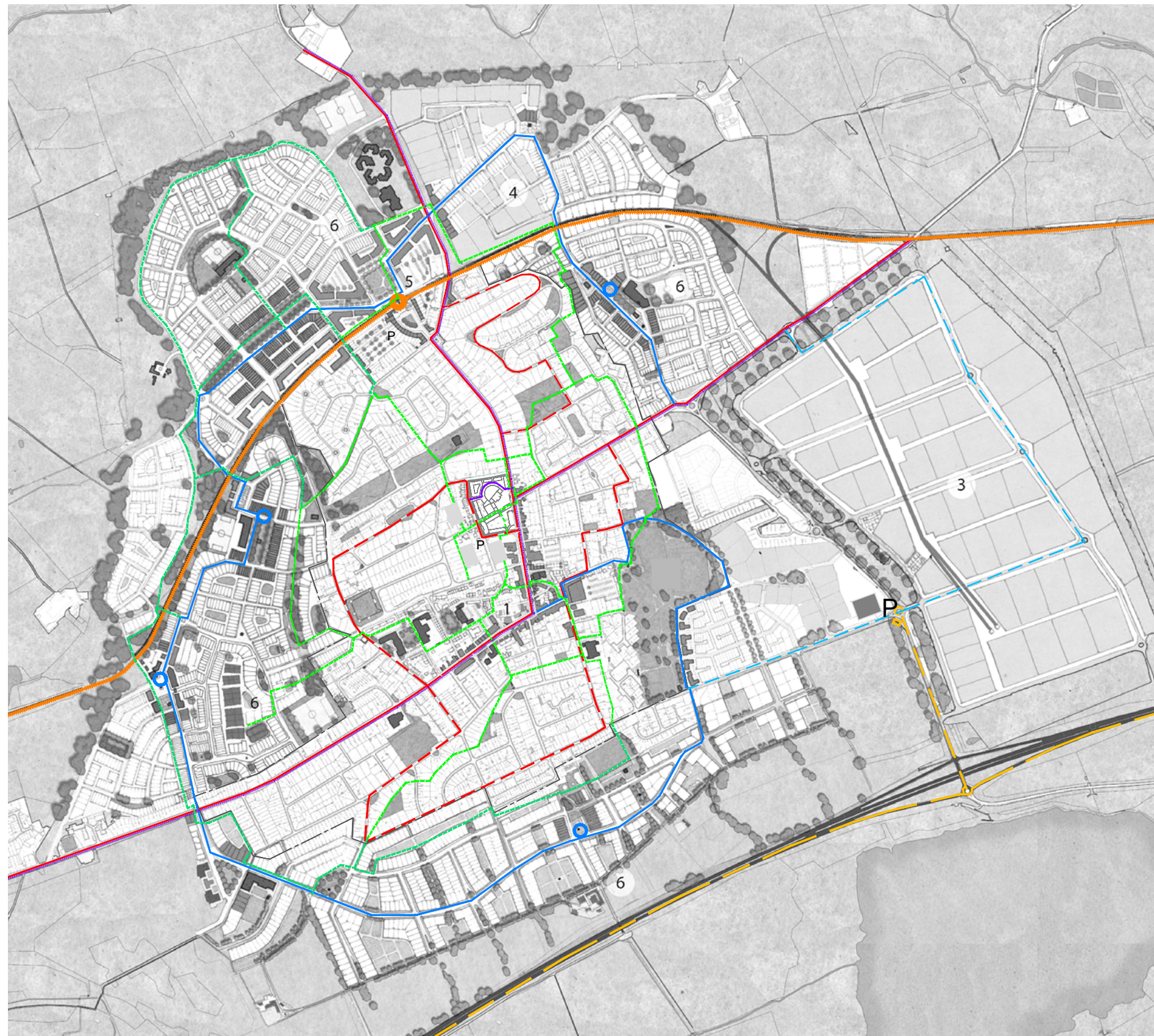
The project outlined here proposes to expand the scope of the SSCI plan by maximizing the potential of peripheral expansion and town center regeneration as an opportunity to implement physical improvements to improve the physical mental and social well being of Lochgelly citizens and create a healthy, sustainable community. As outlined in the book ““Making Healthy Places”¹, this project proposes to do so through construction of a network of greenways to serve as an alternative to trips by automobile, thus forming a Mobility Oriented District (M.O.D.) as outlined in the previous section. Mobility-Oriented Districts are a further refinement of Transit Oriented Development T.O.D.’s first proposed by Peter Calthorpe two decades ago. Based on a strategy of centralizing “trip generators” as a hub for paths, including bus routes and protected bike-ways, the implementation of M.O.D.’s have been shown to result in a significant reduction in the frequency of car trips and trip mileage

