PROTOTYPE:
ENHANCED MODULAR CHILDCARE FACILITY

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ARCHITECTURE
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Modular Childcare Prototype Design
Conceptual Statement

Childcare is witnessing a silent upheaval. As more and more families move away from home care towards preschool childcare centers, new and increasing demands are placed on the educational system. Often times the need outpaces the availability of facilities. New schools cannot be built fast enough or inexpensively enough, and as a result modular units are seen as a temporary or sometimes a permanent fix to the problem.

Modular units being what they are have certain limitations. In choosing the base model there is little variety in appearance and this anonymity does not translate well into pride of place or ownership. Often times there is little or no integration in the site so that you have modular boxes raised off the ground with an apron around them to cover up the wheels and wood foundations.

This is the current standing in many modular childcare centers. The *Think Tank* seminar was convened to address many issues related to modular design. A common theme repeated by the childcare administrators during the seminar was the need for architectural "enhancements" to the modular units, and "raising the bar" for funding so that these enhancements can occur leading to increased pride of ownership and creating a spirit of place.

What you will see on the following pages is a series of data, drawings, and notes for a prototypical childcare center that conceptually looks at new ideas and new thinking in how modular units are joined, located, and enhanced on a site. The design evolved through a collaborative effort of our architectural office R-2ARCH, landscape architect Anne Nelson, and consultants Gretchen Anderson, Ph.D. and Dianne Philibosian, Ph.D.

The modular design was studied on a number of levels after analyzing the Building Program developed by Gretchen and Dianne. To break up the repetitive box like nature of the modulars a concept of rotating one modular of a 3 modular classroom was proposed.

With this one move many different types of habitable spaces are created. Entry to the classroom has a homelike scale, as you are able to approach the building by ramp or stair onto a wood deck and trellised area. This area also serves as an outdoor classroom and a transitional zone to the larger outdoor activity area. The rotated modular unit houses the wet/art activities and allows direct access to the restroom from the outdoor classrooms. A second outdoor classroom space on the opposite side of the rotated modular unit allows for a quieter and smaller environment away from the large outdoor activity. By the use of sliding glass doors or french doors the wet/art activity area has a clearly enhanced indoor-outdoor relationship. The amount of light entering this area is controlled through the use of shade structures.

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The other two modular units form the main classroom space and are open in plan for flexible arrangement of activities. The main entrance to the classroom occurs here with cubby storage adjacent. A raised ceiling near the entry is proposed with north facing glass for naturally diffused day lighting. Joining the three modular units will require some structure to be exposed (a nice architectural surprise). The short end of the rotated modular unit will be left open for good visual cueing; this will expose the required structural cross bracing. The bracing is protected from the children by placing cabinetry on both sides thus allowing maximum viewing area and safety. A wedge shaped piece in plan links together the circulation of the three modular units.

Placement of the modular units on the site are arranged so that the classrooms have many layers of outdoor spaces – small/quiet spaces at the rear of classrooms, small/active spaces at the front of classrooms, and three larger outdoor play areas (designed by Anne Nelson) interspersed into the site. Administration, a classroom side, and a play area link together to create a formal front to the project that is secure upon entering the site.

Additionally you will find some renderings of two of the classroom units that will help you to visualize how the enhanced modular classrooms might appear.

The ideas proposed within are intended to stimulate new ways of looking at how a modular childcare center can be designed. For those of you who have worked on many modular childcare centers, perhaps you can look at it with a new set of eyes. We recognize that site restrictions and construction costs are very real limitations…yes, the "enhancements" will cost money, if provisions need to be made so that work is done in phases that is certainly an option. Rather than accepting the minimum of what modulars have to offer, let us look at what is possible; otherwise, how can one expect to alter the perception/reality many people/projects have of modular design as being inexpensive and unimaginative design?