This system of paths would be centered on the town’s historic retail and civic core to support regeneration and encourage mobility and safety through walking, biking and transit while shortening or eliminating vehicular trips. Local and regional accessibility would also be increased through tying into existing and proposed bus routes and a new commuter rail station. Finally these pathways would serve elderly and younger people by connecting schools, senior housing, cultural centers, parks and playfields.

¹Dannenberg, Frumkin and Jackson, , 2011 “Making Healthy Places: Designing and Building for Health, Well-being, and Sustainability” Island Press, Washington, DC

Calthorpe, P. 1993 “The Next American Metropolis, Ecology, Community and the American Dream”. Princeton Architectural Press, New York

Lochgelly Master Plan, Base Map and T.O.D. Illustrations are courtesy of SSCI Charrette Series Draft edition: 02 August 2010 developed by Duany Plater-Zyberk & Company and the Scottish Sustainable Communities Initiative and stakeholders during the Lochgelly Charrette conducted 8-13 March 2010.



LOCHGELLY MOBILITY ORIENTED DISTRICT (M.O.D.)

- PROPOSED BIKEWAY/GREENWAY
 This proposed set of all weather Greenways shared with protected bike paths are centered on the historic core and connect it with parks, schools and transit.
- - - POTENTIAL FUTURE GREENWAY
- MARKED BIKE LANES
- - - WIDENED SIDEWALKS
 This initiative expands the existing pedestrian zone northwards to convert the main thoroughfare into a complete street
- EXISTING BUS 10 MINUTE SERVICE
- - - EXISTING BUS 30 MINUTE SERVICE (HAIL & RIDE)
- PROPOSED SSCI BUS EXPANDED SERVICE
- - - POTENTIAL EXPANDED SERVICE
- POTENTIAL EXPRESS SERVICE
- - - ELECTRIFIED RAIL FIVE CIRCLE LINE
- ● RAIL AND BUS STATION/HUBS

Mobility Oriented District Diagrams

The goals of creating a Mobility Oriented District fall into three broad categories listed below, with the specific initiative listed below each category.

I – Transportation, Land Use, Air Quality and Community Design

This primary category introduces specific infrastructure based on successful adoption of coordinated of non-automobile transportation options and land use to provide options for increased mobility and access while reducing pollution and energy consumption.

A. Bikeway/Greenways:

- a new network of paved shared pedestrian/bicycle paths centered on the historic core and connect it with parks, schools and transit;
- paved all weather surface with minimal grades and six to eight feet in width to allow two way traffic;
- constructed where possible on separate rights of way with landscaped buffers and low level lighting.

B. Widened Sidewalks

This initiative expands the existing widened sidewalks and streetscape refurbishment from the historic Crossing of Main and Bank Streets to the current City Hall pedestrian zone northwards to create additional day and evening activity and patronage of restaurants, pubs, shops and other businesses.

C. Marked Bike Lanes--protected and buffered bike lanes which includes:

- a marked lane adjacent to the curb in each direction along Bank Street;
 - a buffered area with flexible marker posts, to help delineate the lane;
 - a parking lane for automobiles where sufficient right of way exists.
- The could be expanded in the further up Bank Street (Station Road) to the new rail station and existing high school. Marked bike lanes could also be implemented along Auchterderran, Main and High Streets to form a “spoke system” of direct, safe, continuous routes in and out of the central Lochgelly with the goal of increasing town centre viability.

D. Interface with existing/proposed Transit:

- direct tie in to existing and proposed bus service through location near principle transit stops including;
- existing bus frequent north south and the east west route to Cowdenbeath and Kirkcaldy;
- (proposed under the SSCI plan) expanded service loops joining the SLA neighborhood centre’s to the central Lochgelly central Lochgelly;
- the greenway and bus network support the both the existing and proposed replacement regional rail station facilitating connections to Dunfermline, and Edinburgh via the Forth Bridge.

E. Lochgelly Centre on and offsite parking:

- provision for onsite parking is limited to encourage alternative transportation, parking for service vehicles, accessible parking, drop off lane vehicles for hire zone is provided via the east west connecting street wrapping around the theater building;
- patrons arriving by car may use one of three screened car parks located just west of Lochgelly Centre; the car parks are connected by the pedestrian pathways to the main square and would utilize pervious parking to minimize storm water runoff.

II – Community Design for Physical Activity

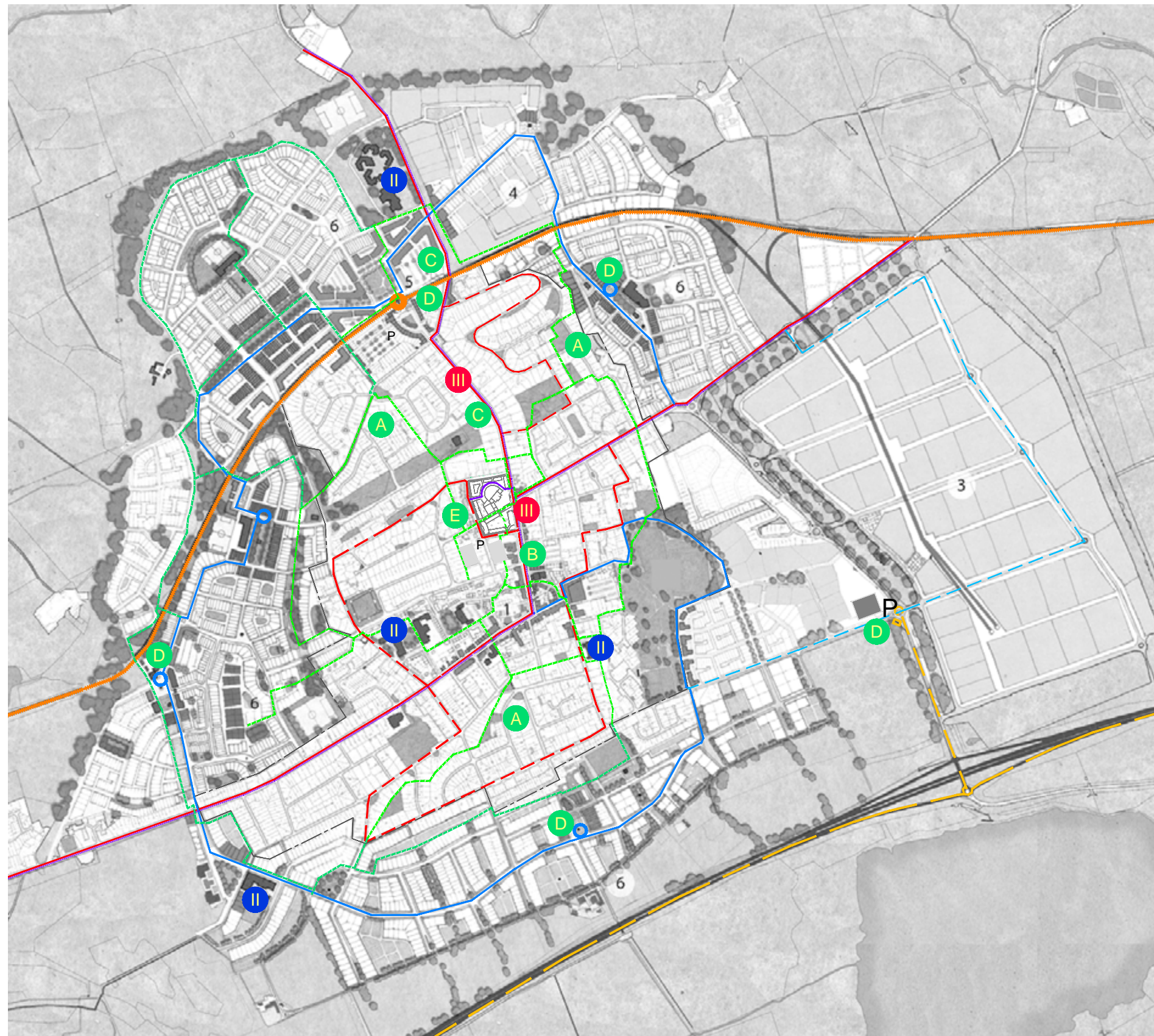
The M.O D. initiative and Lochgelly Centre thesis proposal can be only part of a broader sustained commitment to recreate Lochgelly as a healthy place through changes in physical structure that encourage physical activity, promote driving alternatives of walking, biking and transit and enhance our mental and emotional well being of the citizens of Lochgelly:

- the pathway system connects child centered locations including schools and other structured playgrounds and ball fields with natural areas and places of informal play;
- the revised program for the northwest quadrant of the Lochgelly Centre includes a ground floor child care center with a secure playground, overlooked by upper floors of senior housing;
- an invaluable part of this effort would employ the use of Health Impact Studies to the document health impacts made possible through physical infrastructure improvements;
- build on the foundation for future sustained physical, mental and economic well being of Lochgelly.

III – Building Social Capital and the Built Environment

The Lochgelly Centre project could serve as a catalyst for fostering the growth of social capital. The creation of a new central square would serve as an emotional connection and identifiable civic “great gathering place” for with the citizens of Lochgelly:

- this would be accomplished in part through the definition of the square with architecture that reflects the fabric of Lochgelly, including buildings such as the former town hall and library, the restored miners hall, and the East School which stood for generations on the site until its demolition to make way for the existing arts center. Both strongly figured, variegated spaces and enclosing public facades have the potential to resonate with the citizens of Lochgelly to create an iconic place to be loved and treasured for generations;
- by definition this kind of long term building demands more permanent materials such as solid masonry and formed in place concrete. The employment of durable materials can reduce maintenance, life cycle and replacement costs, and their use as structural bearing walls as well as cladding can reduce first costs required for redundant steel structure otherwise required for gravity and lateral loads. The use of site cast concrete can be a relatively economical means to form “tilt up” load bearing panels enlivened with surface relief to create a memorable sense of place for new and longtime residents;
- this grouping of well proportioned and finely detailed buildings, in conjunction with the infill projects, adjacent investment and adoption of the retail strategy outlined in the 2010 report, would potentially transform Bank Street/Station Road into a humanly scaled retail and civic street, enlivened by new and refurbished mixed use buildings. This regenerated heart of Lochgelly would be further anchored by the new arts square connected to the surrounding district through new shared pedestrian/bike paths. It is important that the square be carefully designed to accommodate local conditions to minimize wind drafts and maximize solar exposure in the winter months;
- social capital can be fostered through program activities and inclusion of seniors into the center of the community. senior housing and mixed uses to promote integration and social and physical activity of all age groups, and contributes to diversity of people and building types. Older adults can serve as role models as children who have exposure to diverse age groups learn appropriate behavior which helps them to mature socially into emotionally healthy adults.