John G. Davis
R-2ARCH

PROTOTYPE: ENHANCED MODULAR CHILDCARE FACILITY

Drs. Gretchen Anderson & Dianne Philibosian

Program Summary

1 child : 50 u.s.f. Activity Area

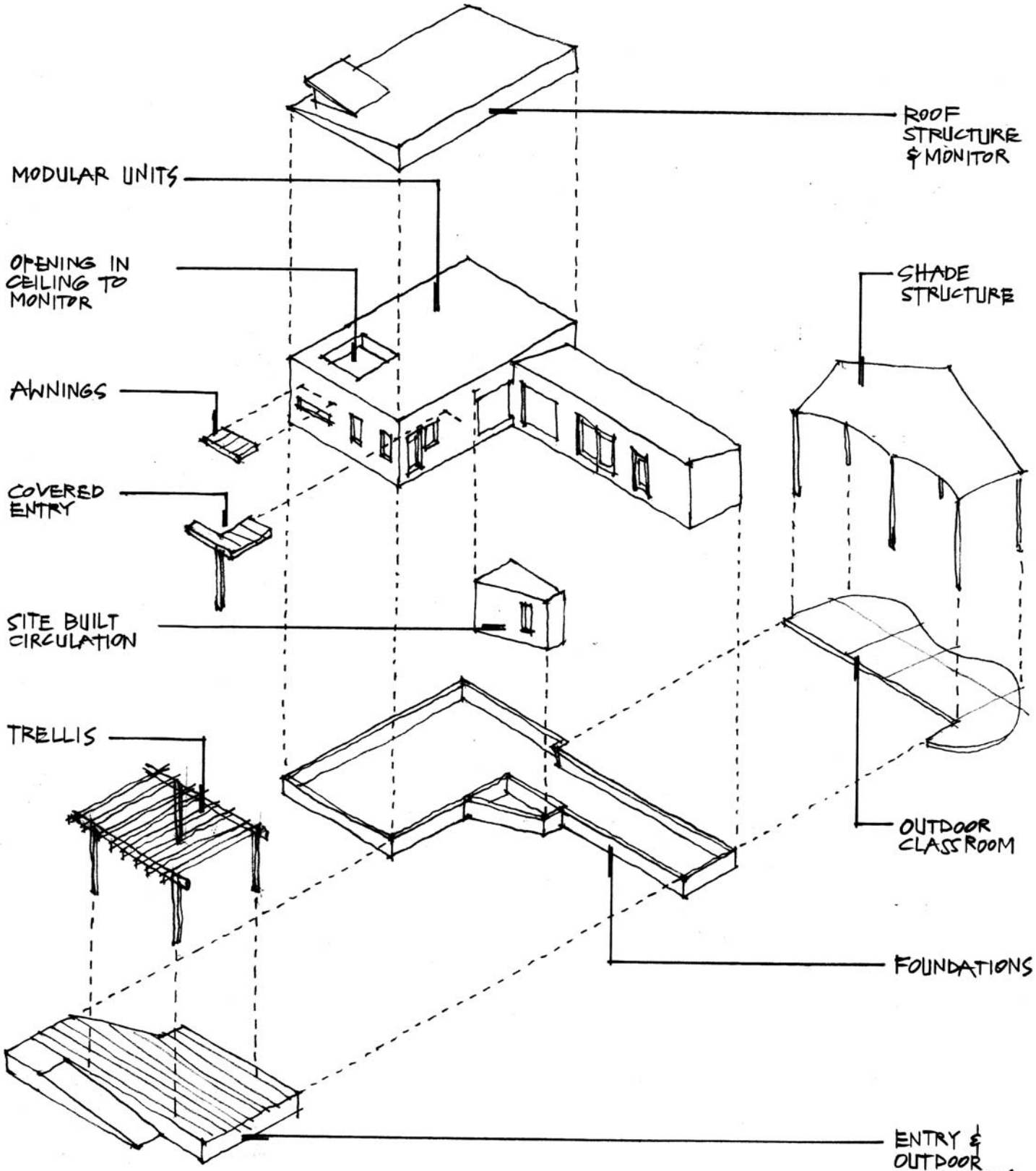
Room/Space	Quantity	Area per Space		Area Total ASF*		Description/Notes
Administrative Office						**2 adjoined 15 X 32 modules**
Entry/Lobby	1	180		180		Includes Parent Area
Reception	1	150		150		Combines w/ Admin Workstations
Staff Office	1	150		150		Director
Admin Workstations	2	90		180		
Copy Room	1	120		120		Includes File Storage
Storage	1	120		120		
Isolation Room	1	60		60		Alcove in Director's Office
Subtotal	**8**	**870**		**960**		
Support Spaces						**Three 12 X 40 modules**
Curriculum Center	1	300		300		
Teacher's Lounge	1	300		300		
Restrooms	2	70		140		Adult
Food Receiving/Pantry	1	80		80		Combines w/ Kitchen
Kitchen	1	150		150		Combines w/ Receiving
Laundry	1	80		80		
Storage	1	90		90		
Conference Room	1	300		300		
Subtotal	**9**	**1,370**		**1,440**		
Classrooms						**3 Adjoined Modules@ 12 X 40ea.=**
Preschool	4	1,440		5,760		**1 Preschool Classroom/1440 asf**
Subtotal	**4**	**1,440**		**5,760**		
Outdoor Storage						**One 15 x 32 Modular**
Equipment	1	240		240		
Earthquake Supplies	1	240		240		
Subtotal		**480**		**480**		*Assignable Square Feet (ASF)
TOTALS	**23**			**8,640**		