LOCHGELLY MOBILITY ORIENTED DISTRICT (M.O.D.) M.O.D. STRATEGIES

1 Transportation, Land Use, Air Quality and Community Design

- A. Bikeway/Greenways
- B. Widened Sidewalks
- C. Marked Bike Lanes
- D. Interface with existing/proposed Transit
- E. Lochgelly Centre on and offsite parking
- II 2 Community Design for Physical Activity
- III 3 Building Social Capital and the Built Environment



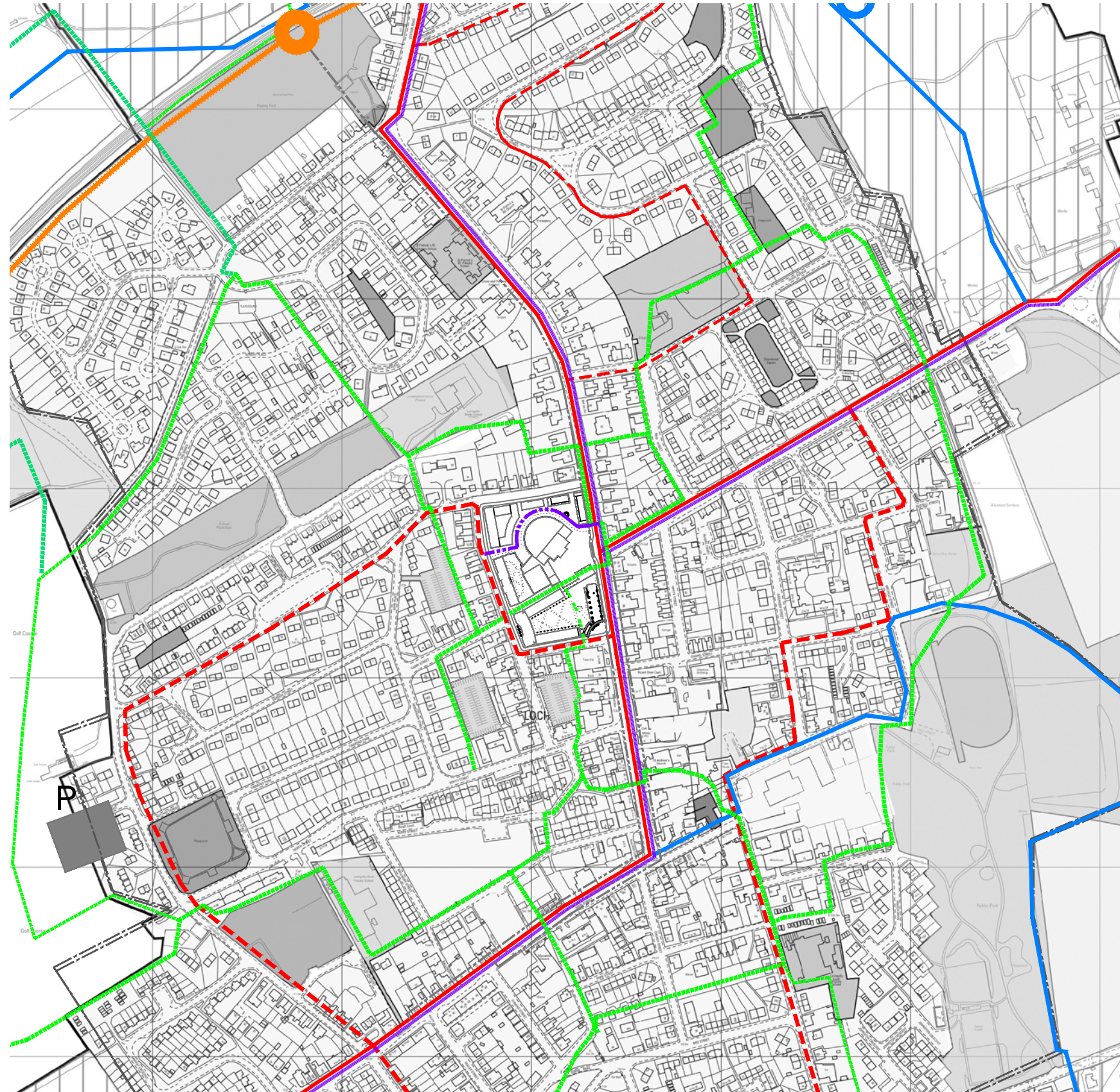
LOCHGELLY MOBILITY ORIENTED DISTRICT (M.O.D.) PEDESTRIAN PATHWAYS AND PROTECTED BIKEWAYS