THE MODEL MODULAR CHILDCARE CENTER

The center would consist of 4 triple wide module classrooms serving a total of 80 children. Six more modules would be configured to provide administrative spaces, support spaces, and outdoor storage.
The play area/outdoor classroom would be 8000 square feet (100 sq. ft. per child).
Each classroom consists of 3 adjoined or triple wide modules=36 X 40=1440 sq. ft.**

PROGRAM SUMMARY FOR ONE CLASSROOM

Age Range: 3-5 years old
No. of Rooms: 1
Child Count per Room: 20
Group Size: 10
Staff Ratio: 1: 10
Primary Activity Space: 1000 usf
Activity Area: 50 usf per child
Secondary Space: 300 usf
Storage: 140 usf
Total Room Area: 1440 usf
Total Area/Child: 72 sq. ft.



CONCEPT DIAGRAM

POTENTIAL ARCHITECTURAL ENHANCEMENTS

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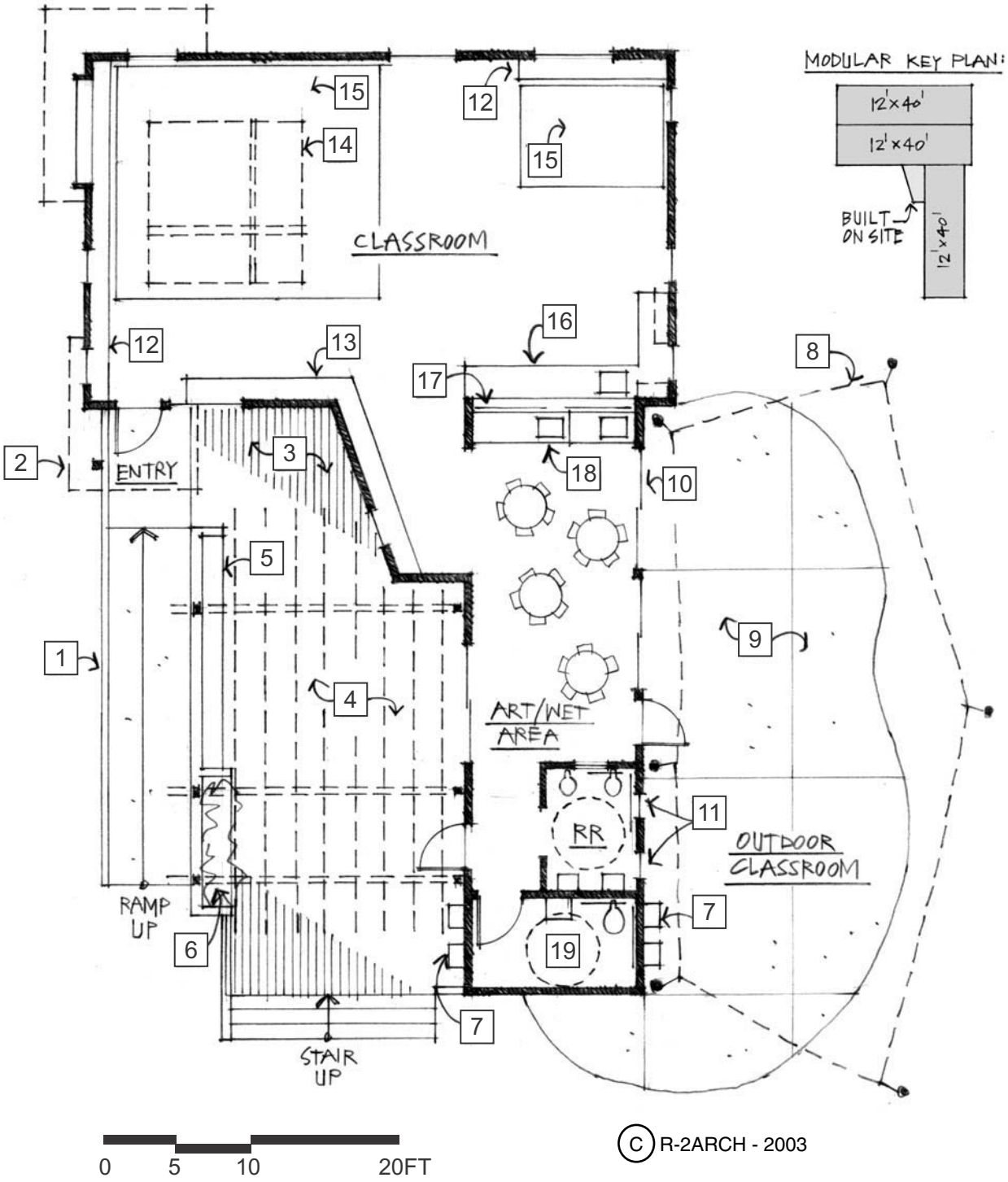