- PROPOSED BIKEWAY/GREENWAY**
This proposed set of all weather Greenways shared with protected bike paths are centered on the historic core and connect it with parks, schools and transit.
- POTENTIAL FUTURE GREENWAY**
- MARKED BIKE LANES**
- WIDENED SIDEWALKS**
This initiative expands the existing pedestrian zone northwards to convert the main thoroughfare into a complete street

LOCHGELLY MOBILITY ORIENTED DISTRICT (M.O.D.) BUS AND RAIL TRANSIT

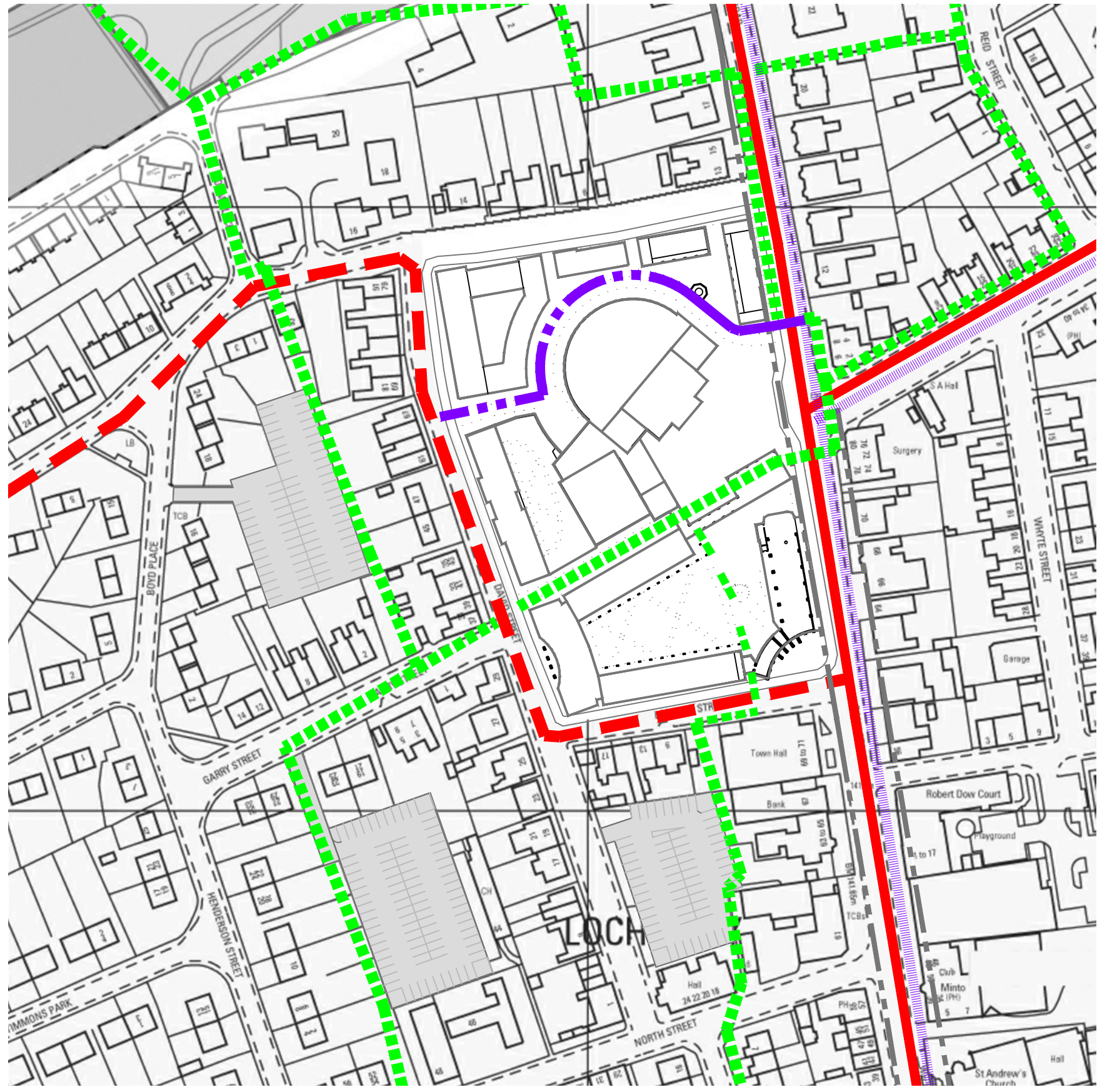


- EXISTING BUS 10 MINUTE SERVICE
- - - EXISTING BUS 30 MINUTE SERVICE (HAIL & RIDE)
- PROPOSED SSCI BUS EXPANDED SERVICE
- - - POTENTIAL EXPANDED SERVICE
- - - POTENTIAL EXPRESS SERVICE
- +++++ ELECTRIFIED RAIL FIFE CIRCLE LINE
- ○ RAIL AND BUS STATION/HUBS



LOCHGELLY MOBILITY ORIENTED DISTRICT (M.O.D.) DISTRICT PLAN

- PROPOSED BIKEWAY/GREENWAY
 This proposed set of all weather Greenways shared with protected bike paths are centered on the historic core and connect it with parks, schools and transit.
- - - POTENTIAL FUTURE GREENWAY
- MARKED BIKE LANES
- - - WIDENED SIDEWALKS
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- POTENTIAL EXPRESS SERVICE
- ELECTRIFIED RAIL FIFE CIRCLE LINE
- ○ RAIL AND BUS STATION/HUBS



LOCHGELLY MOBILITY ORIENTED DISTRICT (M.O.D.) ENLARGED PLAN RELATIONSHIP TO CAR PARKS AND TOWN CENTRE

- - - PROPOSED BIKEWAY/GREENWAY
- - - POTENTIAL FUTURE GREENWAY
- ||||| MARKED BIKE LANES
- - - WIDENED SIDEWALKS
- EXISTING BUS 10 MINUTE SERVICE
- - - EXISTING BUS 30 MINUTE SERVICE (HAIL & RIDE)
- PROPOSED SSCI BUS EXPANDED SERVICE





Town Centre: Infill Projects

The following interventions have been designed to 'seal and heal' the urban fabric, promoting connectivity and creating more usable and vibrant public spaces. The five detailed proposals are explored in the following pages.

1. Miners' Square
2. Lochgelly Centre
3. The New Health Centre
4. The Market Square
5. Farmers' Market Hall
6. Lochgelly West Primary School

Proposed interventions in red

-  Existing Buildings
-  Proposed Buildings

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LOCHGELLY MOBILITY ORIENTED DISTRICT (M.O.D.) RELATIONSHIP WITH TOWN CENTRE RETAIL AND ADOPTED PLAN PROPOSED INTERVENTIONS

- - - - - PROPOSED BIKEWAY/GREENWAY
 This proposed set of all weather Greenways shared with protected bike paths are centered on the historic core and connect it with parks, schools and transit.
- - - - - MARKED BIKE LANES
- - - - - WIDENED SIDEWALKS
 This initiative expands the existing pedestrian zone northwards to convert the main thoroughfare into a pedestrian street
 (Already Completed)
- — — — — EXISTING BUS 10 MINUTE SERVICE
- — — — — EXISTING BUS 30 MINUTE SERVICE (HAIL & RIDE)
- — — — — PROPOSED SSCI BUS EXPANDED SERVICE
- · - · - PEDESTRIAN WAY-VEHICULAR ACCESS