TYPICAL CLASSROOM FLOOR PLAN

LIST OF FEATURES

EXTERIOR:

1. CONCRETE RAMP
2. COVERED ENTRY
3. RAISED WOOD DECK
4. TRELLIS ABOVE
5. CHILD HEIGHT BENCH
6. PLANTER
7. CHILD HEIGHT SINK & DRINKING FOUNTAIN
8. SHADE STRUCTURE ABOVE
9. CONCRETE SLAB ON GRADE
10. SLIDING GLASS DOORS
11. OPERABLE WINDOWS AT RESTROOM

INTERIOR:

12. LOW STORAGE
13. CUBBIE STORAGE/OTHER STORAGE
14. RAISED "POP-UP" CEILING
15. AREA RUG
16. ADULT HEIGHT COUNTER & SINK
17. EXPOSED X-BRACING ABOVE COUNTERS
18. ADULT & CHILD HEIGHT ART SINKS
19. ADULT RESTROOM or STORAGE

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OUTDOOR PLAY AREA

1. COMMONS
2. MAIN STREET
3. SHADE PAVILIONS
4. SAND PLAY
5. PLAY HOUSE VILLAGE
6. CHILDREN'S GARDENS
7. CLIMBING STRUCTURE
8. GRASS BERM
9. STORAGE / W.C.
10. WOODWORKING PLAZA
11. WILD ZONE
12. OUTDOOR CLASSROOM

LANDSCAPE DESIGN

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LANDSCAPE ARCHITECTURE/PLAYGROUND DESIGN
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SITE PLAN

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Outdoor Play Area Notes for the Modular Preschool Site

Note: The numbers are keyed to the activity areas shown on the Site and Playground Plan.

1 The "Common Area" is a large, flat, open grassy area for group activities, ball play, games, running, and family events.

2 "Main Street" is a wide paved boulevard for two-way trike traffic. It connects the classrooms with all areas of the playground and the administration building and provides maintenance access.

3 A shade pavilion is located at each end of "Main Street".

4 There is one large deep (24"min) excavated sand play area with shade and year-round water nearby.

5 A "Playhouse Village" (3 houses) sits in an orchard of semi-dwarf fruit trees.

6 Children's gardening beds (some raised) are part of the "Village". Edible plants are planted here and throughout the play yard.

7 There is one large climber with lots of upper body elements and safety surface underneath.

8 A grass berm provides opportunities for climbing and sliding.

9 A large storage barn for trikes, sand toys, gardening tools and other outdoor equipment and materials sits at the end of "Main Street." There is a bathroom located in this building.

10 The woodworking plaza is a separate area, out of the way, for woodworking and large construction activities using the adventure playground model. There is direct access to an indoor storage area in the administration building for tools, wood, and loose parts.

11 A "Wild Zone" has lots of natural materials such as mud, tree trunks, stumps and boulders, as well as lots of building materials for forts, tunnels, tree-houses. This is a play area that gives the children daily opportunities to change their environment.

12 Each classroom has outside deck/patio spaces for any kind of organized class activity, but especially for science, art, and water play (the messy stuff).

VIEW 1
CLASSROOM 3 & 4

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VIEW 2
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VIEW 4

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